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Information Resources on the Care and Welfare of Dogs



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March 2008

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Compiled by:

Cynthia P. Smith, M.S.

Animal Welfare Information Center

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U.S. Department of Agriculture

Beltsville, Maryland 20705

E-mail: awic@nal.usda.gov

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Table of Contents

About this Document	iii
Introduction by Robert Hubrecht	1
Bibliography	
Anesthesia and Analgesia	9
Behavior	29
Breeding	93
Clinical and Laboratory Techniques	99
Feeding	137
General	145
Health	149
Housing	229
Husbandry	237
Physiology	241
Regulations	257
Shelter Dogs	267
Therapeutic and Working Dogs	279
Zoonoses	287
Web Resources	303

The Animal Welfare Information Center (AWIC) is part of the National Agricultural Library, which is located in Beltsville, Maryland. Established in 1986 as mandated by amendments to the Animal Welfare Act, AWIC provides information for improved animal care and use in research, teaching, and testing.

About this Document

*This publication updates and expands AWIC publication *Housing, Husbandry, and Welfare of the Dog Quick Bibliography Series, QB 97-08*, available online at <http://www.nal.usda.gov/awic/pubs/oldbib/qb9708.htm>. The current publication is divided into three major sections: *Introduction, Bibliography, and Website Resources*.*

Introduction

The introduction was written by Robert Hubrecht, PhD., Deputy (Scientific) Director, for the Universities Federation for Animal Welfare (UFAW), United Kingdom. Dr. Hubrecht is one of the world's leading experts on animal welfare and husbandry issues concerning the use of dogs in research settings.

Bibliography

An extensive bibliography categorized into fifteen subject subsections covering all aspects of dog husbandry, health, and welfare comprises this section of the publication. Citations were selected from searches conducted using a variety of agricultural, medical, and life science databases. Within a subject category citations are arranged alphabetically according to the last name of the primary author. Each citation is listed with a set of keywords that describe useful information about the entry. If a citation is listed from a publication available through the National Agricultural Library (NAL) a NAL call number has been included. Entries were included with publications dates ranging from 1997-2007.

Web Site Resources

A selected listing of annotated web site resources relating primarily to the care and welfare of laboratory dogs are provided. Some sites listed include information on the veterinary care and husbandry of companion dogs and dogs used in sport as well. World Wide Web addresses are listed to access specialized databases, extension materials, videos, and publications produced by a variety of government and non-profit organizations. All resources are accessible through the internet and are current as of January 2008. Readers are cautioned as to the dynamic nature of the internet and the fact that addresses and content are subject to change.

National Agricultural Library Document Delivery

Information on how to request materials that are included in the collection of the National Agricultural Library (NAL) may be found on the the Request Library Materials page at <http://www.nal.usda.gov/services/request.shtml>. Please read carefully as there are certain restrictions on media and document types. All patrons are encouraged to explore local library resources first before contacting the National Agricultural Library.

Acknowledgements

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Introduction

By Robert Hubrecht PhD CBIol FIBiol

Deputy (Scientific) Director

Universities federation for Animal Welfare (UFAW)

The Old School

Brewhouse Hill

Wheathampstead

Herts

AL4 8RH

UK

Data from archaeology and molecular studies indicate that dogs have been domesticated for at least 14,000 years, and possibly much longer (Clutton-Brock, 1995; Vila et al., 1997), and thus were amongst the first domesticated animals. The dog's ancestor is generally considered to be the wolf (Jackson, 1994) although it has been argued that the lineage was separate with occasional interbreeding with wolves (Koler-Matznick, 2002). Certainly, dog-wolf offspring can still be fertile (Alderton, 1994). The long period of domestication has provided ample opportunity for humans to select for the enormous variation in physical and behavioral traits, greater than that seen in any other domesticated species (Asdell, 1966), that we now see in the domestic dog. Early breed selection was probably for hunting and guarding, as well as some propensity to interact well with humans. However, dogs have been bred for many other traits including herding, haulage, companionship, and the ability to provide assistance (e.g. guide dogs, hearing dogs, and dogs for the disabled). Some dogs now have a highly developed ability to interpret human signals, and can even imitate, thus mapping another's behavior on to itself (Tópal et al., 2006).

Dog Breeds

Sadly, selection for desired traits has led to the development of breed defects. These can arise as a direct result of the trait being selected for (e.g. respiratory problems in brachycephalic dogs), or through inadvertent selection for harmful genes that may be closely linked to the gene coding for the desired trait. Naturally, breeders want offspring to breed true, and so animals have often been inbred with the undesired consequence of concentrating deleterious genes within a breed population. The result is that most breeds have a range of inherited defects (an online database <http://omia.angis.org.au/> lists 481 genes, inherited disorders and traits for the dog) some of which may have an unacceptably high incidence, but which could be reduced by appropriate screening and breeding programs (McGreevy and Nicholas, 1999; CAWC, 2006). It has been suggested that domestication has, at least partly, involved

selection for juvenile characteristics (for example, increased dependence, propensity to bark) and that this has resulted in the domestic dog becoming neotenized. Some breeds have clearly been selected specifically for infantile looks, and it is interesting to note that breeds that look most different from the ancestral type have experienced greater loss of their ability to express behavioral signals (Goodwin et al., 1977). While it is conceivable that these breeds might have greater difficulty interacting in a group, the welfare consequences have not been researched.

Stray and feral dogs

Major welfare problems for companion dogs are that many stray, and huge numbers each year are abandoned. Behavior problems are commonly given as reasons for giving up animals to rescue organizations and to address these there is a growing industry of dog behavior consultants; some of whom are beginning to use their experience in behavior modification to advise on the training or behavior of dogs used in research. Abandoned or stray dogs may experience malnutrition, injury, illness or death. According to the HSUS website (HSUS, 2007) between six and eight million dogs and cats enter U.S. shelters every year and three to four million of these animals are euthanized because there are not enough homes for them. There is continuing research on temperament tests to match dogs with potential new owners. In some countries dogs are taken from pounds and used by research establishments, although this is not legal within Europe. It could be argued that using pound dogs is ethically preferable to destroying them, which then necessitates breeding others for research, however, the JWGR (2004) provides a number of good reasons (health, safety, public confidence, etc) why purpose breeding is preferable.

Housing and Husbandry

Dogs are kept in kennels by a variety of organizations. Examples include: rescue organizations, hunt kennels, quarantine kennels, boarding kennels, police, and assistance organizations. In addition dogs (mainly beagles) are bred and kept in kennels for biomedical research and for nutritional studies. A useful general source of information for housing and care of laboratory dogs is (MacArthur Clark, 1999). Traditionally kennels were often small, designed to house one dog, and were often devoid of anything to occupy the dog or provide variety. Such environments resulted in timid fearful dogs or dogs with repetitive behavior disorders such as stereotypies, or self injuring behavior. Studies in both shelters and research establishments have shown that the longer dogs spend in sub-optimal environments, the more likely they are to show abnormal or undesirable behaviors (Hubrecht, 1995; Wells et al., 2002). These dogs are likely to make poor research subjects; moreover, since dogs may spend considerable periods in kennels the welfare impact can be considerable. Over the last 15 years or so, there have been some important changes in the conditions considered acceptable for the breeding and keeping dogs used in research and these have also influenced standards for other types of kenneling. There are several recent documents that provide

comprehensive reviews and recommendations based on applied research and the natural history of the dog (Hubrecht and Buckwell, 2004; JWGR, 2004; Council of Europe, 2006). Of these, the JWGR (2004) is a particularly useful document as it covers an extremely wide range of topics through breeding, transport, procedures and ultimate destiny of the dog. Many of the principles outlined in these documents have been successfully incorporated into research facilities (e.g. Ottesen et al., 2004) and have resulted in notable behavioural improvements.

One of the most important changes in the kennelling of research dogs has been in the reduction of single housing. For many years social housing has been the default system in the UK. In the UK minimum enclosure dimensions are sufficient to house one or two dogs, therefore making pair housing financially advantageous. A similar strategy has now been adopted in the recent revision of Council of Europe recommendations (Council of Europe, 2006), and social housing is becoming ever more widely accepted throughout the research community. Even where dogs have to be isolated during dosing in regulatory studies, or feeding during nutritional studies, dogs can still be housed in pairs or groups for the rest of the time. Bayne (2003) notes “In Europe, it is common for dogs on GLP toxicology studies to be socially housed, but separate them for feeding so food consumption can be better measured. This trend is less common, however, in the United States”. Nonetheless, (Mack et al., 2003) have shown that it can be done, and as UK companies have to comply with either the same or similar regulatory requirements, a more general adoption of social housing would seem to be a relatively easy gain to be made in the USA. Good kennel design is critical in allowing the adoption of social housing and modular designs, allowing animals to be run together as desired, are a useful flexible means of achieving this. Social housing does bring an increased risk of injury, however, and husbandry regimes should be designed to monitor aggression (Hubrecht and Buckwell, 2004).

Exercise, human contact, socialization, and training

Some dogs clearly enjoy exercise, but when companion animals are exercised they also experience exploration, territory marking and socializations all of which are likely to add to the hedonistic experience of the activity. Hence, in the research setting the benefits of exercise periods will, to a large extent, depend on the exploratory and social opportunities offered to the dogs. Depending on how dogs have been socialized, human contact can be very important for them but providing sufficient human contact in kennels can be a serious difficulty. Often less than an hour a day is feasible, but even 45 minutes has been shown to be beneficial (e.g. for shelter dogs Coppola et al., 2006). Dogs used in research can be trained to cooperate with husbandry and research procedures (Boxall et al., 2004). The dogs are given more human contact time and are less nervous, which is good for their welfare; and they are more cooperative and easier to handle which is good for the staff and researcher. Accustoming the animal to situations or handling techniques that it will meet later in life can

be done at the breeding facility but requires good communication between the researcher and the breeding establishment.

Non-Social enrichment

Compared to primates and rodents, there have been rather few studies on non-social enrichment for dogs. Those studies that have been carried out (reviewed with social enrichment in Wells, 2004 and JWGR, 2004) emphasize the importance of providing chews, platforms, visual sight lines and complexity and of designing enrichment strategies with the dogs natural behavior and sensory modalities in mind. Unfortunately, there have been very few studies on auditory or olfactory enrichment which is a glaring omission given the importance of these senses to the dog. A subject of some interest, however, has been the use of dog appeasement pheromone (DAP) as a means of reducing the stress of dogs when placed in unfamiliar circumstances. This has been tested on dogs taken to veterinary surgeries, and in shelters (e.g. Tod et al., 2005).

Nutrition and health and behavior

Many dogs are highly motivated by food (chews that taste of food seem to be preferred by dogs), and a study reported in Houpt and Zicker (2003) estimated that 24-30% of adult American dogs were overweight, with concomitant health risks of musculoskeletal, cardiovascular problems and diabetes. Conversely, many stray dogs suffer from malnutrition, which, if experienced during development, can lead to behavioral as well as physical abnormalities. Much attention is given by pet food manufacturers to ensuring that their diets are palatable, as owners are often influenced in their purchasing decisions by their dog's reaction to food. Much less attention seems to have been given to commercial laboratory diets, however, as very palatable diets can increase the risk of aggression in kennels (Coppinger and Zucotti, 1999) this may have helped the move toward social housing. In an aging society, links between diet and cognition and behavior are of increased interest, and dogs have been used in studies on the effects of diet on behavior and cognitive function as a model of human degenerative disorders as well as to study the effects of diet on companion animals (see Houpt and Zicker, 2003; Zicker, 2005).

Noise

Dogs are capable of generating a great deal of noise. This can be a potential health problem for humans working in kennels, and given the greater sensitivity of dogs to sound, may be a welfare issue for the dogs themselves (Sales et al., 1997; Coppola et al., 2006). Buildings and husbandry routines should be designed so as to reduce noise. A study of shelter dogs has shown that group housing is associated with a significant reduction in noise production (Mertens and Unshelm, 1996), which could well be a significant benefit in the research setting.

Detection of stress, distress and pain relief

Refinement of procedures is dependent on detecting signs of stress, distress and pain. Institutions should ensure that staff are trained in these skills (JWGR, 2004) and Beerda et al., 2000) provides a number of indicators of chronic and acute stress. Post-operative analgesia is now routine for research animals (see Flecknell, 1997). There is growing interest in research into alleviating pain for companion dogs (Hansen, 2003), and this provides a body of research and experience to the research scientist working with dogs that is not available for some other species.

Further information

The topics covered in this introduction have necessarily been dealt with briefly. The linked bibliography provides both further information on dog welfare (for example information on anaesthesia, analgesia and health) and also a wealth of information pertaining to practical issues such as breeding, the use of dogs in research and zoonoses. Staff caring for dogs, whether in rescue shelters, quarantine kennels, working dog kennels, boarding kennels or research establishments, as well as those intending to use them in research have an ethical obligation to understand their needs and to meet these as far as possible. This bibliography is an extremely useful resource that will help them towards this goal.

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Anesthesia and Analgesia

Ambrisko, T.D. and Y. Hikasa (2003). **The antagonistic effects of atipamezole and yohimbine on stress-related neurohormonal and metabolic responses induced by medetomidine in dogs.** *Canadian Journal of Veterinary Research* 67(1): 64-67. ISSN: 0830-9000.

NAL Call Number: SF601.C24

Abstract: This study aimed to compare the antagonistic effects of atipamezole (40, 120, and 320 µg/kg, IM), yohimbine (110 µg/kg, IM), and saline on neurohormonal and metabolic responses induced by medetomidine (20 µg/kg, IM). Five beagle dogs were used in each of the 5 experimental groups in randomized order. Blood samples were taken for 6 h. Medetomidine significantly decreased norepinephrine, epinephrine, insulin, and nonesterified fatty acid levels, and increased plasma glucose levels. Both atipamezole and yohimbine antagonized these effects. The reversal effect of atipamezole was dose-dependency, except on epinephrine. Yohimbine caused prolonged increases in plasma norepinephrine and insulin levels compared to atipamezole, possibly because of its longer half-life elimination. Only yohimbine increased the cortisol levels. Neither glucagon nor lactate levels changed significantly. Based on these findings, when medetomidine-induced sedation is antagonized in dogs, we recommend using atipamezole IM, from 2- to 6-fold the dose of medetomidine, unless otherwise indicated.

Descriptors: anesthesiology, behavior, neural coordination, pharmacology, metabolic response, neurohormonal response, surgical stress, yohimbine, imidazoles, antagonists, medetomidine, blood composition, epinephrine, norepinephrine, blood glucose, insulin, blood lipids, fatty acids.

Ando, K., A. Sugiyama, Y. Satoh, Y. Nakamura, H. Routledge, and K. Hashimoto (2004). **Prediction of drug-induced qt prolongation using halothane-anesthetized canine model: Comparison of risperidone and olanzapine.** *Journal of Pharmacological Sciences* 94 (Suppl. 1): 270P. ISSN: 1347-8613.

Descriptors: veterinary medicine, schizophrenia, HIS bundle electrocardiogram, diagnostic techniques, anesthesia, QT prolongation, drug induced.

Notes: Meeting Information: 77th Annual Meeting of the Japanese Pharmacological Society, Osaka, Japan; March 8-10, 2004.

Ando, K., A. Sugiyama, A. Takahara, Y. Satoh, and K. Hashimoto (2003). **Cardiovascular effects of γ -27632, a selective rho-associated kinase inhibitor, assessed in the halothane-anesthetized canine model.** *Journal of Pharmacological Sciences* 91

(Suppl. I): 157P. ISSN: 1347-8613.

Descriptors: cardiovascular system, transport and circulation, pharmacology, sympathetic reflex, halothane.

Notes: Meeting Information: 76th Annual Meeting of the Japanese Pharmacological Society, Fukuoka, Japan; March 24-26, 2003.

Ezzine, S. and F. Varin (2005). **Interstitial muscle concentrations of rocuronium under steady-state conditions in anaesthetized dogs: actual versus predicted values.**

British Journal of Anaesthesia 94(1): 49-56. ISSN: 0007-0912.

Abstract: Introduction. The objective of this study was to compare rocuronium effect (C_e) and peripheral (C_2) compartment concentrations predicted by pharmacokinetic-pharmacodynamic (PK-PD) modelling with those measured in plasma (C_p) and in the interstitial fluid of muscle tissue (CISF,u) by microdialysis in anaesthetized dogs. Methods. After approval by the Animal Care Committee, eight adult male dogs with a body weight ranging from 7 to 18 kg were anaesthetized with pentobarbital. Each dog received a 2-min rocuronium infusion of 0.15 mg kg⁻¹ min⁻¹ followed by a 118-min infusion of 60 µg kg⁻¹ min⁻¹ via the right jugular vein. Arteriovenous gradient across the hindlimb was measured at 40, 60, 100 and 120 min. Three microdialysis samples were collected at 40-min intervals. Once the infusion stopped, arterial samples were collected every 2 min for the first 10 min and every 20 min for the next 120 min. Neuromuscular function was monitored using train-of-four stimulation until full recovery. Dogs were then killed and a biopsy of muscle tissue was performed (C_m). Results. At steady state, the mean CISF,u value was 1353 ng ml⁻¹. After correction for the unbound fraction in plasma, the mean $C_{e,corr}$ and $C_{2,corr}$ were 1681 and 1481 ng ml⁻¹, respectively. At the terminal sampling point, C_m was 10-fold higher than C_p . Conclusion. Unbound concentration of rocuronium measured in the muscle interstitial fluid under steady-state conditions confirms that parametric PK-PD modelling gives reliable estimates of effect site concentrations. Rocuronium accumulates in muscle tissue, probably by non-specific protein binding in the interstitial space.

Descriptors: anesthesiology, pharmacology, anesthesia, microdialysis, laboratory techniques, muscle biopsy, animal care committee.

Flecknell, P. (1997). **Assessment and alleviation of post-operative pain.** *Animal Welfare Information Center Newsletter* 8(3/4): 8-14. ISSN: 1050-561X.

NAL Call Number: aHV4701.A952

Descriptors: surgery, pain, laboratory animals, animal welfare, analgesics, mice, rats, guinea pigs, rabbits, ferrets, primates, pigs, sheep, dogs, cats.

Fox, S.M., D.J. Mellor, C.R.O. Lawoko, H. Hodge, and E.C. Firth (1998). **Pain-induced distress in canine ovariohysterectomy and its alleviation with perioperative butorphanol.** *Veterinary Surgery* 27(2): 173. ISSN: 0161-3499.

NAL Call Number: SF911.V43

Descriptors: pain, ovariectomy, surgery, butorphanol.

Fujii, Y., A. Uemura, and H. Toyooka (2003). The effect of inhaled colforsin daropate on contractility of fatigued diaphragm in dogs. *Anesthesia and Analgesia* 96(4): 1032-1034. ISSN: 0003-2999.

Online: <http://www.anesthesia-analgesia.org/cgi/content/abstract/96/4/1032>

Abstract: We studied the effect of inhaled colforsin daropate, a water-soluble forskolin derivative, on the contractility of fatigued diaphragm in dogs. Animals were divided into 3 groups of 8. In each group, diaphragmatic fatigue was induced by intermittent supramaximal bilateral electrophrenic stimulation at a frequency of 20-Hz stimulation applied for 30 min. Immediately after the end of the fatigue-producing period, Group 1 received inhaled vehicle, Group 2 received inhaled colforsin daropate 0.1 mg/mL, and Group 3 received inhaled colforsin daropate 0.2 mg/mL. We assessed diaphragmatic contractility by transdiaphragmatic pressure (Pdi). After fatigue was produced, in each group, Pdi at low-frequency (20-Hz) stimulation decreased from baseline values ($P < 0.05$), and there was no change in Pdi at high-frequency (100-Hz) stimulation. In Groups 2 and 3, during colforsin daropate inhalation, Pdi at both stimuli increased from fatigued values ($P < 0.05$). The increase in Pdi was significantly larger in Group 3 than in Group 2. The integrated electrical activity of the diaphragm did not change in any group. We conclude that inhaled colforsin daropate causes an increase in contractility of fatigued canine diaphragm in a dose-related fashion.

Descriptors: muscular system, pharmacology, colforsin daropate, forskolin, fatigued diaphragm, animal models, contractility.

Fujii, Y., A. Uemura, and H. Toyooka (2003). **Midazolam-induced muscle dysfunction and its recovery in fatigued diaphragm in dogs.** *Anesthesia and Analgesia* 97(3): 755-758. ISSN: 0003-2999.

Online: <http://www.anesthesia-analgesia.org/cgi/content/abstract/97/3/755>

Abstract: Midazolam, widely used for sedation and anesthesia, decreases contractility in nonfatigued diaphragm; however, its effects on contractility in fatigued diaphragm that are implicated as a cause of respiratory failure have not been established. We therefore studied the effects of midazolam on diaphragm muscle function and recovery in fatigued diaphragm. Dogs were divided into three groups of eight each. In each group, diaphragmatic fatigue was induced by intermittent supramaximal bilateral electrophrenic stimulation at a frequency of 20-Hz stimulation for 30 min. When fatigue was established, Group I received no study drug; Group II was infused with a

sedative dose (0.1 mgcndotkg-1cndoth-1) of midazolam; and Group III was infused with an anesthetic dose (0.5 mgcndotkg-1cndoth-1) of midazolam. We assessed diaphragm muscle function (contractility and electrical activity) by transdiaphragmatic pressure (Pdi) and integrated electrical activity of the diaphragm (Edi). In the presence of fatigue, Pdi at low-frequency (20-Hz) stimulation decreased from baseline values ($P<0.05$), Pdi at high-frequency (100-Hz) stimulation did not change, and Edi to each stimulus did not change. With an infusion of midazolam, in Groups II and III, Pdi at both stimuli and Edi at 100-Hz stimulation decreased from fatigued values ($P<0.05$). The decrease in Pdi and Edi was more in Group III than in Group II ($P<0.05$). At 60 min after the cessation of midazolam administration, in Group II, Pdi and Edi recovered from midazolam-induced values ($P<0.05$) and returned to fatigued values. In Group III, Pdi and Edi did not change from midazolam-induced values. We conclude that midazolam causes, in a dose-related manner, diaphragm muscle dysfunction in fatigued canine diaphragm and that at a sedative dose, but not at an anesthetic dose, midazolam does not delay its recovery.

Descriptors: midazolam, contractility, fatigued diaphragm, analgesia, dogs, respiratory failure.

Gilberto, D.B., S.L. Motzel, A.N. Bone, C.L. Burns, A.H. Zeoli, K.E. Lodge, and T.L.

Goode (2002). **Use of three infusion pumps for postoperative administration of buprenorphine or morphine in dogs.** *Journal of the American Veterinary Medical Association* 220(11): 1655-1660. ISSN: 0003-1488.

NAL Call Number: 41.8 AM3

Abstract: The results of using infusion pump methods (implantable osmotic pump, preset disposable infusion pump and programmable infusion pump) for postoperative delivery of morphine and buprenorphine in dogs undergoing abdominal surgery are discussed. In evaluating the methods studied, it appeared that the use of the programmable infusion pump for administration of buprenorphine provided the most consistent analgesia. The use of the preset infusion pump for administration of morphine was fairly simple and provided good analgesia, and the cost was similar to that associated with epidural administration of morphine. The least successful method in this study was the use of the implantable osmotic pumps for buprenorphine administration. This method was labour intensive and invasive and only provided minimal analgesia.

Descriptors: anesthesia, anesthetics, analgesics, benzodiazepines, morphine, postoperative care, surgical instruments, surgical operations, dogs.

Gilberto, D.B., S.L. Motzel, and S.R. Das (2003). **Postoperative pain management using fentanyl patches in dogs.** *Contemporary Topics in Laboratory Animal Science* 42(4): 21-26. ISSN: 1060-0558.

NAL Call Number: SF405.5.A23

Abstract: To the ability of the fentanyl patch to control pain in a postoperative canine model, we provided two male beagles with 25-mug/h patches and two with 50-mug/h patches 24 h prior to surgery. Each animal underwent a major abdominal surgical procedure to place three separate catheters with associated vascular access ports. Serum plasma levels of fentanyl were analyzed at multiple time points throughout the study period. Animals were subjectively assessed for postoperative pain by using a Simple Descriptive Scale at regular intervals postoperatively. Other parameters observed and recorded included heart and respiration rates, rectal temperature, appetite, and activity. The fentanyl patch appeared to adequately control postoperative pain in our canine abdominal surgical model. Three animals demonstrated mild pain 1 to 2 h postoperatively. Two animals, one from each dose group, showed mild pain 8 h postoperatively. Mild pain is commensurate with USDA category C, which encompasses procedures that do not result in more than momentary or slight pain or distress and do not require intervention. At no other time points were any of the animals considered to be in pain. Our study also suggested that increased subcutaneous fat delayed the rate of absorption of fentanyl. The lower body-weight beagles, which had the 25-mug/h patches, reached reported human serum analgesic levels within 8 h after placement, whereas the heavier beagles with the 50-mug/h patches reached human serum analgesic levels 12 h after placement. Fentanyl concentrations remained at the reported human analgesic levels in all animals between 2 to 4 h after the patches were removed. Regardless of the dose, decreases in heart rate, respiration rate, and temperature were observed in all four animals 12 h after placing the patches. Issues regarding the regulatory requirements to prevent drug abuse, the side effects and potency of fentanyl, and the prolonged duration of action as a transdermal system should be addressed by the veterinarian when considering usage of this analgesic method.

Descriptors: nervous system, neural coordination, pharmacology, postoperative pain, nervous system disease, abdominal surgery, experimental surgical techniques, laboratory techniques, appetite, heart rate, rectal temperature, respiration rate.

Hansen, B.D. (2003). **Assessment of pain in dogs: veterinary clinical studies.** *ILAR Journal* 44(3): 197-205. ISSN: 1084-2020.

NAL Call Number: QL55.A1143

Abstract: Hundreds of thousands of animals are presented to US veterinarians annually for surgery or for evaluation of painful disease. This large population offers the opportunity for clinical research of both acute and chronic pain syndromes. Although there is growing interest by veterinary clinical specialists to explore the nature of animal pain and how best to treat it, this resource is relatively unknown to the pain research community. Computer-assisted collection of behavioral data has created new opportunities for characterizing the pain experience in animal species for the benefit of both animals and humans. This review describes the current state of veterinary

clinical pain studies in dogs and an application of computer-assisted behavioral analysis.

Descriptors: surgery, disease, pain, assessment, chronic, acute, surgery, behavioral parameters, behavioral analysis.

Horstman, C.L., M.G. Conzemius, R. Evans, and W.J. Gordon (2004). **Assessing the efficacy of perioperative oral carprofen after cranial cruciate surgery using noninvasive, objective pressure platform gait analysis.** *Veterinary Surgery* 33(3): 286-292. ISSN: 0161-3499.

NAL Call Number: SF911.V43

Abstract: **OBJECTIVE:** To document, using pressure platform gait analysis, the effect of perioperative oral carprofen on limb function and pain after cranial cruciate ligament surgery in dogs. **STUDY DESIGN:** Blinded, prospective clinical investigation. **ANIMALS:** Twenty dogs with naturally occurring unilateral cranial cruciate disease. **PROCEDURE:** Physiologic indices, subjective pain scoring, and pressure platform gait analyses were performed before and 24, 48, and 72 hours after surgery. Correlations were assessed between methods of evaluation and the data was compared across treatment groups. **RESULTS:** No strong correlations were noted between physiologic data, subjective scoring systems, or gait analysis data at a walk or stance. Although average measures of limb function were nearly twice as large in dogs treated with carprofen, no significant differences between groups over time were identified. No significant differences were noted in any other measure of pain or limb function. Power analysis of peak vertical force at a walk indicated that significant difference would have been detected had the number of dogs in each group been increased to 35. **CONCLUSION:** When limb function was assessed with pressure platform gait analysis no statistical difference was noted between groups with respect to PVF and VI at a walk or stance, although average ground reaction forces for dogs in the carprofen group were greater than the traditional pain management group at all time points. **CLINICAL RELEVANCE:** Oral carprofen appears to provide some benefit for the treatment of postoperative orthopedic pain.

Descriptors: unilateral cranial cruciate disease, pain scoring, pressure platform gait analysis, oral carprofen, postoperative orthopedic pain.

Hu, G., M.R. Salem, and G.J. Crystal (2002). **Isoflurane abolishes platelet-induced enhancement of superoxide production by neutrophils.** In: *2002 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 12-16, 2002, Orlando, FL, USA*, p. Abstract No. A 695.

Online: <http://www.asa-abstracts.com>

Descriptors: isoflurane, spectrum analysis techniques, neutrophil-induced cardiac dysfunction, superoxide, dogs.

Ito, H. and P.A. Murray (2003). **Effects of desflurane on endothelium-dependent vasorelaxation in pulmonary arteries.** In: *2003 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 11-15, 2003, San Francisco, CA, USA*, Vol. 99, p. Abstract No. A 1467.

Online: <http://www.asa-abstracts.com>

Descriptors: inhalation anesthetics, vasorelaxation, pulmonary circulation, in vitro study, desflurane, canine pulmonary arterial rings, cardiovascular system.

Johnson, E.E., H. Gibson, B. Nicol, J. Zanzinger, P. Widdowson, M. Hawthorn, G. Toth, J. Farkas, R. Guerrini, and D.G. Lambert (2003). **Characterization of nociceptin/orphanin fq binding sites in dog brain membranes.** *Anesthesia and Analgesia* 97(3): 741-747. ISSN: 0003-2999.

Abstract: Nociceptin/orphanin FQ (N/OFQ) is the endogenous ligand for the N/OFQ receptor (NOP), whose characteristics in the dog are unknown. We therefore compared (3H)N/OFQ binding in dog and rat brain membranes. Radioligand saturation/competition studies with these membranes and leucyl-(3H)N/OFQ(1-17)OH or the novel radioligand (3H)N/OFQ(1-13)NH₂ were performed to determine receptor density and ligand affinity. The density of classic opioid receptors was determined by using (3H)diprenorphine. Leucyl-(3H)N/OFQ(1-17)OH binding was concentration dependent and saturable in dog (maximum binding capacity (B_{max}), 28.7±2.8 fmol/mg of protein; equilibrium dissociation constant as negative log (pK_d), 10.27±0.11) and rat (B_{max}, 137.0±12.9 fmol/mg of protein; pK_d, 10.41±0.05). In comparison, the B_{max} and pK_d of (3H)diprenorphine were, respectively, 77.7±5.3 fmol/mg of protein and 9.74±0.09 in dog and 79.1±18.2 fmol/mg of protein and 9.51±0.04 in rat. In dog, (3H)N/OFQ(1-13)NH₂ binding to NOP receptors was also saturable (B_{max}, 23.7±2.0 fmol/mg of protein; pK_d, 10.16±0.12). In both species, leucyl-(3H)N/OFQ(1-17)OH was displaced by various NOP ligands. Dynorphin A, N/OFQ(1-5)NH₂, and nocistatin were essentially inactive. There was a significant positive correlation (r²=0.95; P<0.0001) between pK_i values (an estimate of affinity) obtained in displacement studies in rat and dog. We have demonstrated a low density of NOP receptors, measured with two radioligands, in dog, and these receptors display a high degree of pharmacological similarity with those natively expressed in the rat.

Descriptors: membranes, cell biology, nervous system, neural coordination, pharmaceuticals, pharmacology .

Johnson, E.E., J. McDonald, B. Nicol, R. Guerrini, and D.G. Lambert (2004). **Functional coupling of the nociceptin/orphanin fq receptor in dog brain membranes.** *Brain Research* 1003(1-2): 18-25. ISSN: 0006-8993.

Descriptors: nociceptin, orphanin FQ, dog brain, pharmacology, Chinese hamsters.

Junior, P.N., N.R. Villela, L.R. Carvalho, and A.B. Teixeira (2003). **Renal effects of dexmedetomidine. Experimental study in dogs.** In: *2003 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 11-15, 2003, San Francisco, CA, USA*, Vol. 99, p. Abstract No. A 502.

Online: <http://www.asa-abstracts.com>

Descriptors: urinary system, general anesthesia, heart rate, dexmedetomidine, alpha2-adrenergic agonist, dosages, dogs, renal hemodynamics, diuretic.

Kabara, S., K. Hirota, E. Hashiba, H. Yoshioka, and A. Matsuki (2002). **Propofol antagonizes methacholine-induced bronchoconstriction in dogs with and without vagotomy.** In: *2000 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 16-18, 2000, San Francisco, CA, USA*, p. Abstract No. 1325.

Online: <http://www.asa-abstracts.com>

Descriptors: propofol, vagal nerve blockage, muscular system, methacholine (Mch)-induced bronchoconstriction, vagotomy, experimental surgical techniques, laboratory techniques, bronchial cross sectional area, pentobarbital, mongrel dogs, relaxant effects.

Kehl, F., J.F. Ladisa, J.R. Kersten, D.C. Warltier, and P.S. Pagel (2003). **Isoflurane adversely alters active and passive left atrial function and impairs left atrial-left ventricular coupling in dogs with pacing-induced cardiomyopathy as evaluated using pressure-volume relations.** In: *2003 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 11-15, 2003, San Francisco, CA, USA*, Vol. 99, p. Abstract No. A 755.

Online: <http://www.asa-abstracts.com>

Descriptors: anesthesiology, active, passive left atrial function, adverse alterations, end systolic pressure volume relations, left atrial emptying fraction, left atrial myocardial contractility, left atrial stroke volume, left atrial stroke work, left atrial left ventricular coupling, pressure volume relations, steady state pressure volume diagram, total reservoir volume, dose related declines, pacing-induced cardiomyopathy, isoflurane.

Kehl, F., B. Mraovic, P.S. Pagel, D.C. Warltier, and J.R. Kersten (2002). **Hyperglycemia is an interactive determinant of myocardial infarct size during isoflurane-induced preconditioning.** In: *2001 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 13-17, 2001, New Orleans, LA, USA*, p. Abstract No. A 690.

Online: <http://www.asa-abstracts.com>

Descriptors: hyperglycemia, myocardial infarction, heart disease, vascular disease, ischemic preconditioning, laboratory techniques, heart rate, volatile anesthetics, cardioprotective effects, isoflurane.

Kerbaul, F., B. Rondelet, S. Motte, P. Fesler, I. Hubloue, P. Ewalenko, R. Naeije, and S. Bri-miouille (2004). **Isoflurane and desflurane impair right ventricular-pulmonary arterial coupling in dogs.** *Anesthesiology* 101(6): 1357-1362. ISSN: 0003-3022.

Abstract: Background. Halogenated anesthetics depress left ventricular function, but their effects on the right ventricle have been less well studied. Therefore, the authors studied the effects of isoflurane and desflurane on pulmonary arterial (PA) and right ventricular (RV) properties at baseline and in hypoxia. Methods: Right ventricular and PA pressures were measured by micromanometer catheters, and PA flow was measured by an ultrasonic flow probe. PA mechanics were assessed by flow-pressure relations and by impedance spectra derived from flow and pressure waves. RV contractility was assessed by end-systolic elastance (Ees), RV afterload was assessed by effective PA elastance (Ea), and RV-PA coupling efficiency was assessed by the Ees:Ea ratio. Anesthetized dogs were randomly assigned to increasing concentrations (0.5, 1, and 1.5 times the minimum alveolar concentration) of isoflurane (n = 7) or desflurane (n = 7) in hyperoxia (fraction of inspired oxygen, 0.4) and hypoxia (fraction of inspired oxygen, 0.1). Results: Isoflurane and desflurane had similar effects. During hyperoxia, both anesthetics increased PA resistance and characteristic impedance, increased Ea (isoflurane, from 0.82 to 1.44 mmHg/ml; desflurane, from 0.86 to 1.47 mmHg/ml), decreased Ees (isoflurane, from 1.09 to 0.66 mmHg/ml; desflurane, from 1.10 to 0.72 mmHg/ml), and decreased Ees:Ea (isoflurane, from 1.48 to 0.52; desflurane, from 1.52 to 0.54) in a dose-dependent manner (all P < 0.05). Hypoxia increased PA resistance, did not affect characteristic impedance, increased afterload, and increased contractility. During hypoxia, isoflurane and desflurane had similar ventricular effects as during hyperoxia. Conclusions: Isoflurane and desflurane markedly impair RV-PA coupling efficiency in dogs, during hyperoxia and hypoxia, both by increasing RV afterload and by decreasing RV contractility.

Descriptors: anesthesiology, blood pressure measurement, laboratory techniques, hyperoxia, hypoxia.

Kroin, J.S., R.J. McCarthy, R.D. Penn, T.J. Lubenow, and A.D. Ivankovich (2003). **Continuous intrathecal clonidine and tizanidine in conscious dogs: analgesic and hemodynamic effects.** *Anesthesia and Analgesia* 96(3): 776-782. ISSN: 0003-2999.

Abstract: Alpha-2-adrenergic agonists, such as clonidine, produce antinociception in animal pain models after intrathecal administration. However, clinical usage is limited by cardiovascular side effects. To investigate alternative alpha2-adrenergic agonists as analgesics, we implanted six dogs with an intrathecal catheter and infusion pump. After baseline saline infusion, animals received clonidine or tizanidine (crossover study) each week at escalating doses of 125-750 µg/h. Analgesia, blood pressure, heart rate, respiratory rate, sedation, and coordination were evaluated. A 28-day safety study was performed with another nine dogs receiving intrathecal tizanidine (3 or 6 mg/d) or saline. Equal doses of clonidine and tizanidine produce the

same antinociception in thermal withdrawal tests. Blood pressure was reduced with 125-500 µg/h of clonidine, but not with tizanidine at any dose. Clonidine 250 µg/h reduced heart rate by 45.8%, and five of six animals had bradyarrhythmias (marked bradycardia), whereas tizanidine decreased heart rate by 15.1% without arrhythmias, even at the largest dose. Respiratory rate decreased with 250 µg/h of clonidine and larger doses. Sedation or incoordination occurred only at the largest dose for either drug. The safety study indicated that 3 mg/d of tizanidine in dogs produced no side effects or histopathologic changes. Tizanidine may be a useful alternative in patients experiencing cardiovascular side effects with intrathecal infusion of clonidine

Descriptors: cardiovascular system, transport and circulation, nervous system, neural coordination, pharmacology, hemodynamics.

Kyles, A.E., E.M. Hardie, B.D. Hansen, and M.G. Papich (1998). **Comparison of transdermal fentanyl and intramuscular oxymorphone on post-operative behaviour after ovariohysterectomy in dogs.** *Research in Veterinary Science* 65(3): 245-251. ISSN: 0034-5288.

NAL Call Number: 41.8 R312

Abstract: The effects of transdermal fentanyl and IM oxymorphone on behavioural and physiological responses, after ovariohysterectomy in dogs, were investigated. The study involved three groups of 10 dogs: fentanyl/surgery (FS), oxymorphone/surgery (OS), fentanyl/control (FC). A transdermal fentanyl delivery system (50 micrograms hour⁻¹) (FS and FC) was applied 20 hours before surgery, or IM oxymorphone (OS) was administered. After ovariohysterectomy (FS and OS) or anaesthesia alone (FC), dogs were continuously videotaped for 24 hours and a standardised hourly interaction with a handler performed. The videotapes were analysed, and interactive and non-interactive behaviours evaluated. In addition, pain and sedation scores, pulse and respiratory rates, rectal temperature, arterial blood pressure, plasma cortisol and plasma fentanyl concentrations were measured. This study showed that transdermal fentanyl and IM oxymorphone (0.05 mg kg⁻¹) produced comparable analgesic effects over a 24 hour recording period. IM oxymorphone produced significantly more sedation and lower rectal temperatures than transdermal fentanyl. There were no significant differences between groups in respiratory and heart rates, and arterial blood pressures.

Descriptors: bitches, fentanyl, transdermal application, ovariectomy, hysterectomy, analgesics, intramuscular injection, pain, drug effects, efficacy, animal behavior, body temperature, hydrocortisone.

Machon, R. (1999). **The recovery period care for cats and dogs recovering from general anaesthesia.** *Veterinary Continuing Education* 190: 211-216. ISSN: 0112-9643.

Descriptors: anesthesia, recovery, cats, dogs.

Maekawa, T., S. Cho, S. Takahashi, S. Tomiyasu, and K. Sumikawa (2003). **The effects of propofol on contractility and oxygen balance in normal and acute ischemic myocardium.** In: *2003 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 11-15, 2003, San Francisco, CA, USA*, Vol. 99, p. Abstract No. A 689.

Online: <http://www.asa-abstracts.com>

Descriptors: acute heart failure, heart disease, myocardial ischemia, vascular disease, Scheffe's f test, analysis of variance for repeated measures, coronary microembolization model, experimental surgical techniques, laboratory techniques, lactate extraction ratio, myocardial contractility, oxygen balance, segment shortening, systemic, regional coronary hemodynamics, propofol, mongrel dogs.

Manisterski, Y., Z. Vaknin, R. Ben Abraham, O. Efrati, D. Lotan, M. Berkovitch, A. Barak, Z. Barzilay, and G. Paret (2002). **Endotracheal epinephrine: A call for larger doses.** *Anesthesia and Analgesia* 95(4): 1037-1041. ISSN: 0003-2999.

Abstract: Endotracheal administration of epinephrine 0.02 mg/kg (twice the IV dose) is recommended when IV access is unavailable during cardiopulmonary resuscitation. The standard IV dose has been considered too small for the endotracheal route by causing a detrimental decrease of arterial blood pressure (BP), presumably mediated by the beta-adrenergic receptor unopposed by alpha adrenergic vasoconstriction. We conducted a prospective, randomized, laboratory comparison of increasing doses of endotracheal epinephrine to ascertain the yet undetermined optimal dose of endotracheal epinephrine that would increase BP. After injecting normal saline (control), saline-diluted epinephrine (0.02, 0.035, 0.1, 0.2, and 0.3 mg/kg) was injected into the endotracheal tube of five anesthetized dogs at least 1 wk apart. Arterial blood samples for blood gases were collected before and at 14 time points up to 60 min after the drug administration. Heart rate and arterial BP were continuously monitored with a polygraph recorder. Only the 0.3 mg/kg dose successfully caused an increase in BP, observed 2 min after administration, and lasting for 10 min. An early decrease in BP was obviated only at a dose equivalent to 10-fold the currently recommended one. **IMPLICATIONS:** We conducted a prospective, randomized, laboratory comparison of increasing doses of endotracheal epinephrine to ascertain the yet undetermined optimal dose of endotracheal epinephrine that would increase arterial blood pressure (BP). A decrease in BP was obviated only at a dose equivalent to 10-fold the currently recommended one. Clinical studies using larger doses of endotracheal epinephrine and their use as first-line therapy in cardiac arrest are warranted.

Descriptors: animal model, endotracheal administration, cardiopulmonary resuscitation, arterial blood pressure, clinical studies, cardiac arrest, endotracheal epinephrine, blood samples, blood gases.

Mizumoto, K. and P.A. Murray (2002). **Halothane and desflurane potentiate alpha adrenoreceptor-mediated pulmonary artery contraction: role of the endothelium and vascular smooth muscle.** In: *2002 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 12-16, 2002, Orlando, FL, USA*, p. Abstract No. A 1298.

Online: <http://www.asa-abstracts.com>

Descriptors: inhalational anesthetics, halothane, desflurane, pulmonary vasoconstrictor response, cellular mechanisms, in vitro study, endothelium, pulmonary vascular smooth muscle, alpha adrenoreceptor activation cardiovascular system, vasorelaxant response.

Mizumoto, K. and P.A. Murray (2003). **Desflurane potentiates alpha adrenoreceptor-mediated pulmonary artery contraction: involvement of PKC, Rho kinase and tyrosine kinases.** In: *2003 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers Annual Meeting, October 11-15, 2003, San Francisco, CA, USA*, Vol. 99, p. Abstract No. A 1523.

Online: <http://www.asa-abstracts.com>

Descriptors: desflurane (DES), arterial smooth muscle, cardiovascular system, alpha adrenoreceptor-mediated contraction, canine, myofilament, pharmacology.

Murray, P.A. and X. Ding (2003). **Ketamine attenuates acetylcholine-induced contraction in pulmonary veins.** In: *2003 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers Annual Meeting, October 11-15, 2003, San Francisco, CA, USA*, Vol. 99, p. Abstract No. A 1468.

Online: <http://www.asa-abstracts.com>

Descriptors: anesthetic agents, pulmonary venous tone, ketamine, acetylcholine (Ach), cardiovascular system, vasoconstrictor cyclooxygenase metabolites, isolated canine pulmonary venous rings.

Murrell, J.C., H.N.M. De Groot, A.J. Venker Van Haagen, W.E. Van Den Brom, and L.J. Hellebrekers (2004). **Middle-latency auditory-evoked potential in acepromazine-sedated dogs.** *Journal of Veterinary Internal Medicine* 18(2): 196-200. ISSN: 0891-6640.

NAL Call Number: SF601.J65

Abstract: The middle-latency auditory-evoked potential (MLAEP) has been investigated as means of monitoring anesthesia in dogs. The goals of this study were to develop a technique to record MLAEPs in awake dogs and to determine the effects of sedation. The MLAEP was recorded in 12 dogs with and without sedation with acepromazine. Three needle electrodes were inserted SC. Click stimuli were delivered biaurally. Signal acquisition, averaging, and analysis were performed by software developed in-house. Signals were recorded for 128 milliseconds, and the responses to 1,024 stimuli were averaged. The waveforms from 10 recordings were

averaged, and the amplitudes and latencies of peaks that could be consistently identified were measured. Data measured were compared by means of a paired 2-sided Student's t-test. Interpretable MLAEPs were recorded in 10 of the 12 dogs. Three peaks were consistently identified (Pa, Nb, and Pb). The latencies of these peaks were significantly ($P=.032$, $.035$, and $.028$, respectively) shorter in awake (mean \pm -SD milliseconds) (Pa=18.85 \pm -1.36, Nb=30.50 \pm -3.55, and Pb=47.70 \pm -5.53) than in sedated (Pa=22.40 \pm -3.88, Nb=35.75 \pm -6.77, and Pb=55.30 \pm -10.55) dogs. The Pb amplitude was not significantly different (2.51 \pm -1.30 μ V awake and 2.19 \pm -1.10 μ V sedated). This study demonstrates that acepromazine sedation causes changes in MLAEP.

Descriptors: pharmacology, veterinary medicine, anesthesia monitoring, laboratory techniques, middle latency auditory evoked potential recording, laboratory techniques, middle latency auditory evoked potential.

Stucke, A.G., E.A.E. Stuth, V. Tonkovic Capin, J.P. Kampine, and E.J. Zuperku (2003).

Sevoflurane depresses overall excitatory drive but not the postsynaptic glutamate receptor response to medullary inspiratory neurons in a decerebrate dog model.

FASEB Journal 17(4-5): Abstract No. 302.2. ISSN: 0892-6638.

Online: <http://www.fasebj.org/>

NAL Call Number: QH301.F3

Descriptors: decerebrate vagotomy, experimental surgical techniques, multibarrel micropipette, neuronal discharge frequency, overall excitatory drive, overall glutamatergic excitation, postsynaptic glutamate receptor response.

Notes: Meeting Information: FASEB Meeting on Experimental Biology: Translating the Genome, San Diego, CA, USA; April 11-15, 2003.

Takahashi, S., Y. Fujii, T. Hoshi, A. Uemura, M. Miyabe, and H. Toyooka (2003).

Milrinone attenuates the negative inotropic effects of landiolol in halothane-anesthetized dogs. *Canadian Journal of Anesthesia* 50(8): 830-834. ISSN:

0832-610X.

Abstract: Background: Clinical use of high dose beta-blocker therapy is limited by excessive negative inotropic effects. Previous studies suggest that milrinone may be of utility in limiting the inotropic but not the chronotropic effects of beta blockers. We examined the hemodynamic effects of co-administration of a new potent selective beta1 blocker, landiolol, and milrinone in halothane-anesthetized dogs. Methods: Eighteen adult mongrel dogs were anesthetized with 1.2 MAC halothane. Hemodynamic measurements were made at baseline, 30 min after starting the milrinone (0.5 μ g \cdot kg $^{-1}$ \cdot min $^{-1}$) or normal saline infusion (n=9 in each), then 30 min after each change in the dose of landiolol infusion. The tested doses of landiolol were 10, 100, and 1000 μ g \cdot kg $^{-1}$ \cdot min $^{-1}$. Results: Landiolol (gtoreq=10 μ g \cdot kg $^{-1}$ \cdot min $^{-1}$) has significant and comparable negative chronotropic

effects in both groups of dogs. While it also has significant negative inotropic effects in both groups, such effects are significantly attenuated in the dogs treated with milrinone. Conclusion: Milrinone is effective to attenuate the negative inotropic effects of landiolol in halothane-anesthetized dogs.

Descriptors: high dose beta-blocker therapy, milrinone, hemodynamic effects, halothane anesthesia.

Tanaka, H. and P.A. Murray (2002). **Propofol attenuates alpha adrenoreceptor mediated contraction in pulmonary veins.** In: *2002 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 12-16, 2002, Orlando, FL, USA*, p. Abstract No. A 1300.

Online: <http://www.asa-abstracts.com>

Descriptors: propofol, pulmonary arteries, pulmonary venous tone, anesthetics, alpha adrenoreceptor activation, myofilament, isolated canine pulmonary venous rings.

Tanaka, H. and P.A. Murray (2002). **Propofol inhibits Ca^{2+} influx but increases myofilament Ca^{2+} sensitivity during muscarinic receptor activation in pulmonary veins.** In: *2002 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 12-16, 2002, Orlando, FL, USA*, p. Abstract No. A 1299.

Online: <http://www.asa-abstracts.com>

Descriptors: pulmonary edema, endothelium dependent relaxation, pulmonary capillary pressure, transcapillary fluid flux, acetylcholine(ACh), pulmonary venous tone, anesthetic agents, propofol, myofilament Ca^{2+} sensitivity.

Tanaka, M. and T. Nishikawa (2003). **Hemodilution does not alter arterial baroreflex control of heart rate in anesthetized dogs.** *Anesthesia and Analgesia* 96(1): 28-32. ISSN: 0003-2999.

Abstract: The cardiovascular effects of acute normovolemic hemodilution (ANH) are characterized by increased cardiac output and decreased systemic vascular resistance. However, whether arterial baroreflex function is altered by ANH remains undetermined. We assigned 23 anesthetized, mechanically ventilated dogs to mild ANH (hemoglobin, 7-8 g/dL; n=11) or profound ANH (hemoglobin, 4-5 g/dL; n=12) achieved by phlebotomy and simultaneous exchange with lactated Ringer's solution at 1:3 ratio to maintain constant central venous pressure and pulmonary artery occluded pressure. Baroreflex sensitivity was assessed by measurements of RR intervals of the electrocardiogram and mean arterial blood pressure (MAP) through a femoral artery catheter. Baroreflex responses were triggered by bolus IV injections of phenylephrine (25-75 μ g) and nitroprusside (50-100 μ g). The linear portion of the baroreflex curves relating RR intervals and MAP were used to determine baroreflex sensitivities. Compared with the predilution period, both ANH groups had significant increases in cardiac output and decreases in systemic vascular resis-

tance ($P < 0.01$), whereas MAP and heart rate (HR) remained unchanged. However, no significant difference was detected between pre-ANH and post-ANH baroreflex sensitivities in either group. Our results indicate that arterial baroreflex control of HR is preserved during ANH to a hemoglobin concentration of 4-5 g/dL in anesthetized dogs.

Descriptors: cardiovascular system, transport and circulation, rr interval, acute normovolemic hemodilution, arterial baroreflex control, cardiac output, heart rate, mean arterial blood pressure, systemic vascular resistance.

Tanimoto, H., H. Ao, A. Yoshitake, Y. Sakanashi, and H. Terasaki (2002). **Extracorporeal lung assist does not increase body weight.** In: *2001 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 13-17, 2001, New Orleans, LA, USA*, p. Abstract No. A 361.

Online: <http://www.asa-abstracts.com>

Descriptors: extracorporeal lung assist (ECLA), veterinary medicine, neonatal respiratory distress, arterial blood gas analysis, heparin bonded artificial lung, right femoral artery cannulation, roller pump, urinary catheter, arterial blood pressure, body weight, dogs.

Tsubo, T., H. Okawa, K. Hirota, H. Ishihara, and A. Matsuki (2002). **Elimination of ketamine and midazolam from the lungs during pulmonary lavage in dogs.** In: *2001 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 13-17, 2001, New Orleans, LA, USA*, p. Abstract No. A 370.

Online: <http://www.asa-abstracts.com>

Descriptors: respiration, veterinary medicine, alveolar proteinosis, bronchial asthma, cystic fibrosis, double lumen tracheal tube, gas mass spectrography, laboratory techniques, spectrum analysis techniques, pulmonary lavage, single lung ventilation, tracheal intubation, ketamine, midazolam.

Vaisanen, M., M. Raekallio, E. Kuusela, P. Huttunen, J. Leppaluoto, P. Kirves, and O. Vainio (2002). **Evaluation of the perioperative stress response in dogs administered medetomidine or acepromazine as part of the preanesthetic medication.** *American Journal of Veterinary Research* 63(7): 969-975. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: Objective: To compare the perioperative stress response in dogs administered medetomidine or acepromazine as part of the preanaesthetic medication. Animals: 42 client-owned dogs that underwent elective ovariohysterectomy. Procedure: Each dog was randomly allocated to receive medetomidine (Domitor) and butorphanol tartrate (Torbugesic vet; 20 $\mu\text{g}/\text{kg}$ and 0.2 mg/kg, respectively, IM) or acepromazine maleate (Plegisil vet) and butorphanol (0.05 and 0.2 mg/kg, respectively, IM) for preanaesthetic medication. Approximately 80 min later, anaesthesia was induced by administration of propofol and maintained by use of isoflurane

in oxygen. Each dog was also given carprofen before surgery and buprenorphine after surgery. Plasma concentrations of epinephrine, norepinephrine, cortisol, and beta-endorphin were measured at various stages during the perioperative period. In addition, cardiovascular and clinical variables were monitored. Results: Concentrations of epinephrine, norepinephrine, and cortisol were significantly lower for dogs administered medetomidine. Concentrations of beta-endorphin did not differ between the 2 groups. Heart rate was significantly lower and mean arterial blood pressure significantly higher in dogs administered medetomidine, compared with values for dogs administered acepromazine. Conclusions and Clinical Relevance: Results indicate that for preanaesthetic medications, medetomidine may offer some advantages over acepromazine with respect to the ability to decrease perioperative concentrations of stress-related hormones. In particular, the ability to provide stable plasma catecholamine concentrations may help to attenuate perioperative activation of the sympathetic nervous system.

Descriptors: acepromazine, anesthesia, anesthetics, blood pressure, butorphanol, endorphins, epinephrine, heart rate, hydrocortisone, isoflurane, medetomidine, neuroleptics, norepinephrine, propofol, stress, surgical operations.

Wu, W.N., L.A. Mckown, and J.R. Carson (2003). **In vitro biotransformation of the analgesic agent, RWJ-51784, in rat, dog and human.** *European Journal of Drug Metabolism and Pharmacokinetics* 28(2): 107-111. ISSN: 0378-7966.

Abstract: RWJ-51784, an analogue of phenyl isoindoles, is a new analgesic agent. The in vitro metabolism of RWJ-51784 was conducted using rat, dog and human hepatic S9 in the presence of an NADPH generating system, and API-ionspray-MS and MS/MS techniques for the metabolite profiling and identification. Unchanged RWJ-51784 (82, 80 & 86% of the sample in rat, dog & human, respectively) plus 6 metabolites were profiled and tentatively identified on the basis of MS data. RWJ-51784 metabolites were formed via the following 3 metabolic pathways: 1. N-demethylation, 2. phenylhydroxylation, and 3. isoindole-oxidation. Pathway 1 produced a moderate or minor metabolite, N-desmethyl-RWJ-51784 (M1; 6% in rat; 5% in dog, 2% in human). Pathway 2 formed 4-hydroxyphenyl-RWJ-51784 (M2; 3-6% in all species). Step 3 formed 2 isoindole-oxidized metabolites, OH-indole (M3; 7-8% in all species) and oxoindole (M4; <1% in all species)-RWJ-51784, and in conjunction with pathway 2 produced 2 trace metabolites, OH-phenyl-OH-isoindole (M5) and OH-phenyl-oxo-isoindole (M6) metabolites. RWJ-51784 is not extensively metabolized in rat, dog and human hepatic S9 fractions.

Descriptors: metabolism, pharmacology, hepatic s9 fraction, culturing techniques, laboratory techniques. Sentinel pigeons, *Columba livia*, were installed in lard-can traps at heights of 1.5 m and 7.6-9.1 m within differing canopy cover classes in New York City. Adult mosquitoes were collected weekly from July to October

2002, as were serum samples from each pigeon. *Culex pipiens L.* and *Culex restuans Theobald* comprised 97% of mosquitoes collected and were most numerous in canopy-level, forested traps. The West Nile virus (family Flaviviridae, genus Flavivirus, WNV) seroconversion rate was significantly greater for pigeons in canopy-level traps, although seroconversions occurred concurrently with human cases in the city and were of little prognostic value to public health agencies. Our results indicate that sentinel pigeons were most effective for monitoring enzootic transmission of WNV when placed in single-sentinel caging 7.6-9.1 m above ground level.

Descriptors: bird diseases, insect vectors, sentinel surveillance, West Nile fever, New York City, polymerase chain reaction methods, species specificity, trees.

Gibbs, S.E., N.L. Marlenee, J. Romines, D. Kavanaugh, J.L. Corn, and D.E. Stallknecht (2006). **Antibodies to West Nile virus in feral swine from Florida, Georgia, and Texas, USA.** *Vector Borne and Zoonotic Diseases* 6(3): 261-265. ISSN: 1530-3667.

Abstract: West Nile virus (WNV) exposure has not yet been reported in feral swine (*Sus scrofa*) despite the broad geographic range and population density of this species. The objectives of this study were to determine the prevalence of antibodies to WNV in feral pigs, and to evaluate serologic diagnostics as applied to this species. Feral pig serum from three states was evaluated for antibodies to WNV. The overall WNV seroprevalence rate for 222 samples collected in 2001-2004 was 22.5%. Seroprevalence rates in Florida, Georgia, and Texas were 17.2%, 26.3%, and 20.5%, respectively. The results of this study demonstrate that feral pigs could represent useful mammalian sentinels of WNV.

Descriptors: West Nile virus, animal sentinels, feral swine, pig serum antibodies, seroprevalence rate, serologic diagnostics.

Gibbs, S., A. Ellis, D. Mead, A. Allison, J. Moulton, E. Howerth, and D. Stallknecht (2005). **West Nile virus detection in the organs of naturally infected blue jays (*Cyanocitta cristata*).** *Journal of Wildlife Diseases*. 41(2): 354-362. ISSN: 0090-3558.

Descriptors: wild birds, sentinel animals, disease detection, immunohistochemistry, reverse transcriptase polymerase chain reaction, Georgia, blue jays, West Nile virus.

Godsey, M.J., M. Blackmore, N. Panella, K. Burkhalter, K. Gottfried, L. Halsey, R. Rutledge, S. Langevin, R. Gates, and K. Lamonte (2005). **West Nile virus epizootiology in the southeastern United States, 2001.** *Vector Borne and Zoonotic Diseases*. 5(1): 82-89. ISSN: 1530-3667.

Descriptors: West Nile virus, virus transmission, insect vectors, *Culex*, *Culiseta melanura*, mosquitoes, disease reservoirs, birds, disease detection, antibody detection, seroprevalence, chickens, sentinel animals, Southeastern United States, Florida, Georgia.

Lefrancois, T., B.J. Blitvich, J. Pradel, S. Molia, N. Vachier, and D. Martinez (2006). **West Nile virus in guadeloupe: introduction, spread, and decrease in circulation level: 2002-2005.** *Annals of the New York Academy of Sciences* 1081: 206-215. ISSN: 0077-8923.

Abstract: In July 2002, a surveillance system was implemented on Guadeloupe to detect for the potential introduction and monitor the spread of West Nile virus (WNV). From 2002 to 2004, equines and chickens were serologically assayed for antibodies to WNV by IgG and IgM enzyme-linked immunosorbent assay (ELISA), epitope-blocking ELISA, and plaque reduction neutralization tests. After introduction, probably through migratory birds at the end of 2001, many seroconversions occurred between July and October 2002 resulting in a high seroprevalence (19.3%) in equines in 2003. WNV circulation levels decreased dramatically in 2003 and 2004 as assessed by the absence of seroconversion in equine and the very low prevalence in chickens. This decrease coincided with a 7-month drought that presumably caused a decrease in vector populations. In 2005, a sentinel survey was implemented in equines and chickens placed in areas at high risk and the very low rate of seroconversion (1 equine out of 106, no chicken) demonstrated that WNV circulation is now occurring at a very low level.

Descriptors: West Nile virus, equines, chickens, antibodies, serological assay, ELISA, birds, vector populations.

Shaman, J., J. Day, and M. Stieglitz (2005). **Drought-induced amplification and epidemic transmission of West Nile virus in southern Florida.** *Journal of Medical Entomology*. 42(2): 134-141. ISSN: 0022-2585.

Abstract: We show that the spatial-temporal variability of human West Nile (WN) cases and the transmission of West Nile virus (WNV) to sentinel chickens are associated with the spatial-temporal variability of drought and wetting in southern Florida. Land surface wetness conditions at 52 sites in 31 counties in southern Florida for 2001-2003 were simulated and compared with the occurrence of human WN cases and the transmission of WNV to sentinel chickens within these counties. Both WNV transmission to sentinel chickens and the occurrence of human WN cases were associated with drought 2-6 mo prior and land surface wetting 0.5-1.5 mo prior. These dynamics are similar to the amplification and transmission patterns found in southern Florida for the closely related St. Louis encephalitis virus. Drought brings avian hosts and vector mosquitoes into close contact and facilitates the epizootic cycling and amplification of the arboviruses within these populations. Southern Florida has not recorded a severe, widespread drought since the introduction of WNV into the state in 2001. Our results indicate that widespread drought in the spring followed by wetting during summer greatly increase the probability of a WNV epidemic in southern Florida.

Descriptors: West Nile virus, virus transmission, drought, disease outbreaks, senti-

nel animals, chickens, humans, spatial variation, temporal variation, insect vectors, *Culex nigripalpus*, Culicidae, simulation models, Florida, virus-amplification, land-surface-wetting, hydrology-models.

Behavior

Adams, K.M., A.M. Navarro, E.K. Hutchinson, and J.L. Weed (2004). **A canine socialization and training program at the National Institutes of Health.** *Lab Animal* 33(1): 32-36. ISSN: 0093-7355.

Online: 14752529

NAL Call Number: QL55.A1L33

Abstract: Well-socialized and obedient dogs are easier to handle and may make better research models. The authors describe the program they have implemented at the NIH, which has benefited both the animals and their caretakers.

Descriptors: environmental enrichment program, positive reinforcement training, canine, social interaction, obedience training, stress, caretaker involvement.

Anderson, G., S. Marinier, D.S. Mills, S.E. Heath, and L.J. Harrington (1997). **The effect of food and restricted exercise on behaviour problems in dogs.** In: *Proceedings of the First International Conference on Veterinary Behavioural Medicine*, April 1-2, 1997, Birmingham, UK, p. 183-186.

Descriptors: diets, dietary protein, exercise, behavior.

Anonymous (2003). **Symposium on brain and behavior studies in dogs, Warsaw, Poland, July, 16, 2003.** *Acta Neurobiologiae Experimentalis* 63(3): 293-294. ISSN: 0065-1400.

Abstract: This meeting on brain and behavior studies in dogs consists of abstracts written in English for seven presentations. Selected topics include Pavlovian instrumental reactions, perirhinal cortex, agonistic behavior among shepherds, auditory recognition, and human scent identification in police dogs.

Descriptors: behavior, nervous system, neural coordination, pavlovian reactions, agonistic behavior, auditory recognition, human scent identification.

Notes: Meeting Information: Symposium on Brain and Behavior Studies in Dogs, Warsaw, Poland; July 16, 2003.

Appleby, D. (1999). **The importance of early canine development [on behaviour].** *Veterinary Times* 29(10): 10. ISSN: 0379-6213.

Descriptors: postnatal development, animal behavior, behavior, perception, senses, young animals, puppies, stimuli, social behavior, dogs.

Appleby, D.L., J.W.S. Bradshaw, and R.A. Casey (2002). **Relationship between aggressive and avoidance behaviour by dogs and their experience in the first six months of life.** *Veterinary Record* 150(14): 434-438. ISSN: 0042-4900.

NAL Call Number: 41.8 V641

Abstract: The early experiences of dogs showing signs of avoidance behaviour or aggression were compared with those of dogs from the same clinical population that did not show such behaviour. The occurrence of each behavioural sign was tested for its association with the dog's maternal environment, the environment it experienced between three and six months of age, and the age at which it had been acquired. Non-domestic maternal environments, and a lack of experience of urban environments between three and six months of age, were both significantly associated with aggression towards unfamiliar people and avoidance behaviour. Aggression during a veterinary examination was more likely in dogs from non-domestic maternal environments. There was no significant association with either environment for aggression towards familiar people, or towards dogs.

Descriptors: aggressive behavior, animal behavior, environment, dogs .

Asa, C.S. (1997). **Hormonal and experiential factors in the expression of social and parental behavior in canids.** In: N.G. Solomon and J.A. French (Editors), *Cooperative Breeding in Mammals*, Cambridge University Press: Cambridge, England; New York, NY, p. 129-149. ISBN: 0521454913.

NAL Call Number: QL739.3.C665 1997

Descriptors: behavior, biosynchronization, behavioral ecology, endocrine system, reproduction, hormones, ovulatory cycle, parental behavior, paternal care, reproductive suppression, seasonal reproduction, social behavior, social systems, canids.

Notes: Meeting Information: Symposium on Cooperative Breeding in Mammals held at the 1992 Animal Behavior Society Meetings, Kingston, Ontario, Canada; 1992.

Askew, H.R. (2003). *Behandlung Von Verhaltensproblemen Bei Hund Und Katze: Ein Leitfaden Fur Die Tierarztliche Praxis. [Treatment of Behaviour Problems in Dogs and Cats. A Guide for Veterinary Practice]*, 2nd edition, Parey Buchverlag: Berlin; Germany, 412 p.

Abstract: This is a German translation (by K. Thorstensen) of the 2nd edition of a book originally published in the USA. It is a guide to the diagnosis and treatment of behaviour problems in dogs and cats, and is based on experiences gained over 30 years in the USA. The first section (pp. 1-64) covers the pet behaviour consultation, and contains 6 chapters: introduction, the pet in the family, classification of behaviour problems, the consultation, treatment of behaviour problems, establishment of a practice. The second section covers the dog and is the longest section (pp. 65-321). The chapter headings are: general aspects, fundamentals of treatment, drug therapy (written in association with K. Kohlke), introduction to aggression problems, dominance aggression against family members, defensive aggression against family members, defensive aggression against unknown men, other forms of aggres-

sion against men, aggression against other dogs, anger problems, separation anger, inappropriate excretion, further behaviour problems. The section on the cat (pp. 323-395) deals with urine marking of territory, inappropriate urination and defaecation, anger and aggression problems, and further problems. The extra chapter in this edition on drug therapy of behaviour problems covers indications for treatment, side effects and appropriate dosages. The emphasis throughout the book is on differential diagnosis, possible causes and the most effective means of control. Each chapter has a bibliography of references, and the book concludes with a short subject index.

Descriptors: abnormal behavior, aggression, animal behavior, defaecation, diagnosis, excretion, small animal practice, therapy, urination, cats, dogs, German translation.

Language of Text: German.

Askew, H.R. (2002). *Treatment Behaviour for Problems in Dogs & Cats: A Guide for the Small Animal Veterinarian*. 2nd edition, Blackwell Science: Oxford, UK, 400 p. ISBN: 1405106204.

NAL Call Number: SF433 .A85 2002

Descriptors: dogs, cats, behavior therapy, problem behavior.

Bayne, K. (2002). **Development of the human-research animal bond and its impact on animal well-being.** *ILAR Journal* 43(1): 4-9. ISSN: 1084-2020.

NAL Call Number: QL55.A1I43

Abstract: For millennia, relationships have developed between animals and people through the context of work, sport, companionship, or some combination of these activities. Often, a bond between animal and human results, which is based on affection and/or respect. In the research environment, it is not uncommon for a bond to develop between the investigator, veterinarian, and/or animal care technicians and the animals with which they work; and such a bond can be just as strong for a mouse as it is for a dog. Circumstances that foster the formation of these bonds include the close and frequent contact between the researchers and their animals during studies or during training of animals to particular tasks, the long periods of time many research animals live in the facilities (often years), the dependency of the animals on the animal care staff for their daily needs, and the veterinarian/patient relationship, which is not unlike that of private practitioners and client-owned animals. In addition, overlaying the fundamental relationship with the research animal are special bonds that can form with certain animals. Among those that engender a special attachment are animals that are particularly friendly, amusing, or intelligent; animals requiring extra supportive care; animals that show courage; animals that represent a milestone in a particular scientific advancement; and animals that reflect humans' own strengths and foibles. The development of these relationships is enriching to both personnel and animals inasmuch as people who care about their animals are committed to promoting and ensuring the well-being of those animals.

Descriptors: human-animal bond, laboratory animals, animal well-being, relationships between animal care staff, researchers, and other animals.

Bayne, K., B. Beaver, J. Mench and D. Morton (2002). **Laboratory animal behavior.** In: J. Fox, L. Anderson, F. Loew and F. Quimby (Editors), *Laboratory Animal Medicine*, 2nd edition, Academic Press: London, UK, p. 1240-1264. ISBN: 0122639510.

NAL Call Number: SF996.5 .L33 2002

Descriptors: behavior, animal experiments, animal welfare , laboratory animals.

Beaver, B.V. (1999). *Canine Behavior: A Guide for Veterinarians*, W.B. Saunders Co. Philadelphia, PA, 355 p. ISBN: 0721659659.

NAL Call Number: SF433.B4-1999

Abstract: This book is a companion to “Feline behaviour: a guide for veterinarians” by the same author (1992).

Descriptors: dog behavior, sensory communication, social behavior, sexual behavior, eliminative behavior, grooming behavior, literature review.

Beaver, B.V. and L.I. Haug (2003). **Canine behaviors associated with hypothyroidism.** *Journal of the American Animal Hospital Association* 39(5): 431-434. ISSN: 0587-2871.

NAL Call Number: SF601.A5

Descriptors: abnormal behavior, aggression, clinical aspects, diagnosis, hypothyroidism, therapy, dogs.

Beerda, B., M.B.H. Schilder, J.A.R.A.M. van Hooff, and H.W. de Vries (1997). **Manifestations of chronic and acute stress in dogs.** *Applied Animal Behaviour Science* 52(3/4): 307-319. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Descriptors: dogs, stress, behavior patterns, immunology, animal physiology, animal welfare, animal well being.

Notes: Special Issue: Behavioural problems of small animals. Includes references.

Beerda, B., M.B.H. Schilder, J.A.R.A.M. van Hooff, H.W. de Vries, and J.A. Mol (2000). **Behavioural and hormonal indicators of enduring environmental stress in dogs.** *Animal Welfare* 9(1): 49-62. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Abstract: Selected behavioural and hormonal parameters were compared in a group of privately owned dogs with relatively low chronic stress (group 1) with 3 groups of dogs (groups 2, 3 and 4) that were kept under conditions of low to relatively high austerity, and had basal urinary ratios of cortisol to creatinine, adrenaline to creatinine and, to a lesser extent, noradrenaline to creatinine, that varied from low to high,

respectively. Significant differences were found in cortisol to creatinine ratios when comparing group 1 to groups 2, 3 and 4 and when group 2 was compared to group 4. The mean adrenaline to creatinine ratio in GI differed from that in the remaining groups and the ratio in group 2 differed from that in group 3. Noradrenaline to creatinine ratios differed significantly only between group 1 and group 3. Dopamine to creatinine ratios and noradrenaline to adrenaline ratios did not differ significantly between groups. When dogs were not disturbed, those that were kept under the most austere conditions typically had high levels of locomotor activity, nosing, urinating and paw lifting. After mild disturbance by a slamming door or in the presence of a researcher these animals reacted actively, with increased locomotor activity, circling and nosing, and they showed high levels of behaviours that have previously been associated with acute stress: body shaking, yawning, ambivalent postures and displacement behaviours. Chronic stress in dogs may be identified by increased paw lifting when animals are not disturbed and by ample behavioural expressions of arousal when they are mildly stimulated. Since some behaviours may occur in contexts not related to stress, behavioural data are easily misinterpreted with regard to chronic stress. Interpretation will only be meaningful when physiological measures such as urinary adrenaline to creatinine ratios and, especially, urinary cortisol to creatinine ratios are also determined.

Descriptors: stress, epinephrine, hydrocortisone, creatinine, dopamine, animal housing, norepinephrine, animal behavior, abnormal behavior, animal welfare, hormones.

Beerda, B., M.B.H. Schilder, J.A.R.A.M. van Hooff, H.W. deVries, and J.A. Mol (1999).

Chronic stress in dogs subjected to social and spatial restriction. I. Behavioral responses. *Physiology and Behavior* 66(2): 233-242. ISSN: 0031-9384.

NAL Call Number: QP1.P4

Abstract: 15 Beagles, housed in groups or individually, were subjected to a variety of challenges and their behaviours recorded. The different behaviours under group and individual housing, during challenges, under different weather conditions and differences between bitches and males dogs are presented in tables. The results are discussed in relation to chronic stress.

Descriptors: stress, animal behavior, animal welfare, animal housing, weather, bitches, male animals, animal experiments, group size, dogs.

Beerda, B., M.B.H. Schilder, W. Bernadina, J.A.R.A.M. van Hooff, H.W. de Vries, and J.A. Mol (1999). **Chronic stress in dogs subjected to social and spatial restriction. II. Hormonal and immunological responses.** *Physiology and Behavior* 66(2): 243-254. ISSN: 0031-9384.

NAL Call Number: QP1.P4

Descriptors: group housing, chronic stress, social restriction, spatial restriction,

beagle dogs, individual housing, salivary and urinary cortisol measurements, animal welfare.

Beerda, B., M.B.H. Schilder, J.A.R.A.M. van Hooff, H.W. de Vries, and J.A. Mol (1998). **Behavioural, saliva cortisol and heart rate responses to different types of stimuli in dogs.** *Applied Animal Behaviour Science* 58(3-4): 365-381. ISSN: 0168-1591.
NAL Call Number: QL750.A6

Abstract: Stress parameters that can be measured noninvasively may help to identify poor welfare in dogs that live in private homes and institutions. Behavioural parameters are potentially useful to identify stress, but require further investigation to establish which behaviours are appropriate. In the present study, behaviours were recorded and analysed for signs of acute stress in dogs. Simultaneously, saliva cortisol and heart rate were measured to support the interpretation of the behavioural data with regard to stress. Ten dogs of either sex, different ages and various breeds were each subjected to six different stimuli: sound blasts, short electric shocks, a falling bag, an opening umbrella and two forms of restraint. Each type of stimulus had been selected for its assumed aversive properties and was administered intermittently for 1 min. The stimuli that could not be anticipated by the dogs, sound blasts, shocks and a falling bag, tended to induce saliva cortisol responses and a very low posture. The remainder of the stimuli, which were administered by the experimenter visibly to the dog, did not change the cortisol levels but did induce restlessness, a moderate lowering of the posture, body shaking, oral behaviours, and to a lesser extent, yawning and open mouth. Pronounced increases in the heart rate were nonspecifically induced by each type of stimulus. Heart rate levels normalized within 8 min after stressor administration had stopped. Saliva cortisol levels decreased to normal within the hour. Correlations between behavioural and physiological stress parameters were not significant. From the present results, we conclude that in dogs a very low posture may indicate intense acute stress since dogs show a very low posture concomitant with saliva cortisol responses. Dogs may typically show increased restlessness, oral behaviours, yawning, open mouth and a moderate lowering of the posture when they experienced moderate stress in a social setting. The nonspecific character of canine heart rate responses complicates its interpretation with regard to acute stress.

Descriptors: behavior, philosophy and ethics, animal welfare, body shaking, heart rate response, oral behavior, posture, restlessness, stress.

Bernauer Munz, H. (1999). **Prophylaxe in der Tierverhaltenstherapie - Machbares in der alltäglichen Praxis bei Hund und Katze. [Prevention of behavioural disorders in dogs and cats - what can be achieved in daily practice.]** . *Praktische Tierarzt* 80(7): 572-583. ISSN: 0032-681X.

NAL Call Number: 41.8 P882

Abstract: It was relatively easy to prepare printed advice for breeders and owners of

dogs and cats on steps to be taken to avoid the development of undesirable behaviour in pups and kittens. Examples are provided.

Descriptors: feasibility studies, therapy, small animal practice, behavior, abnormal behavior, prevention, dogs, cats.

Language of Text: German, Summary in English.

Braastad, B.O. and M. Bakken (2002). **Behaviour of dogs and cats.** In: P. Jensen (Editor), *The Ethology of Domestic Animals: An Introductory Text*, CABI Publishing: New York, NY, p. 173-192. ISBN: 08519960.

NAL Call Number: SF756.7 .E838 2002

Descriptors: behavior, behavioral problem, aggression, animal welfare, development, domestication, ethology, mating behavior, parental behavior, play, predatory behavior, social behavior, communication between animals.

Christiansen, F.O., M. Bakken, and B.O. Braastad (2001). **Behavioural changes and aversive conditioning in hunting dogs by the second-year confrontation with domestic sheep.** *Applied Animal Behaviour Science* 72(2): 131-143. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Domesticated dogs occasionally exhibit predatory behaviour towards domestic sheep when running loose in pasture. Both young and old dogs of either sex may chase sheep. Electronic dog collars applying electric shocks are utilized as one method of training dogs to refrain from attacking sheep. This device is used for a number of other training purposes which have raised concern for the welfare of the dogs being trained. This study aims at testing long-term learning effects of previous sheep tests on sheep chasing in hunting dog breeds (Norwegian elkhounds (grey), English setters and hare hunting dogs), in particular with use of electronic dog collars, in addition to uncovering potential secondary negative effects on dogs' behaviour and mental stability (Norway, June-August 1997). The dogs (n=114) were subjected to 3 tests for 2 subsequent years, the second year being reported here. Dogs were tested for reactions to different stimuli, including a sheep, in a path test. In a sheep confrontation test, dogs were fenced in with a sheep group and given electric shocks when approaching 1-2 m from sheep. A questionnaire to the dog owners reported differences in dogs' behaviour between the years. Dogs showed weaker or delayed behavioural responses in both tests in the second year. No dogs showed interest in or attacked a lone sheep in the path test in the second year, while almost two thirds of them did so the first year. In the sheep confrontation test, the dogs exhibited comparatively hesitant initial hunting motivation the second year, being more evident in dogs which received electric shocks the first year. No dogs chased or attacked sheep as their first response in this test, while half of them did so the first year. The proportion of dogs attacking sheep during the entire test was reduced to almost one fourth.

The number of electric shocks administered reduced by the second year, and only one of the dogs that received electric shocks the first year received electric shocks the second year. The owners reported no negative effect on the dogs' behaviour during the year ensuing electric shock treatment. 18 of the 24 dogs reported by owners to exhibit behavioural changes lost their previous interest in sheep. The second-year tests indicate that aversive conditioning with the use of electronic dog collar may be an efficient method for reducing the probability of a dog chasing or attacking grazing sheep. No adverse effects were observed with our test procedure.

Descriptors: behavior, animal welfare, hunting dogs, predation, shock waves, hunting dogs, learning, training of animals, shock collars, motivation, temporal variation, adverse effects, chasing behavior, aversion learning, surveys, dogs, sheep.

Christiansen, F.O., M. Bakken, and B.O. Braastad (2001). **Behavioural differences between three breed groups of hunting dogs confronted with domestic sheep.** *Applied Animal Behaviour Science* 72(2): 115-129. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: When running free in open fields, domestic dogs occasionally display predatory behaviour towards domestic sheep. This has not yet been studied scientifically. The aim of the present study was to investigate the inclination to chase sheep in three breed groups of hunting dogs that are most frequently used in areas with grazing sheep. We studied 41 elkhounds, 29 hare hunting dogs and 68 English setters. Behaviours indicative of motivation for chasing or attacking sheep were examined in three different ways. A path test examined functional traits such as hunting ability, contact willingness, reactivity to sudden noise, and response towards a lone sheep. In a sheep confrontation test, loose-leashed dogs were observed in a fenced enclosure with sheep and given electric shocks through an electronic dog collar if within 1-2 m from the sheep. A questionnaire to the dog owners supplied information on their dog's previous experience with sheep and behavioural responses to various types of novel stimuli. No significant sex differences were found. The elkhounds showed the highest interest in a lone sheep in the path test, and displayed the highest initial hunting motivation, the highest percentage of dogs starting a sheep attack, the highest attack severity, and were most frequently given el. shocks. The hare hunting dogs were intermediate, while setters showed the lowest values for these variables. Dogs reported as showing low fearfulness more frequently acted as potential sheep chasers in the tests. Dogs up to 3 years of age showed a more pronounced initial hunting motivation and more frequent attacks than older dogs, although there were no age differences in the number of el. shocks given in the test. The latter may be related to the more frequent abruption of attacks among younger dogs. The main factors predicting a high hunting motivation and attack severity were lack of previous opportunity to chase sheep, low fearfulness towards gunshots and unfamiliar people, and general interest in sheep shown when encountering them. Probability of sheep

chasing differed between dog breeds and age groups. Previous experience and certain character traits were indicative of a high predatory motivation towards sheep.

Descriptors: hunting dogs, predation, behavior, hounds, dog breeds, breed differences, sex differences, age differences, sheep chasing behavior, Norwegian Elkhound, English Setter, hare hunting, path test, behavioral method, contact willingness, hunting ability, reactivity, sheep predation.

Coppola, C.L., T. Grandin, and R.M. Enns (2006). **Human interaction and cortisol: can human contact reduce stress for shelter dogs?** *Physiology and Behavior* 87(3): 537-541. ISSN: 0031-9384.

NAL Call Number: QP1.P4

Abstract: Animal shelters are an extremely stressful environment for a dog, most specifically due to social isolation and novel surroundings. The stress response of dogs housed in this environment may be alleviated through human interaction shortly after arrival. During their second day in a public animal shelter, adult stray dogs were either engaged in a human contact session or not. The session involved taking the dog into an outdoor enclosure, playing with the dog, grooming, petting and reviewing basic obedience commands. Each dog interacted with a human for approximately 45 min. Salivary cortisol levels were examined from each dog on their 2nd, 3rd, 4th and 9th day of housing. Animals that engaged in a human contact session had lower cortisol levels on day 3 than animals that did not. Breed type, sex and age did not have an effect on cortisol levels on any day measured. A human interaction session can be beneficial to both animal welfare and adoption procedures. The current study not only utilized the human contact session as a treatment to reduce stress but also as a resource for individual temperament/personality information that could be later used to facilitate compatible adoptions. Human interaction may be an effective means of reducing the cortisol response of dogs in the aversive shelter environment.

Descriptors: human-pet bonding, hydrocortisone metabolism, psychological stress, stress, dogs, saliva.

de Palma, C., E. Viggiano, E. Barillari, R. Palme, A.B. Dufour, C. Fantini, and E. Natoli (2005). **Evaluating the temperament in shelter dogs.** *Behaviour* 142(9/10): 1307-1328. ISSN: 0005-7959.

NAL Call Number: 410 B393

Abstract: Seventy-four healthy mixed-breed dogs were studied collecting behavioural data by means of 'focal animal sampling' and 'all occurrences' methods; the ethogram utilised consisted of more than 100 behavioural patterns. All dogs were taken outside the shelter for a walk to analyse their reaction to a novel environment. In addition, three faecal samples were collected from each dog on three consecutive days during daily routine, to measure the levels of cortisol metabolites (CM) to evaluate adrenocortical activity. A Principal Component Analysis (PCA) identified

five primary factors: 'subordination/aggressiveness', 'intraspecific dominance-activity', 'anxiety-sociability towards dogs', 'playfulness' and 'sociability towards humans'. Dogs that showed a confident -independent temperament in a familiar context (within the shelter), showed fear in novel situations (outside the shelter). Despite the absence of a proper control we hypothesise that the stress levels were low both behaviourally and physiologically: neither stereotypies nor inactivity and lack of interest in the surrounding environment was observed, and the median CM concentration was moderately low. Lower concentrations of faecal CM were recorded in dogs with a temperament 'sociable to human beings' which were also associated with a longer stay in the shelter..

Descriptors: animal behavior, novel environment, ethogram, temperament, aggression, anxiety, playfulness, feces, hydrocortisone, shelters.

Dumenko, V.N. and M.K. Kozlov (2004). **Electrographic correlates of "inner states" caused by positive conditioned stimuli in the course of instrumental conditioning in dogs.** *Zhurnal Vysshei Nervnoi Deyatel'Nosti Imeni I. P. Pavlova.* 54(3): 352-362. ISSN: 0044-4677.

Abstract: Energy characteristics (power spectra) of short-term (less than 1 s) EEG-reactions were studied in dogs in the course of instrumental conditioning. These reactions were observed in different areas of the cortex during selective attention in response to positive conditioned stimuli. They immediately preceded strong blow with a paw on the pedal of feeding cup and taking the reward. The EEG power at these moments was 1.5-3 times higher than the baseline EEG power level in a prestimulus period. The high-frequency structure of corresponding EEG reactions comprised discrete individual spectral peaks both in traditional (1-30 Hz) and gamma (30-80 Hz) ranges and higher-frequency components (80-200 Hz) as well. In some cases, the higher-frequency components (80-200 Hz) were most pronounced.

Descriptors: animal care, behavior, neural coordination, electroencephalography, eeg, diagnostic techniques, gamma frequency, inner state, positive conditioned stimulus, power spectrum, selective attention.

Language of Text: Russian.

Fox, S.M., D.J. Mellor, C.R.O. Lawoko, H. Hodge, and E.C. Firth (1998). **Effects of different combinations of halothane, butorphanol, and ovariohysterectomy on behavior in the dog.** *Veterinary Surgery* 27(2): 174 . ISSN: 0161-3499.

NAL Call Number: SF911.V43

Descriptors: halothane, ovariectomy, anesthesia, animal behavior, pain, drug combinations, dogs.

Graham, L., D.L. Wells, and P.G. Hepper (2005). **The influence of olfactory stimulation on the behaviour of dogs housed in a rescue shelter.** *Applied Animal Behaviour Science* 91(1-2): 143-153.

Online: <http://dx.doi.org/10.1016/j.applanim.2004.08.024>

NAL Call Number: QL750.A6

Descriptors: odors, lavender, chamomile, relaxation, animal behavior, physical activity, vocalization, animal welfare, essential oils, animal shelter, dogs.

Gramm, U. (1999). *Beitrag zur fruhen VVerhaltensontogenese der Hunderasse: Fila Brasileiro. [Contribution to the early behavioural ontogeny of the dog breed Fila Brasileiro.]*. Dissertation, Tierarztliche Hochschule Hannover: Hannover, Germany. 233 p.

NAL Call Number: DISS F1999117

Descriptors: thesis, breed, Fila Brasileiro, ontogeny, genetics, behavior, early development.

Language of Text: German; Summary in English.

Heath, S. (2003). **Behavioural problems in the older dog.** *European Journal of Companion Animal Practice* 13(2): 246-250. ISSN: 1018-2357.

NAL Call Number: SF981.E8

Descriptors: aging, animal behavior, brain, brain diseases, drug therapy, pets, therapeutic diets, therapy, dogs.

Herzog, H. (1997). **Human clothing and dog behavior: an unproven hypothesis.** *Anthrozoos* 10(3-4): 82-83.

NAL Call Number: SF411.A57

Descriptors: animal behavior, clothing, experimental design, color, dogs, human.

Hessling, T. (1999). **Ein Praxisbericht: Korrekturerziehung verhaltensauffalliger Hunde. [Training and advice on the correction of abnormal aggressive behaviour in dogs.]**. *Deutsche Tierarztliche Wochenschrift* 106(4): 155-156. ISSN: 0341-6593.

NAL Call Number: 41.8 B45

Descriptors: training of animals, aggressive behavior, abnormal behavior, aggression, animal behavior, dogs.

Language of Text: German, Summary in English.

Hewson, C.J., U.A. Luescher, J.M. Parent, and R.O. Ball (2000). **Effect of clomipramine on monoamine metabolites in the cerebrospinal fluid of behaviorally normal dogs.** *Canadian Journal of Veterinary Research* 64(2): 123-129. ISSN: 0830-9000.

NAL Call Number: SF601.C24

Abstract: The tricyclic antidepressant, clomipramine, is an effective treatment for canine compulsive disorder (canine CD). This disorder is a clinical syndrome of abnormal conflict behaviors and its pathophysiology is unknown. However, because clomipramine is an effective treatment, information about the drug's neurochemical effect could enhance the understanding of canine CD. The following experiment

used 6 behaviorally normal dogs to assess the effect of clomipramine (3 mg/kg, q24h, PO) on the central turnover of 3 monoamines (serotonin, dopamine, and norepinephrine) as measured by the concentrations of their respective metabolites in cerebrospinal fluid (CSF). In a randomized, placebo-controlled, AB-BA crossover experiment, cisternal CSF was taken after 1, 2, 4, and 6 wk on each treatment. No effect of clomipramine was detected. This contrasts with human studies that have suggested that clomipramine affects the concentrations of monoamine metabolites in lumbar CSF. However, those papers do not address methodological assumptions, such as (i) metabolites in CSF originate only from the brain, and (ii) concentrations of metabolites in cisternal/lumbar CSF reflect the concentrations in local areas of the brain. Notwithstanding the small sample size, our results suggest that more localized sampling techniques (e.g. microdialysis) are needed when examining the effect of drugs on central monoamine metabolites. Clomipramine's efficacy for canine CD indicates the need for neurobiological research and, to our knowledge, our study is the first of its kind in dogs. The resulting data are preliminary but they can inform optimal neurobiological studies of canine CD.

Descriptors: veterinary medicine, metabolism, nervous system, neural coordination, pharmacology, canine compulsive disorder, behavioral and mental disorders, neurobiological studies.

Higgins, M.A., B.R. Berridge, B.J. Mills, A.E. Schultze, H. Gao, G.H. Searfoss, T.K. Baker, and T.P. Ryan (2003). **Identification of biomarkers and mechanisms of the acute phase response in liver using a canine microarray.** *Toxicological Sciences* 72(S-1): 339. ISSN: 1096-6080.

NAL Call Number: RA1190.F8

Descriptors: affymetrix based oligonucleotide microarray, canine microarray, acute inflammatory response, acute phase response mechanisms, biomarker identification, biotransformation, gene expression data, toxicity mechanisms, liver.

Notes: Meeting Information: 42nd Annual Meeting of the Society of Toxicology, Salt Lake City, Utah, USA; March 9-13, 2003.

Hoffmann, U., H. Hamann, and O. Distl (2003). **Genetische Analyse von Merkmalen der Leistungsprüfung für Koppelgebrauchshunde 2. Mitteilung: Unerwünschte Verhaltensmerkmale. [Genetic analysis of traits of the working test for herding dogs 2nd communication: undesired behaviour traits.]** *Berliner Und Münchener Tierärztliche Wochenschrift* 116(3/4): 90-95. ISSN: 0005-9366.

NAL Call Number: 41.8 B45

Abstract: The objective of the present study was to analyse the occurrence of undesirable behaviour traits registered during sheep dog trials in order to evaluate the importance of genetic and environmental sources of variation and to draw conclusions for breeding purposes. The data analysed consisted of 2745 test results recorded

at 48 sheep dog trials carried out in Germany from 1994 to 1998, which were attended by 337 sheep dogs. Variance components of undesirable behaviour traits were estimated applying Restricted Maximum Likelihood methods. Additive genetic effects, permanent environmental effects of the animal and the effect of the handler were treated as random factors. Additionally, the linear multivariate animal model included the fixed effects of the age of the dogs at the sheep dog trial, sex, the level of difficulty of the exercises as well as the event itself, the starting number of the dog, the number of the dogs' tests at the particular event and the number of dogs presented on sheep dog trials by their handlers. The inbreeding coefficient was regarded as a linear covariate. The analyses were performed using all sheep dog trial classes and for each of the three classes separately. Age of the dog and starting number did not explain a significant proportion of variance for traits analysed, whereas the event of the sheep dog trial and partly the number of dogs per handler were of significant importance. The estimated heritabilities for the undesirable behaviour traits ranged from $h^2 \leq 0.001$ to $h^2 = 0.07$ with standard errors in the range between 0.001 and 0.06. The possibilities to select against undesired behaviour traits appear to be rather limited given the heritability estimates and the low number of progeny.

Descriptors: breed, sheep dogs, animal behavior, animal breeding, genetic analysis, genetic effects, heritability, inbreeding, traits.

Language of Text: German, Summary in English.

Hoffmann, W.A. and J.S.J. Odendaal (2001). **The effect of behavioral therapy on dog phobia response patterns.** *Anthrozoos* 14(1): 29-37. ISSN: 0892-7936.

NAL Call Number: SF411.A57

Descriptors: dogs, fearfulness, behavior modification, psychotherapy, South Africa.

Horwitz, D.F. (1998). **Puppy behavior: problem puppies and early training.** *Proceedings of the North American Veterinary Conference* 12: 44-46 .

NAL Call Number: SF605.N672

Descriptors: animal behavior, behavior problems, training of animals.

Notes: Meeting Information: Meeting held on January 10-14, 1998, Orlando, Florida.

Horwitz, D.F. (2001). **Dealing with common behavior problems in senior dogs.** *Veterinary Medicine* 96(11): 869-878. ISSN: 8750-7943.

NAL Call Number: 41.8 M69

Descriptors: dogs, behavior problems, old age, diagnosis, treatment, age differences, aggressive behavior, excretion, anxiety, vocalization, mental disorders.

Horwitz, D., D.S. Mills and S. Heath (2002). **BSAVA Manual of Canine and Feline Behavioural Medicine.**, British Small Animal Veterinary Association: Quedgeley, Gloucester, 288 p. ISBN: 0905214595.

NAL Call Number: SF433 .B79 2002

Descriptors: dogs, cats, behavior, behavior therapy.

Houpt, K.A. (1997). **Sexual behavior problems in dogs and cats.** *Veterinary Clinics of North America Small Animal Practice* 27(3): 601-615. ISSN: 0195-5616.

NAL Call Number: SF601.V523

Descriptors: behavior, bitch, male, queen, sexual behavior problems, tom, treatment.

Houpt, K.A. and S. Zicker (2003). **Dietary effects on canine and feline behavior.** *Veterinary Clinics of North America Small Animal Practice* 33(2): 405-416. ISSN: 0195-5616 .

NAL Call Number: SF601.V523

Descriptors: behavior, nutrition, veterinary medicine, malnutrition, nutritional disease, obesity, aggression, diet, behavioral effects, diet fat content, dietary fiber, energy balance.

Hsu, Y.Y. and J.A. Serpell (2003). **Development and validation of a questionnaire for measuring behavior and temperament traits in pet dogs.** *Journal of the American Veterinary Medical Association* 223(9): 1293-1300. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: Objective: To develop and validate a questionnaire to assess behavior and temperament traits of pet dogs. Design: Cross-sectional survey of dog owners. Animals: 1,851 dogs belonging to clients of a veterinary teaching hospital or members of national breed clubs and 203 dogs examined by canine behavior practitioners because of behavior problems. Procedure: Owners were asked to complete a questionnaire consisting of 152 items eliciting information on how dogs responded to specific events and situations in their usual environment. Data from completed questionnaires were subjected to factor analysis, and the resulting factors were tested for reliability and validity. Results: Factor analysis yielded 11 factors from 68 of the original questionnaire items that together accounted for 57% of the common variance in questionnaire item scores. Reliability was acceptable for all but 1 of these factors. Behavior problems in 200 of the 203 dogs with behavior problems could be assigned to 7 diagnostic categories that matched 7 of the factors identified during factor analysis of questionnaire responses. Dogs assigned to particular diagnostic categories had significantly higher scores for corresponding questionnaire factors than did those assigned to unrelated diagnostic categories, indicating that the factors were valid. Validity of the remaining 4 factors could not be examined because of a lack of information on dogs with behavior problems related to these factors. Conclusions and Clinical Relevance: Findings suggest that the resulting 68-item questionnaire is a reliable and valid method of assessing behavior and temperament traits in dogs. The questionnaire may be useful in screening dogs for behavior problems and in evaluat-

ing the clinical effects of various treatments for behavior problems.

Descriptors: abnormal behavior, aggression, animal behavior, data collection, questionnaires, surveys, temperament.

Hubrecht, R.C. and V. Reinhardt (2002). **Comfortable quarters for dogs in research institutions**. In: V. Reinhardt and A. Reinhardt (Editors), *Comfortable Quarters for Laboratory Animals*, 9th edition, Animal Welfare Institute: Washington, DC, p. 56-64.

Online: <http://www.awionline.org/pubs/cq02/Cq-dogs.html>

NAL Call Number: SF406.3 .C66 2002

Descriptors: laboratory housing, design, space allowance, socialization requirements, exercise, enrichment devices, handling, stress.

Hunthausen, W. (1997). **Effects of aggressive behavior on canine welfare**. *Journal of the American Veterinary Medical Association*. 210(8): 1134-1136. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Descriptors: aggressive behavior, training of animals, animal welfare, bites, aggression, dogs.

Hvozdk, A. (1997). **Etologicke a psychologické vzťahy medzi clovekom a psom. [Behavioural and psychological relationships between people and dogs.]**. *Slovenský Veterinársky Casopis* 22(6): 317-320.

Descriptors: behavior, human animal bond, psychology, pet dogs.

Language of Text: Slovakian, Summary in English.

Hvozdk, A., J. Kottferova, and J.S. Alberto (2003). **Etologicke aspekty agresivneho spravaania sa u psov. [Ethological aspects of aggressive behaviour in dogs.]**. *Slovenský Veterinársky Casopis* 28(1): 41-43. ISSN: 1335-0099.

Descriptors: aggressive behavior, dogs, urban areas, causes of aggressive neuroses, breed differences.

Language of Text: Slovakian; Summary in English.

Ikeda Douglas, C.J., H. Murphey, B. Muggenburg, E. Head, C.W. Cotman, S.C. Zicker, and N.W. Milgram (2002). **Long term maintenance of an antioxidant enriched food plus behavioral enrichment markedly delays age related cognitive decline in beagle dogs**. In: *Society for Neuroscience Abstract Viewer and Itinerary Planner: 32nd Annual Meeting of the Society for Neuroscience, November 2-7, 2002, Orlando, FL*, p. Abstract No. 374.5. [CD-Rom]

Online: <http://sfn.scholarone.com>

Descriptors: aging, behavior, nutrition, behavioral enrichment, laboratory techniques, age related cognitive decline, discrimination learning, food control environment, reversal learning.

Ishikawa, K., Y. Eguchi, K. Uetake, and T. Tanaka (2001). **Domestic dog's behaviour in confrontation with wild boar: utilization of dogs as aversive stimulus to wild boar.** *Animal Science Journal* 72(10): J594-J604. ISSN: 1344-3941.

NAL Call Number: SF1 .A542

Abstract: We conducted confrontation tests with domestic dogs and wild boars in order to determine whether the dogs have an ability to repel wild boars. Five adult dogs and six wild boars were used. One dog was a female German shepherd used by the police. The others were mongrel companion dogs and were made up of three males and one female. The wild boars, three males and three females, about 16 months old were reared for at least 10 months before the experiment. The confrontation tests were carried out three times a day at 0800-0900 h, 1200-1300 h, and 1600-1700 h. Each dog confronted all wild boars within two days. During the confrontation test period, the dogs expressed significantly greater attention ($P < 0.01$) and bark ($P < 0.05$) to the wild boar than before the confrontation. Moreover, individual differences ($P < 0.01$) were found in the frequency of the dog's barks. While just three seconds before the boar was frightened away, dogs more frequently barked ($P < 0.01$) and turned their gaze ($P < 0.05$) toward the boar than in other observation periods. This indicates that a dog's bark and gaze were aversive stimuli for wild boars. The tendency of barking is well known to widely vary among different breeds and individuals so it is recommended that suitable dogs are selected for repelling wild boars.

Descriptors: behavior, wildlife management, conservation, aversive stimuli, barking, confrontation behavior, gaze.

Language of Text: Japanese.

Jacobs, C., T. De Keuster, and P. Simoens (2003). **Assessing the pathological extent of aggressive behaviour in dogs. A review of the literature.** *Veterinary Quarterly* 25(2): 53-60. ISSN: 0165-2176.

NAL Call Number: SF601.V46

Abstract: In this review the variety of parameters used for evaluating the pathological extent of aggressive behaviour is summarised and the practical usefulness of each parameter is discussed. The selected parameters are: the objective analytic description of the aggressive behaviour, the function of the aggression, the presence of the three phases of a normal aggression sequence, the number of bites per attack, the duration of the attack and the frequency of the aggressive behaviour. Other criteria such as the appropriateness of the aggression in relation to the context, the predictability of the aggression and the severity of the caused injury are biased because of the variation caused by numerous external factors. The relevance of the most suitable parameters will be assessed in a further study in which the distribution of aggression modulating neurotransmitter receptors will be determined.

Descriptors: behavioral pathology, aggressive behavior, functional analysis, neurotransmitter receptors, external factors, dogs.

- Jewell, D.E. (2003). **Einfluss der Fütterung auf altersbedingte Verhaltensänderungen beim Hund.** [Effects of food on age-related behavioural changes in dogs.]. *Praktische Tierarzt* 84(3): 178-182. ISSN: 0032-681X.
NAL Call Number: 41.8 P882
Abstract: A clinical trial, including 142 dogs aged 7 years or older, was performed in order to investigate whether age-related behavioural changes could be influenced by feeding a special diet. The trial was designed as a randomized double blind study. The control interval was 60 days. Age-related behavioural changes were categorized by the DISHA-system and evaluated with the help of a standardized informant-based questionnaire completed by pet owners. The dogs fed the special diet showed significant improvements in behavioural attributes as compared to the control dogs receiving a leading consumer brand.
Descriptors: age, animal behavior, behavioral changes, diets, dog feeding.
Language of Text: German, Summary in English.
- Jochle, W. (1998). **Fehlverhalten und Anpassungsprobleme bei Hund und Katze und deren pharmakologische Beeinflussbarkeit.** [Undesirable behaviour and adaptation problems in dogs and cats and their control by psychotropic drugs.]. *Tierärztliche Praxis* 26(6): 410-421.
NAL Call Number: SF603.V433
Descriptors: reviews, neurotropic drugs, antidepressants, abnormal behavior, control, animal behavior, psychotropic drugs, cats, dogs.
Language of Text: German, Summary in English.
- Juhr, N.C. (2001). **Die fruehkastration von hunden aus der sicht der verhaltenskunde.** [Early castration of dogs from the point of view of behavior.]. *Tierärztliche Umschau* 56(4): 199-200. ISSN: 0049-3864.
NAL Call Number: 41.8 T445
Descriptors: animal behavior, castration, sterilization method, behavioral problems, urine marking, dogs.
Language of Text: German.
- Kaleta, T. (2003). **Kszaltowanie sie psa: udomowienie i zachowanie sie.** [The making of dog: domestication and behaviour.]. *Zycie Weterynaryjne* 78(10): 567-570. ISSN: 0137-6810.
NAL Call Number: SF604.Z9
Descriptors: ancestry, animal behavior, domestication, stray animals, dogs, wolves.
Language of Text: Polish, Summary in English.
- Karsai, F. (1997). **Nehany fontosabb magatartasproblema kutyakban az allatorvos szemzogeboel. Kivonatos ismertetes a praxis szamara.** [Some important behavioural disorders of dogs from the veterinary point of view. Selected from the German

literature.] *Magyar Allatorvosok Lapja* 119(3): 163-169.

NAL Call Number: 41.8 V644

Descriptors: dog diseases, abnormal behavior.

Language of Text: Hungarian.

Kieffer, J.P. (2002). **L'agressivite des chiens, aspects comportementaux, cadre réglementaire et législatif. [Canine aggression, behavioural aspects, regulations and legislation.]** *Bulletin De La Societe Veterinaire Pratique De France* 86(2): 114-118. ISSN: 0395-7500.

Descriptors: aggression, aggressive behavior, bites, legislation, dogs.

Language of Text: French.

Kikuzaki, T., K. Suzuki, and T. Ajito (1999). **Abnormal behaviour in a dog with brain metastasis of adenocarcinoma.** *Journal of the Japan Veterinary Medical Association* 52(1): 23-26. ISSN: 0446-6454.

NAL Call Number: 41.9 J275

Descriptors: neoplasms, adenocarcinoma, brain, metastasis, brain diseases, histopathology, abnormal behavior.

Language of Text: Japanese, Summary in English.

Kirton, A., E. Wirrell, and L. Hamiwka (2003). **Seizure alerting and response behaviors in dogs living with epileptic children.** *Annals of Neurology* 54(Suppl. 7): S133. ISSN: 0364-5134.

Descriptors: epilepsy, seizures, quality of life, dogs, companion animal.

Notes: Meeting Information: 32nd Annual Meeting of the Child Neurology Society, Miami Beach, FL, USA; October 1-4, 2003.

Kobelt, A.J., P.H. Hemsworth, J.L. Barnett, and G.J. Coleman (2003). **A survey of dog ownership in suburban Australia: conditions and behaviour problems.** *Applied Animal Behaviour Science* 82(2): 137-148. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: There has been an increasing emphasis in Australia on confining dogs to owner's properties (household backyards) as a solution to problems of dog aggression. Therefore, there is a need to determine the social and physical conditions that make up the dog's backyard environment and how these factors may affect dog behaviour and welfare. The aim of this study was to provide an overview of the conditions provided to dogs in suburban Melbourne (Australia) and any behavioural problems associated with these conditions. A survey of 203 dog owners across suburban Melbourne was conducted. The questionnaire consisted of questions relating to demographics, the dogs' routine and confinement and what behaviours the owners observed in their dogs. The relationship between some of the environmental factors and the occurrence of problem behaviour was then examined. The main behaviour

problems reported by owners were overexcitement (63%) and jumping up on people (56%). Some of the factors that were correlated with the occurrence of problem behaviours included how well the dog obeyed commands ($P < 0.01$), whether the owner had owned a dog before ($P < 0.01$) and how much time was spent with the dog ($P < 0.01$). Dogs that had obedience training were more likely to obey commands than those that did not ($P < 0.01$) and large dogs were more likely to receive training than small dogs ($P < 0.01$). These findings provide an interesting insight into some of the factors that may be related to the occurrence of behaviour problems in dogs.

Descriptors: animal care, behavior, behavior problems, dog ownership survey, environmental conditions, physical, social, suburban areas.

Koda, N. (2001). **Inappropriate behavior of potential guide dogs for the blind and coping behavior of human raisers.** *Applied Animal Behaviour Science* 72(1): 79-87. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Inappropriate behaviour of potential guide dogs (puppies; n=11) for the blind and coping behaviour of their adult female raisers (puppy walkers: PWs) were videotaped in their play situation at home from when the puppies were 2-11 or 12 months of age. The frequency of inappropriate behaviour decreased with an increase in the puppies' age, suggesting that human-dog relationships became friendlier. The PWs tended to use moderate coping behaviour to stop the inappropriate behaviour of the puppies. Rejecting interaction with the puppies was effective for stopping the puppies from biting the PWs. Forcible stopping was effective for stopping the puppies from damaging objects. Not responding to the puppies was effective for stopping the puppies from biting the PWs, barking/growling and damaging objects.

Descriptors: abnormal behavior, age, aggressive behavior, bites, guide dogs, puppies, training of animals, dogs.

Kogan, L., J.C.Jr. New, P.H. Kass, and J.M. Scarlett (2000). **Behavioral reasons for relinquishment of dogs and cats to 12 shelters.** *Journal of Applied Animal Welfare Science* 3(2): 93-106. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Descriptors: dogs, cats, animal behavior, aggressive behavior, fearfulness, vocalization, interviews, shelters, bites, defecation, behavior problems, animal welfare, USA.

Kubinyi, E., A. Miklosi, F. Kaplan, M. Gacsi, J. Topal, and V. Csanyi (2004). **Social behaviour of dogs encountering aibo, an animal-like robot in a neutral and in a feeding situation.** *Behavioural Processes* 65(3): 231-239. ISSN: 0376-6357.

NAL Call Number: QL750.B4

Abstract: The use of animal-like autonomous robots might offer new possibilities in the study of animal interactions, if the subject recognises it as a social partner. In this

paper we investigate whether AIBO, a dog-like robot of the Sony Corp. can be used for this purpose. Twenty-four adult and sixteen 4-5 months old pet dogs were tested in two situations where subjects encountered one of four different test-partners: (1) a remote controlled car; (2) an AIBO robot; (3) AIBO with a puppy-scented furry cover; and (4) a 2-month-old puppy. In the neutral situation the dog could interact freely with one of the partners for 1 min in a closed arena in the presence of its owner. In the feeding situation the encounters were started while the dog was eating food. Our results show that age and context influence the social behaviour of dogs. Further, we have found that although both age groups differentiated the living and non-living test-partners for some extent, the furry AIBO evoked significantly increased responses in comparison to the car. These experiments show the first steps towards the application of robots in behavioural studies, notwithstanding that at present AIBO's limited ability to move constrains its effectiveness as social partner for dogs.

Descriptors: behavior, equipment apparatus devices and instrumentation, aibo animal like robot, industrial equipment, sony corp., animal interactions, feeding situation, neutral situation, social behavior.

Kubinyi, E., A. Miklosi, J. Topal, and V. Csanyi (2003). **Social mimetic behaviour and social anticipation in dogs: preliminary results.** *Animal Cognition* 6(1): 57-63. ISSN: 1435-9448.

Abstract: Learning contributes to the development of mutual mimicry in group mates. The aim of our study was to investigate whether dogs would initiate walking a detour if they were repeatedly exposed to the detouring behaviour of their owner. Eight dog owners were asked to modify their usual way of approaching their home at the end of their daily walks, namely, to make a short detour before the entrance. Owners performed the detour at least 180 times, over a period of 3-6 months. During the first 30 detours (trials 1-30) all dogs followed the owner on the new route. Between trials 151 and 180, four dogs started to walk the detour before the owner displayed any intention to walk in that direction in 50-93% of the cases. Further observations that were carried out on one dog showed that the initialisation of the detours manifested sooner if a second familiar person started to walk the detours. Interestingly, the dog persisted in initialising detours long after the owners stopped detouring. We describe the observed phenomenon in the framework of social anticipation that manifests when an animal learns the proper sequence of an act performed by another animal, so that it can (1) predict the action in this sequence, and (2) as a result start either a similar or a complementary action as a response. These observations suggest that the dogs' social anticipation ability contributes to behavioural synchronisation and cooperative processes between dog and owner.

Descriptors: behavior, neural coordination, behavioral synchronization, detouring

behavior, domestication, learning, mimicry, social anticipation, social mimetic behavior.

Kuussaari, J. (1998). **Eroahdistus - koiran yleinen kaytosongelma. [Separation anxiety as a behavioural problem in dogs.]**. *Suomen Elainlaakarilehti* 104(9): 483-485.

NAL Call Number: 41.8 N813

Descriptors: animal behavior, anxiety, depression, therapy, drug therapy, propranolol, azaperone, adverse effects, abnormal behavior.

Language of Text: Finnish.

Lalor, T. (2004). **Target and retrieval device.** *Official Gazette of the United States Patent and Trademark Office Patents* 1280(4) ISSN: 0098-1133.

Online: <http://www.uspto.gov/web/menu/patdata.html>

NAL Call Number: T223 .A21

Descriptors: equipment, hunting training, target and retrieval device, field equipment.

Landsberg, G. (1998). **Behavior problems in the geriatric dog and cat.** *Proceedings of the North American Veterinary Conference* 12: 59-62 .

NAL Call Number: SF605.N672

Descriptors: animal behavior, behavior problems, old age, dogs, cats.

Notes: Meeting Information: Meeting held on January 10-14, 1998, Orlando, Florida.

Landsberg, G. (2001). **The dog that won't get up--senior pet behavior problems.** *Proceedings of the North American Veterinary Conference* 15: 206-208.

NAL Call Number: SF605.N672

Descriptors: dogs, behavior problems, treatment, cognitive dysfunction.

Notes: In the volume: Small animal and exotics. Part of a three volume set. Meeting held January 13-17, 2001 in Orlando, Florida.

Landsberg, G. and D. Horwitz (1998). ***Behavior of Dogs and Cats: Questions and Answers***, Lifelearn Inc., MacNabb House, University of Guelph: Guelph, Ontario, Canada, 113 p.

Abstract: A compilation of client information sheets on the various types of behaviour regarded by owners as undesirable in dogs and cats, with special attention to aggressive behaviours, and with instructions for training.

Descriptors: veterinary medicine, small animal practice, aggression, abnormal behavior, training of animals, dogs, cats, behavioral therapy.

Landsberg, G.M., W.L. Hunthausen and L.J. Ackerman (1997). *Handbook of Behaviour Problems of the Dog and Cat.*, Veterinary handbook series., Butterworth Heinemann: Oxford; Boston, 211 p. ISBN: 0750630604.

NAL Call Number: SF433.L35 1997

Descriptors: cats, dogs, psychology, problem behaviors, behavior therapy.

Lane, D. and J. Rutter (2002). **Early socialisation of puppies.** *Veterinary Record* 150(2): 55.

NAL Call Number: 41.8 V641

Abstract: Two letters written in response to a letter from R. Newey (VR, December 22/29, 201, p.780).

Descriptors: early puppy vaccination, canine distemper, guide dogs for the blind, temperaments, puppy classes, behavior, socialization.

Ledger, R.A. and J.M. Stephen (2004). **Reducing dog return rates at rescue shelters:**

Applying science for animal welfare. *Animal Welfare* 13(Suppl.): S247. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Descriptors: animal care, behavior, temperament test, RSPCA, animal welfare, owner dog compatibility, rescue shelter, return rate.

Notes: Meeting Information: Universities Federation for Animal Welfare (UFAW) Symposium on Science in the Service of Animal Welfare, Edinburgh, UK; April 2-4, 2003.

Lepper, M., P.H. Kass, and L.A. Hart (2002). **Prediction of adoption versus euthanasia among dogs and cats in a california animal shelter.** *Journal of Applied Animal Welfare Science* 5(1): 29-42. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: The purpose of this retrospective cohort study was to investigate determinants of adoption of cats and dogs from a large municipal animal shelter. The subjects were 4,813 cats and 3,301 dogs impounded by the Sacramento County Department of Animal Care and Regulation and offered for adoption September 9, 1994 to May 26, 1995. The study constructed models predicting the conditional probability of adoption using logistic regression and a final multiple logistic regression model from variables found to be important predictors of adoption. Age, sex, coat color, and reason for relinquishment were major determinants of adoption in cats. Age, sex, coat color, reason for relinquishment, breed, purebred status, and injury status were major determinants of adoption in dogs. Shelter personnel could utilize this information to increase the adoption of frequently overlooked animals. Alternatively, shelters could use this to focus their resources on animals with characteristics the public prefers.

Descriptors: animal care, behavior, models and simulations, euthanasia, multiple logistic regression model, Sacramento County Department of Animal Care and

Regulation, adoption, age differences, breed differences, coat color, municipal animal shelter, relinquishment.

Lester, P.A., J.S. Gaynor, P.W. Hellyer, K. Mama, and A.E. Wagner (2003). **The sedative and behavioral effects of nalbuphine in dogs.** *Contemporary Topics in Laboratory Animal Science* 42(4): 27-31. ISSN: 1060-0558.

NAL Call Number: SF405.5.A23

Abstract: We compared the degree of sedation and frequency and intensity of adverse behaviors in dogs associated with nalbuphine when combined with acepromazine or xylazine compared with those of acepromazine or xylazine alone. Twenty-four dogs (13 female, 11 male) undergoing routine ovariohysterectomy or castration were randomly assigned to one of four groups. Group NX received 0.5 mg/kg nalbuphine and 0.5 mg/kg xylazine subcutaneously (s.c.). Group X received 0.5 mg/kg xylazine s.c. Group NA received 0.5 mg/kg nalbuphine and 0.05 mg/kg acepromazine s.c. Group A received 0.05 mg/kg acepromazine s.c. All dogs received 0.01 mg/kg glycopyrrolate s.c. All doses were administered preoperatively. Preoperative resting measurements of heart rate, respiratory rate, rectal temperature, and body weight were obtained. Sedation was scored both inside and outside a kennel prior to drug administration and at 10, 20, and 30 min after drug administration. Dogs were assessed for behavioral responses (leg withdrawal, shivering, rigidity, orienting, panting, struggling, vocalization, wide-eyed facial expression, breath holding, salivating, hiding, biting, or requiring a muzzle) during three time periods: placing the dog on the table, clipping and prepping of forelimb, and intravenous catheterization. Postoperative recovery behaviors were scored. Expired halothane concentrations were recorded at 15, 30, and 45 min postinduction. Significant differences occurred in the level of sedation at 30 min between dogs receiving nalbuphine and xylazine or xylazine only compared with dogs receiving acepromazine. There was a significant difference in behavioral scores with respect to leg withdrawal and orienting during clipping/prepping between dogs receiving nalbuphine and xylazine compared with dogs receiving xylazine. The combination of nalbuphine and xylazine is a useful premedicant which provided greater sedation than acepromazine and reduced some anxiety behaviors more than did xylazine alone. Nalbuphine is an inexpensive opioid and currently is not a controlled substance in the U.S.

Descriptors: behavior, pharmacology, adverse behaviors, anxiety behaviors.

Lindell, E.M. (1997). **Diagnosis and treatment of destructive behavior in dogs.** *Veterinary Clinics of North America, Small Animal Practice* 27(3): 533-547. ISSN: 0195-5616.

NAL Call Number: SF601.V523

Descriptors: diagnosis, treatment, destruction, anxiety, reviews, animal behavior, abnormal behavior, dogs.

Lindsay, S.R. (2000). *Handbook of Applied Dog Behavior and Training*. 1st edition, Iowa State University Press: Ames, Iowa , 410 p. ISBN: 0813807549 .

NAL Call Number: SF433 .L56 2000

Descriptors: behavior, training, adaptation, learning, domestication, neurobiology, development, assesment of behavior problems, treatment options.

Lucidi, P., N. Bernabo, M. Panunzi, P.D. Villa, and M. Mattioli (2005). **Ethotest: a new model to identify (shelter) dogs' skills as service animals or adoptable pets.**

Applied Animal Behaviour Science 95(1/2): 103-122. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: The paucity of dogs dedicated to animal-assisted therapy (AAT) for disabled people creates long waiting lists worldwide and compromises the health of the few certified animals by demanding too much work from them at times, thus jeopardizing their future as service dogs. In an attempt to obviate this situation, a mathematical model has been conceived to select animals endowed with a set of specific inborn skills from a population of sheltered dogs. The model is able to select dogs capable of creating a special bond with humans and able to work anywhere and with any human partner or team; it represents a rapid, inexpensive and coherent method and has been validated after 1 year of observation. The algorithm consists of three steps. Step A is a test assessing the aggressiveness and temperament of animals and selection occurs based on a binary criterion (yes or no). Step B is a test comprising three items and selects animals able to interact with humans; dogs have to fulfil two conditions to pass on to Step C. Step C is a test evaluating the animal's ability to respond appropriately to easy commands (trainability) given by different partners; dogs have to fulfil two interrelated conditions judged more flexibly than in test B. The aims of the Ethotest are: (a) to prevent aggressive animals from entering animal-assisted activity and/or Therapy programmes; (b) to select dogs with the right aptitude and especially to restrict selection to dogs that offer consistent responses; (c) to include both male and female purebreds or mix breeds older than 1 year of age; (d) to identify animals able to work with different partners. Moreover, the aim of this contribution is to share with the scientific community an easy method to select shelter dogs as safe companion animals..

Descriptors: algorithms, animal behavior, pets, tests, temperament, aggression, human-animal relations, training.

Lund, J.D. and M.C. Jorgensen (1999). **Behaviour patterns and time course of activity in dogs with separation problems.** *Applied Animal Behaviour Science* 63(3): 219-236.

ISSN: 0168-1591.

NAL Call Number: QL750.A6

Descriptors: behavior problems, anxiety, vocalization, video recordings, animal behavior, physical activity, behavior patterns.

Lund, J.D., M.C. Jorgensen, D.S. Mills, S.E. Heath, and L.J. Harrington (1997). **Separation anxiety in pet dogs behaviour patterns and time course of activity**. In: *Proceedings of the First International Conference on Veterinary Behavioural Medicine, April 1-2, 1997, Birmingham, UK*, p. 133-142.

Descriptors: separation , anxiety, behavior.

Lund, J.D. and D.B. Sorensen (1997). **Affivning af familiehunde pa grund af adfaerd-sproblemer. [Euthanasia of companion dogs because of behavioural problems.]**. *Dansk Veterinaertidsskrift* 80(15): 655-659.

NAL Call Number: 41.9 D23

Abstract: Behavioural problems were the reason for euthanasia in 15.6% of the dogs euthanized in 6 small animal clinics in Denmark during a 3-month period in summer, 1995. Of these dogs, 29% were below 2, and 71% below 7 years of age; dogs euthanized for other reasons were over 10 years old. The behavioural problems (mainly aggression to owners and/or others) for which the animals were killed were more common in large dogs (63.3%) and males (67.7%).

Descriptors: age, sex, animal behavior, aggression, euthanasia, dogs.

Language of Text: Danish, Summary in English.

Lund, J.D. and K.S. Vestergaard (1998). **Development of social behaviour in four litters of dogs (Canis familiaris)**. *Acta Veterinaria Scandinavica* 39(2): 183-193. ISSN: 0044-605X.

NAL Call Number: 41.8 AC87

Abstract: The development of social behaviour in 4 litters of dogs was observed without interfering with the puppies from birth to 8 weeks of age. Direct and continuous observation was combined with video recording. Three of the litters were observed during one session of 2 h once a week, and the fourth litter during one session of 40 minutes twice a week. Social interactions were divided into investigation of litter mates (licking, sniffing or investigating orally); social play; and interactions in which agonistic elements (dominance postures, threats, bites or submission) were displayed. The different forms of social interactions appeared for the first time when the puppies were between 14 and 21 days of age. Social investigation appeared first and was followed by play and agonistic interactions. From week 5, differences between the puppies in the tendency to initiate social play and agonistic interactions emerged. Generally, within litters individual differences were consistent over weeks 6-8 (positive correlations between weeks), whereas the tendency in the puppies during these weeks were negatively correlated with those of week 3 (play) or weeks 3 and 4 (agonistic interactions), indicating a rebound effect for both play and agonistic behaviour. No significant correlations were found for social investigation. More often than expected males played or engaged in agonistic behaviour with other males, whereas these behaviours occurred less often than expected between females.

Both males and females, however, preferred male partners for agonistic interactions. No sex differences were found in the direction of social investigation. Agonistic behaviour was often responded to by play and play was often responded to by agonistic behaviour, and the results indicated that before 8 weeks of age differences in social behaviour between the puppies were already established.

Descriptors: social behavior, postnatal development, young animals, newborn animals, sex, age, dogs.

Language of Text: English, Summary in Danish.

Maarschalkerweerd, R.J., N. Endenburg, J. Kirpensteijn, and B.W. Knol (1997). **Influence of orchietomy on canine behaviour.** *Veterinary Record* 140(24): 617-619. ISSN: 0042-4900.

NAL Call Number: 41.8 V641

Abstract: 122 dog owners were interviewed on the effects of orchietomy on the behaviour, side effects, and testosterone-dependent disease processes in their dogs. Behavioural problems were the main reason for orchietomy, unwanted sexual behaviour being the most common, together with roaming, aggression, and abnormal urination behaviour. Objectionable sexual behaviour, inter-male aggression, roaming, and abnormal urination were reduced after orchietomy in about 60% of the dogs. Side effects included increased bodyweight, increased appetite and decreased activity in less than 50% of the dogs, and there was a correlation between increased appetite and bodyweight. The clinical signs of testosterone-dependent disease in most of the dogs either decreased or disappeared after orchietomy.

Descriptors: postoperative complications, body weight, food intake, testosterone, pets, mating behavior, urination, vices, aggression, surgery, castration.

Mallonee, J.S. and P. Joslin (2004). **Traumatic stress disorder observed in an adult wild captive wolf (canis lupus).** *Journal of Applied Animal Welfare Science* 7(2): 107-126. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: Tenino was an adult female wolf, born in the wild and placed into captivity at 1 year of age because of her participation in livestock depredation. Her method of capture, well documented, involved being darted twice by helicopter and translocated twice. This method of capture would have exposed her to the 2 factors that are important in the etiology of posttraumatic stress disorder in humans: uncontrollability and unpredictability. In a case study we conducted, Tenino displayed symptoms that were similar to those of humans with posttraumatic stress disorder. These symptoms included hypervigilance, exaggerated startles, generalized fear, avoidance, and arousal. She also displayed looking up behaviors that occurred during the presence of perceived threats such as a neighboring rancher's gunshots; the keeper truck; some keeper activity; and, occasionally, aircraft. When compared to 3 other wolves, includ-

ing her enclosure mate, these behaviors were exclusive to Tenino.

Descriptors: animal care, behavior, traumatic stress disorder, arousal, avoidance, exaggerated startles, generalized fear, hypervigilance, looking up behavior, uncontrollability, unpredictability.

Malm, K. (1999). **Problembeteende hos hundar: ett område med många aspekter.** [Behavioural problems in dogs: a topic with many aspects.]. *Svensk Veterinartidning* 51(7): 363-368. ISSN: 0346-2250.

NAL Call Number: 41.8 N813

Descriptors: animal behavior, aggression, training of animals, pets, neurotropic drugs, case reports, dogs.

Language of Text: Swedish.

Manuel, M.F., J.H.A. Abalos, and C.D. Solis (2002). **Some acute behavioural and physiological effects observed in local Philippine dogs voluntarily fed with monosodium glutamate (MSG) in the diet.** *Philippine Journal of Veterinary Medicine* 39(1): 50-51. ISSN: 0031-7705.

NAL Call Number: 41.8 P53

Abstract: Twelve 4- to 7-month-old Philippine nondescript dogs of both sexes were fed monosodium glutamate (MSG) in the diet in quantities varying from 0, 5 and 10% of the amount of food given, using the Latin square design. Both physiological and behavioural parameters were examined in all animals an hour before and after feeding. Doses of MSG as high as 10% did not induce any noticeable change in the behaviour of the dogs. On the other hand, some temporary physiological changes such as tachycardia, vomiting and excretion of dark-coloured faeces were observed in 10 of the dogs.

Descriptors: adverse effects, monosodium glutamate, poisoning, toxicity, dogs.

Marston, L.C., P.C. Bennett, and G.J. Coleman (2005). **Adopting shelter dogs: owner experiences of the first month post-adoption.** *Anthrozoos* 18(4): 358-378. ISSN: 0892-7936.

NAL Call Number: SF411.A57

Abstract: A number of studies have examined factors associated with the relinquishment of pet dogs to animal welfare shelters. In Australia, however, there has been little investigation of new owners' experiences when they subsequently adopt one of these dogs. To address this, telephone interviews were conducted with 62 persons who had recently adopted a shelter dog in Melbourne, Australia. Data relating to adopter demographics, factors influencing the selection of a dog and problems experienced post-adoption were collected. Shelter dogs were primarily acquired to replace a deceased pet or as companions to humans or other dogs. Selection was influenced by the dog's size, general appearance and behavior, with adopters preferring dogs who behaved in a calm and friendly manner. Common problems reported during the

initial post -adoptive period were hyperactivity/boisterousness, compatibility issues with an existing pet and pulling on the lead. Escaping was strongly associated with separation-related problems. Three-quarters of the sample walked their dogs daily for 30 minutes or more, with larger dogs exercised for longer. Most dogs were exercised off-lead for some period, particularly larger dogs. This study indicates that improving assessment and matching procedures, and providing in -house and post-adoptive training could increase rehoming success rates..

Descriptors: adoption, animal behavior, animal welfare, hyperactivity, interviews, ownership, dogs.

Marston, L.C. and P.C. Bennett (2003). **Reforging the bond: towards successful canine adoption.** *Applied Animal Behaviour Science* 83(3): 227-245. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: While most human-canine relationships are very fulfilling others fail, resulting in a large number of animals being abandoned or relinquished to animal shelters each year. This paper reviews our current understanding of the canine relinquishment and adoption process, with the aim of identifying those areas in which research is incomplete or absent. In order to achieve this aim, the process of canine ownership, relinquishment and adoption is broken down into a number of logical stages, which are then evaluated separately. The areas reviewed include the reasons why people acquire dogs, factors involved in their relinquishment, the effects of shelter admission upon canine behaviour, the evaluation of a dog's potential for adoption, characteristics of adopters, factors influencing a prospective adopter's choice and problems which may be experienced post-adoption. The review identifies deficiencies in our current knowledge and indicates valid directions for future research.

Descriptors: behavior, philosophy, ethics, animal shelter, animal welfare, human-canine relationship, pet adoption, shelter relinquishment.

Matre, J. and R. Kyllingen (1999). **Hund: adferd og samspill. Kartlegging og maling av adferd hos hund.** [Dogs: behaviour and interaction. Recording and assessing the behaviour of dogs.] . *Norsk Veterinaertidsskrift* 111(6): 426-428. ISSN: 0332-5741.

NAL Call Number: 41.8 N813

Descriptors: behavior, pets, record keeping, assessment.

Language of Text: Norwegian.

Matre, P.J., R. Fjellanger, and T. Owren (1999). **Hund: adferd og samspill. Avklaring av noen begreper innenfor laeringspsykologien.** [Dogs: behaviour and interaction. Clarification of some concepts in the psychology of learning.]. *Norsk Veterinaertidsskrift* 111(3): 162-165. ISSN: 0332-5741.

NAL Call Number: 41.8 N813

Descriptors: training, psychology, behavior, learning.

Language of Text: Norwegian.

Matre, P.J., R. Fjellanger, and T. Owren (1999). **Hund: adferd og samspill. Den vanskelige utfordringen. Fra ny laering til varige endringer i vaeremater.** [Dogs: behaviour and interaction. The difficult challenge. From new learning to lasting changes in behaviour.]. *Norsk Veterinaertidsskrift* 111(5): 355-357. ISSN: 0332-5741.

NAL Call Number: 41.8 N813

Descriptors: animal behavior, learning, animal welfare, training of animals, restraint of animals.

Language of Text: Norwegian.

Matre, P.J., R. Fjellanger, and T. Owren (1999). **Hund: adferd og samspill. Holdninger til innlaering.** [Dogs: behaviour and interaction. Attitudes to learning.]. *Norsk Veterinaertidsskrift* 111(2): 84-87.

NAL Call Number: 41.8 N813

Descriptors: animal behavior, abnormal behavior, training, dogs.

Language of Text: Norwegian.

Max, A. and A. Grabiec (2000). **Leczenie niepozadanych zachowan samczych psow i kotow.** [Treatment of undesirable sexual behaviour in dogs and cats.]. *Zycie Weterynaryjne* 75(1): 19-22. ISSN: 0137-6810.

NAL Call Number: SF604.Z9

Descriptors: sexual maturity, urination, spraying, male animals, castration, diazepam, abnormal behavior, animal behavior, mating behavior, treatment, cats, dogs.

Language of Text: Polish.

McGreevy, P.D., P.K.d. Torre, D.L. Evans, and P.K. della Torre (2003). **Animal behaviour learning environment: software to facilitate learning in canine and feline behaviour therapy.** *Journal of Veterinary Medical Education* 30(4): 308-317. ISSN: 0748-321X.

NAL Call Number: SF601.J62

Abstract: Interactive software has been developed on CD-ROM to facilitate learning of problem formulation, diagnostic methodology and therapeutic options in dog and cat behaviour problems. Students working in small groups are presented with a signalment, a case history and brief description of the problem behaviour as perceived by the client. Students then navigate through the case history by asking the client questions from an icon-driven question pad. Animated video responses to the questions are provided. Students are then required to rate the significance of the questions and answers with respect to the development of the unwelcome behaviour. Links to online self-assessments and to resource materials about causation and treatment options are provided to assist students in their decision-making process. The activity concludes with a software-generated e-mail submission that includes the recorded history, diagnosis and recommended treatment for assessment purposes.

Descriptors: abnormal behavior, animal behavior, computer software, diagnosis, teaching materials, therapy, veterinary education, cats, dogs.

Meek, P.D. (1999). **The movement, roaming behaviour and home range of free-roaming domestic dogs, *Canis lupus familiaris*, in coastal New South Wales.** *Wildlife Research* 26(6): 847-855. ISSN: 1035-3712.

NAL Call Number: S960.W5

Abstract: Ten free-roaming domestic dogs from an Aboriginal community in New South Wales, Australia, were radio-collared to determine the sizes of their home ranges and to observe their wandering behaviour. Dogs were tracked over 5 sessions between April 1994 and April 1995. Five of the dogs went on wandering forays, while the other 5 roamed only within the vicinity of the community. Home-range size was highly variable within the study group: the mean for the wandering dogs was 927 ha whereas that of the sedentary dogs was 2.6 ha. Dogs travelled 8-30 km on forays. All forays were initiated at night and those that were recorded had an average duration of 26 h. Foray destinations were usually riparian habitats where macropod quarry were abundant. The potential for dogs to spread diseases over large areas is discussed.

Descriptors: animal behavior, disease transmission, telemetry, monitoring, ecology, animal ecology, dogs.

Mentzel, R.E. (1997). **Conductas indeseables en perros internados. [Undesirable behaviour in confined dogs.]** *Revista De Medicina Veterinaria Buenos Aires* 78(6): 432-438. ISSN: 0325-6391.

NAL Call Number: 41.8 B86

Abstract: The study was carried out in a canine rehabilitation centre over a 16-month period. A total of 194 mongrel dogs, aged 3 months to 12 years, were studied. All dogs showing abnormal behaviour were submitted to an ethological examination consisting of a review of the case history, physical examination, direct observation and neurological examination. Behavioural abnormalities in decreasing order of frequency were: intraspecific aggression, timidity, hyperactivity, digging, aggression due to fear, destructive chewing, excessive barking, eating of puppies, melancholy, stereotyped movements, aggression due to pain, maternal aggression, possessive aggression, territorial aggression, maternal indifference and fear of other dogs. It is suggested that similar problems could be found in other confined populations such as in shelters, refuges, breeding kennels and hospitals.

Descriptors: mongrel dogs, abnormal behavior, rehabilitation, case histories, physical exam, neurological exam, aggression, timidity, hyperactivity, pain, fear.

Language of Text: Spanish, Summary in English.

Mertens, P.A. (2003). **Compulsive behavior in dogs**. *NAVC Clinician's Brief* August: 15-16, 44. ISSN: 1542-4014.

NAL Call Number: SF601 .N67

Descriptors: abnormal behavior, dogs, compulsive behavior, dermatitis, diagnosis, drug therapy.

Mertens, P.A., G. Coles, J. Dobson, J. Elliott, C. Elwood, E. Hall, S. Heath, P. Hill, P.H. Moore, J. Innes, A. Jeffery, S. Redrobe, S. Tasker, J. Williams, P. Wotton, and P. Yam (2003). **The ageing dog: A behavioural perspective**. In: *Scientific Proceedings Veterinary Programme: British Small Animal Veterinary Association 46th Annual Congress, April 3-6, 2003, Birmingham, UK*, British Small Animal Veterinary Association: Quedgeley, UK, p. 148-152.

Descriptors: aging, behavior, drug therapy, environment, therapy.

Mertens, P.A. and J. Unshelm (1997). **Owner compliance in veterinary medicine: canine and feline behaviour therapy**. *Tierärztliche Umschau* 52(12): 701-704. ISSN: 0049-3864.

NAL Call Number: 41.8 T445

Descriptors: behavior therapy, veterinary medicine, dog and cat owners, owner acceptance of advice, applied animal behavior, behavior counselling, veterinarians.

Language of Text: German.

Mertens, P.A. and J. Unshelm (1997). **Zur Akzeptanz tierärztlicher Leistungen durch den Tierhalter - die Verhaltenstherapie von Hund und Katze**. [The attitude of owners of dogs and cats to a veterinarian's proposals for behavioural therapy.]. *Tierärztliche Umschau* 52(12): 701-704.

NAL Call Number: 41.8 T445

Descriptors: small animal practice, animal behavior, abnormal behavior, dogs, cats.

Language of Text: German, Summary in English.

Mikkelsen, J. and J.D. Lund (1999). **Aflivning af hunde pa grund af adfaerdsproblemer. En epidemiologisk undersogelse over euthanasi af hunde i Danmark - med saerlig fokus pa aggressionsproblemer**. [Euthanasia of dogs because of behavioural problems. An epidemiological study on euthanasia of dogs in Denmark - with particular reference to aggression problems.]. *Dansk Veterinaertidsskrift* 82(11): 474-479. ISSN: 0106-6854.

NAL Call Number: 41.9 D23

Abstract: A study based on a questionnaire sent to 120 veterinary clinics in Denmark in the period July 1997 to April 1998 covered 2493 dogs that required euthanasia for various reasons, and a control group of 2247 treated for other conditions. Age-related and behavioural problems were the most frequent reasons for euthanasia, with aggressive behaviour recorded in about two-thirds of the 23.6% with

behavioural problems; less than 16% had received treatment for their problems, and about 42.4% were below 3 years of age. Large breeds and male dogs (two-thirds of those with behavioural problems) were significant risk factors for euthanasia.

Descriptors: euthanasia, aggression, animal behavior, age, breeds, epidemiology, surveys, dogs .

Language of Text: Danish, Summary in English.

Miklosi, A., J. Topal, and V. Csanyi (2004). **Comparative social cognition: what can dogs teach us?** *Animal Behaviour* 67(Part 6): 995-1004. ISSN: 0003-3472.

NAL Call Number: 410 B77

Descriptors: behavior, communication, evolution and adaptation, sociology, population studies, comparative social cognition, ethology, social learning, social relationships.

Mills, D.S. (1997). **Separating a dog's bite from its owner's problem: Conceptualising behaviour problems.** In: *Proceedings of the First International Conference on Veterinary Behavioural Medicine, April 1-2, 1997, Birmingham, UK*, Universities Federation for Animal Welfare: Potters Bar, Herts, Great Britain, p. 7-9. ISBN: 0900767979.

NAL Call Number: QL750.I67 1997

Descriptors: behavior, problems, biting, aggression, human-animal relationships.

Muller, G. (2000). **Les troubles comportementaux a l'élevage chez le chien. [Behavioural problems in dog breeding kennels].** *Point Veterinaire* 31(205): 109-116. ISSN: 0335-4997.

NAL Call Number: SF602.P6

Descriptors: animal behavior, abnormal behavior, kennels, training of animals, dogs.

Language of Text: French, Summary in English.

Neidhart, L. and R. Boyd (2002). **Companion animal adoption study.** *Journal of Applied Animal Welfare Science* 5(3): 175-192. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: To better understand the outcomes of companion animal adoptions, Bardsley & Neidhart Inc. conducted a series of 3 surveys over a 1-year period with dog and cat owners who had adopted their pet through either a (a) Luv-A-Pet location, (b) Adopt-a-thon, or (c) traditional shelter. This article suggests opportunities to improve owners' perceptions of their pets and the adoption process through (a) providing more information before adoption about pet health and behaviors, (b) providing counseling to potential adopters to place pets appropriately, and (c) educating adopters to promote companion animal health and retention. Results demonstrate that the pet's relationship to the family unit, such as where the pet sleeps and how much time is spent with the pet, is related to the amount of veterinary care the companion animal receives, and to long-term retention. Satisfaction and reten-

tion are attributed to the pet's personality, compatibility, and behavior, rather than demographic differences among adopters or between adoption settings. The age of the companion animal at adoption, the intended recipient, and presence of children in the home also play a role. Health problems were an issue initially for half of all adopted pets, but most were resolved within 12 months. Roughly one fourth of adopters who no longer have their companion animal said their pet died. Characteristics of pets that died support the contention that spaying and neutering profoundly affects a companion animal's life span. Although retention is similar for dogs and cats, mortality is higher among cats in the first year after adoption.

Descriptors: behavior, philosophy and ethics, neutering, spaying, adopt a thon, luv a pet location, petsmart, age differences, animal shelter, companion animal adoption, compatibility, counseling, education, health, mortality, personality, pet retention, veterinary care.

Neilson, J.C., B.L. Hart, K.D. Cliff, and W.W. Ruehl (2001). **Prevalence of behavioral changes associated with age-related cognitive impairment in dogs.** *Journal of the American Veterinary Medical Association* 218(11): 1787-1791. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Descriptors: dogs, behavior change, incidence, behavior problems, aging, vision disorders, hearing impairment, body weight, memory, learning ability, age differences.

Neilson, J.C., R.A. Eckstein, and B.L. Hart (1997). **Effects of castration on problem behaviors in male dogs with reference to age and duration of behavior.** *Journal of the American Veterinary Medical Association* 211(2): 180-182. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: Objective: To determine whether 9 problem behaviors in adult male dogs were affected by castration and to examine the influence of age and duration of problem behavior on behavioral effects of castration. Design: Cohort study. Animals: 57 male dogs gt 2 years old at the time of castration that had gtoreq 1 of the targeted problem behaviors. Procedure: Data were collected by telephone contact with owners to identify dogs that had gtoreq 1 problem behavior before castration and to estimate the improvement (ie, decrease) in the objectionable behaviors after castration. Problem behaviors of interest included urine marking in the house, mounting, roaming, fear of inanimate stimuli, aggression toward human family members, aggression toward unfamiliar people, aggression toward other dogs in the household, aggression toward unfamiliar dogs, and aggression toward human territorial intruders. Results: Effects of castration on fear of inanimate stimuli or aggression toward unfamiliar people were not significant. For urine marking, mounting, and roaming, castration resulted in an improvement of gtoreq 50% in gtoreq 60% of dogs and an improvement of gtoreq 90% in 25 to 40% of dogs. For remaining behaviors, castration resulted in an improvement of gtoreq 50% in lt 35% of dogs. Signifi-

cant correlations were not found between the percentage of improvement and age of the dog or duration of the problem behavior at the time of castration. Clinical Implications: Castration was most effective in altering objectionable urine marking, mounting, and roaming. With various types of aggressive behavior, including aggression toward human family members, castration may be effective in decreasing aggression in some dogs, but fewer than a third can be expected to have marked improvement. Age of the dog or duration of the problem behavior does not have value in predicting whether castration will have a beneficial effect.

Descriptors: behavior, reproductive system, adult, age, aggression, behavior, castration, duration, male, mounting, problem behaviors, roaming, surgical method, urine marking, veterinary medicine.

Netto, W.J. and D.J.U. Planta (1997). **Behavioural testing for aggression in the domestic dog.** *Applied Animal Behaviour Science* 52(3-4): 243-263. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Aggressive behaviour in dogs is an increasing problem in The Netherlands. In an attempt to find a solution to this problem the Dutch Ministry of Agriculture, Conservation and Fisheries has financially supported a study aimed at developing an aggression test for dogs. The primary goal is to use the test as an instrument for excluding very aggressive individuals of certain breeds from breeding. On the basis of two pilot studies a test has been developed with 43 sub-tests in which a variety of stimuli are presented relating to contexts that are known to elicit aggression in dogs. In the final test, 112 dogs, 75 of which were potentially aggressive breeds (PAB) and a group of 37 "control dogs", were tested. Questionnaires were used to collect information about the aggressive history of the dog. The results show clear differences in the aggression-eliciting properties of the sub-tests. Dogs with and without biting history differ significantly in their biting/attack behaviour during the test (Mann-Whitney U-test, $P = 0.02$). This difference is also found -for only the PAB-dogs (MWU-test, $P = 0.007$). For reliability of analysis, 37 dogs were re-tested. The comparison between test and re-test shows a significant correlation for total attack (SPCC = 0.78) and biting/attack (SPCC = 0.68). So that the test can be implemented in practice, two "Models for Unacceptable Aggression (MUAs)" are discussed. To validate the results of the test and the application of the MUAs the results are compared with the biting history of the dogs. The results of an MUA based exclusively on the biting/attack behaviour shows a significant relation with the biting history for all dogs and for the PAB-dogs. On the basis of these results we consider the test to be a useful instrument for the assessment of aggressive tendencies in dogs, provided the test is performed by trained researchers or trained judges and test assistants.

Descriptors: behavior, aggression, attack behavior, behavior, behavioral testing, biting, methodology, the Netherlands.

O' Farrell, V. (1997). **Owner attitudes and dog behaviour problems.** *Applied Animal Behaviour Science* 52(3-4): 205-213. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: In the treatment of dog behaviour problems, assessment of the owner's attitude is usually an essential part of the diagnostic process. Questionnaire studies of groups of owners reveal wide variation in both degree and kind of owner attachment. Individual-centred methods such as the Kelly Repertory Grid demonstrate the complexity of such attachments. It is suggested that the psychoanalytic concept of projection can often best explain their irrational aspects: experimental evidence is adduced and clinical examples discussed. With regard to particular types of behaviour problems, there is evidence of an association between dominance aggression in the dog and the anthropomorphic involvement of the owner; also between over-excitement and displacement activities in the dog and anxiety in the owner. Owner anxiety is not associated with a higher incidence of phobias in the dog; a dog's phobia, however, does tend to cause greater distress to a more anxious owner.

Descriptors: behavior, attitudes, pets, abnormal behavior, diagnosis, psychological factors, psychology, human behavior, dogs.

Odendaal, J.S.J. (1997). **A diagnostic classification of problem behavior in dogs and cats.**

Veterinary Clinics of North America Small Animal Practice 27(3): 427-443. ISSN: 0195-5616.

NAL Call Number: SF601.V523

Descriptors: behavior, pathology, abnormal behavior, behavior, classification system, diagnostic classification, diagnostic consistency, patient, veterinary clinical ethology, veterinary medicine.

Odendaal, J.S.J. and R.A. Meintjes (2003). **Neurophysiological correlates of affiliative behaviour between humans and dogs.** *Veterinary Journal* 165(3): 296-301. ISSN: 1090-0233.

NAL Call Number: SF601.V484

Abstract: Few physiological parameters for positive human-companion animal contact have been identified and those that are established have all been in humans. The implication is that if the physiological reactions are mutual, dogs would experience the same psychological benefits from these neurophysiological changes as humans. Therefore, we have determined the role of certain neurochemicals during affiliation behaviour on an inter-species basis. Our results indicate that concentrations of beta-endorphin, oxytocin, prolactin, beta-phenylethylamine, and dopamine increased in both species after positive interspecies interaction, while that of cortisol decreased in the humans only. Indicators of mutual physiological changes during positive interaction between dog lovers and dogs may contribute to a better understanding of the human-animal bond in veterinary practice.

Descriptors: behavior, nervous system, veterinary medicine, affiliation behavior, neurophysiological correlates, human-animal interaction.

Ogburn, P., S. Crouse, F. Martin, and K. Houpt (1998). **Comparison of behavioral and physiological responses of dogs wearing two different types of collars.** *Applied Animal Behaviour Science* 61(2): 133-142. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Physiological and behavioural responses of dogs while wearing two different types of collars were compared. The 2 types of collar were a traditional buckle nylon neck collar, and a newly developed nylon head collar. Before and following tests of obedience training and restraint, measurements were made of blood pressure, heart rate, respiratory rate and pupillary dilation to compare quantitative and qualitative measures of behaviour during physiological measurements and during the tests of responses to training. Plasma corticotropin (ACTH) and cortisol levels were measured at the conclusion of testing. There were no significant differences in the physiological responses to the 2 types of collars. There was a trend for physiological responses to diminish during the course of the testing with both collars. This was attributed to a physiological accommodation to handling and training. Evaluation of behavioural responses indicated that during testing, dogs were more unruly and disobedient and pulled on the leash while wearing traditional neck collars, but pawed at their noses more and watched the handler less while wearing head collars. The dogs more frequently lowered their heads and ears when wearing the head collar. It is suggested that owners of dogs wearing head collars may be interested to know that their dogs are not physiologically stressed when the collars are initially applied, despite nose pawing.

Descriptors: stress, animal behavior, blood pressure, heart rate, respiration rate, corticotropin, hydrocortisone, training of animals, husbandry, harness, restraint of animals, training of animals, eyes, responses, vocalization, animal behavior, social dominance, blood plasma, pupil dilation.

Orlowski, T., T. Jezierski, and T. Bednarek (2001). **The behaviour of water-working dogs during a simulated rescue of drowning persons.** *Animal Science Papers and Reports* 19(2): 157-166. ISSN: 0860-4037.

NAL Call Number: SF1.A53

Abstract: The paper presents an unusual, documented research on behaviour of water-working dogs during a simulated rescue of drowning humans evaluated qualitatively and quantitatively. During the rescue, humans grasped a special harness worn by the dogs. Six dogs (two Newfoundlands, three German Shepherds and one Labrador Retriever) were used. Variation of the time and speed of particular phases of the rescue action were analysed depending on dog, distance to the drowning person (25, 40 and 80 m) and water and air temperature during the action. The dogs differed

significantly in their manner of entering the water ($P < 0.01$). Only one dog always jumped into the water immediately after receiving the command. The other dogs needed extra encouragement or prompting in 28-83% of tests, mostly consisting of the handler throwing an object into the water to persuade the dog to enter the water. Two dogs on one occasion each refused to enter the water unless behind the handler in a boat. The manner and time of entering the water was significantly affected by the distance to the drowning person ($P < 0.01$). At longer distances to the drowning man, the dogs entered the water less willingly and after longer hesitation. The dogs differed in the time taken to tow the rescued person to land ($P = 0.025$). Of all the breeds studied, German Shepherds tended to swim faster both when swimming towards the drowning person and when towing the person to land. The mean swimming speed when towing to land was considerably lower, compared to that when swimming towards the drowning person. Unexpectedly, the lowest swimming speed was observed at the distance of 25 m between the drowning person and the water edge. The effect of air and water temperature on swimming speed was inconsistent: mean speed was higher at higher air temperature and lower at higher water temperature. The experiment demonstrated that dogs can be useful during a water-rescue action. **Descriptors:** behavior, air temperature, behavior, drowning, rescue, swimming speed, water temperature.

Osella, M.C., L. Bergamasco, and P. Badino (2003). **I disturbi comportamentali geriatrici del cane: valutazione clinica, comportamentale ed approccio terapeutico. [Age-related behavioural disorders in dogs: clinical, behavioural and therapeutic approach.]**. *Veterinaria Cremona* 17(2): 41-47. ISSN: 0391-3151.

Abstract: Practicing veterinarians have long been aware of geriatric behavioural changes in pet dogs, often described by the owners as “normal aging” or “senility”. The first diagnostic tool is a good knowledge of the potential behavioural changes associated with aging; afterwards any underlying medical conditions (neurologic, hormonal, structural, disease processes etc.) related to the behavioural changes should be identified. Old pet dogs exhibit multiple behavioural or “cognitive” problems indicative of cognitive dysfunction, which in some canine patients are sufficiently severe to disrupt the dog’s function as an adequate pet. Aim of this study has been to analyse the different geriatric behavioural problems by mean of behaviour and clinical evaluation. During 1999-2001, forty-five dogs had been selected in the population of elderly dogs referred for behavioural abnormalities without primary organ failure. The following diagnosis has been established: cognitive dysfunction (7 cases), age-related dysthymia (3), age-related hyper-aggressiveness syndrome (8), involutive depression (6), age-related hyperattachment syndrome (6), age-related phobias (3), age-related generalized anxiety (12). In each case a therapeutic plan was implemented, including the environmental and the behavioural aspects, the human-animal relationship and a drug therapy when necessary. The recovery grade was excellent

(70%) and good (25%) in most of the cases, encouraging further research on the topic.

Descriptors: abnormal behavior, aging, animal behavior, geriatrics, therapy, dogs.

Language of Text: Italian, Summary in English.

Ostrander, E.A., M.A. Fleming, C.S. Mellersh, M. Gibbs, L.V. Francisco, and N.A. Wiegand (1997). **A canine linkage map for analyzing breed specific behaviors in border collies and newfoundlands**. *American Journal of Human Genetics* 61(4 Suppl.): A241. ISSN: 0002-9297.

NAL Call Number: QH431.A1A54

Descriptors: genetics, dogs, animal behavior, canine linkage mapping, gene mapping method, breed specific behaviors, border collies, Newfoundlands, meeting abstract.

Notes: Meeting Information: 47th Annual Meeting of the American Society of Human Genetics, Baltimore, Maryland, USA; October 28-November 1, 1997.

Overall, K.L. (1998). **Animal behavior case of the month. [Separation anxiety in a dog]**. *Journal of the American Veterinary Medical Association* 212(11): 1702-1704. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Descriptors: animal behavior, anxiety, treatment, abnormal behavior, drug therapy, psychotropic drugs, dogs.

Overall, K.L. (1998). **Animal behavior case of the month. [Stereotypical motor behaviour as a manifestation of separation anxiety in a dog]**. *Journal of the American Veterinary Medical Association* 213(1): 34-36. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Descriptors: animal behavior, abnormal behavior, case reports, diagnosis, treatment, social behavior, dogs.

Overall, K.L. (1999). **Teaching your aggressive dog deferential behavior**. *Veterinary Medicine* 94(11): 984-985. ISSN: 8750-7943.

NAL Call Number: 41.8 M69

Descriptors: dogs, training of animals, aggressive behavior.

Overall, K.L. (1999). **Using active behavior modification to treat dominance aggression in dogs**. *Veterinary Medicine* 94(12): 1044-1047. ISSN: 8750-7943.

NAL Call Number: 41.8 M69

Descriptors: aggression, dominance, abnormal behavior, animal behavior, treatment, dogs.

Overall, K.L. (1999). **Using avoidance and passive behavior modification to treat canine dominance aggression.** *Veterinary Medicine* 94(11): 981-982. ISSN: 8750-7943.
NAL Call Number: 41.8 M69
Descriptors: dogs, behavior problems, aggressive behavior, behavior modification, social dominance.

Overall, K.L. and D. Dyer (2005). **Enrichment strategies for laboratory animals from the viewpoint of clinical veterinary behavioral medicine: emphasis on cats on dogs.** *ILAR Journal* 46(2): 202-215. ISSN: 1084-2020.

NAL Call Number: QL55.A1143

Abstract: Behavioral wellness has become a recent focus for the care of laboratory animals, farm and zoo animals, and pets. Behavioral enrichment issues for these groups are more similar than dissimilar, and each group can learn from the other. The emphasis on overall enhancement for laboratory dogs and cats in this review includes an emphasis on behavioral enrichment. Understanding the range of behaviors, behavioral choices, and cognitive stimulation that cats and dogs exhibit under non-laboratory conditions can increase the ability of investigators to predict which enrichments are likely to be the most successful in the laboratory. Many of the enrichment strategies described are surprisingly straightforward and inexpensive to implement.

Descriptors: laboratory dogs, laboratory cats, literature review, behavioral enrichment, environmental enrichment, cognitive stimulation, costs.

Overall, K.L. and W. Webber (1998). **Obsessive-compulsive behaviours and obsessive-compulsive disorder (OCD) in dogs and cats .** *Veterinary Continuing Education* 185: 97-105. ISSN: 0112-9643.

Descriptors: behavior, abnormal behavior, obsessive-compulsive disorder (OCD), dogs, cats.

Pal, S.K. (2005). **Parental care in free-ranging dogs, *Canis familiaris*.** *Applied Animal Behaviour Science* 90(1): 31-47. ISSN: 0168-1591.

Online: <http://dx.doi.org/10.1016/j.applanim.2004.08.002>

NAL Call Number: QL750.A6

Descriptors: animal care, behavior, free ranging, gestation period, lactation, parental care, parturition, physical attack, regurgitation.

Pal, S.K., B. Ghosh, and S. Roy (1998). **Agonistic behaviour of free-ranging dogs (*Canis familiaris*) in relation to season, sex and age.** *Applied Animal Behaviour Science* 59(4): 331-348. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(98\)00108-7](http://dx.doi.org/10.1016/S0168-1591(98)00108-7)

NAL Call Number: QL750.A6

Abstract: Observations on the agonistic behaviour of 12 free-ranging dogs from

2 neighbouring groups were recorded in Katwa town, India. Both intra- and inter-group agonistic encounters were recorded for 4 h/day from March 1995 to February 1996. Agonistic encounters were more common between inter- than intra-group members ($P < 0.05$). The mean number of intra- and inter-group agonistic encounters were greatest in the winter (13.33 ± 1.89 and 32.25 ± 4.43 per season per dog respectively) and late monsoon (12.33 ± 1.99 and 27.75 ± 2.01 per season per dog), when the females were lactating and in oestrus, respectively. Dominance hierarchies were established among the adult dogs of either sex, based on aggressive encounters. Although individual differences in agonism were observed, overall levels of aggression were higher among the adult females than the other groups. Overall levels of submission were higher among the juvenile males than the other groups.

Descriptors: agonistic behavior, aggression, age, sex differences, seasons, breeding season, estrus, lactation, behavior, dogs.

Pal, S.K., B. Ghosh, and S. Roy (1998). **Dispersal behaviour of free-ranging dogs (*Canis familiaris*) in relation to age, sex, season and dispersal distance.** *Applied Animal Behaviour Science* 61(2): 123-132. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(98\)00185-3](http://dx.doi.org/10.1016/S0168-1591(98)00185-3)

NAL Call Number: QL750.A6

Abstract: The dispersal of free-ranging dogs from Katwa, West Bengal, India, was studied between January 1993 and December 1996. Between January 1993 and September 1996, 315 pups were observed from 64 litters. Pups were born between October and March each year, with a peak between November and January. The mortality rate was 68% during the first 4 months, with 102 individuals surviving to the juvenile stage (4 to 12 months). The rates of dispersal were 39.3 and 23.3% in juveniles and adults, respectively. Mean home range sizes were 4.8 ± 1.7 and 8.4 ± 1.7 ha for non-dispersing and dispersing dogs, respectively. Moreover, there were significant seasonal variations in the home range sizes of both non-dispersing and dispersing dogs. Juvenile males were the predominant dispersers. Dispersal occurred in all seasons and dispersal rates did not differ between seasons. However, during late monsoon (September to November), dispersal was significantly greater among males than females. The mean dispersal distance of 1.702 ± 0.425 km was relatively small, and did not differ between males and females.

Descriptors: dogs, puppies, mortality, territory, dispersal, sex differences, age differences, seasonal variation, seasons, west bengal, monsoon season, behavior, stray animals, seasonality, seasonal variation, age differences, sex differences, dispersal, movement .

Pal, S.K., B. Ghosh, and S. Roy (1999). **Inter- and intra-sexual behaviour of free-ranging dogs (*Canis familiaris*).** *Applied Animal Behaviour Science* 62(2-3): 267-278. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(98\)00220-2](http://dx.doi.org/10.1016/S0168-1591(98)00220-2)

NAL Call Number: QL750.A6

Abstract: During March 1994 to February 1997 the sexual behaviour of a total of 292 free-ranging dogs was observed weekly in the town of Katwa in West Bengal. Of all resident females, 20 oestrus females were studied as focal animals. The number of males which courted a female ranged from 6 to 28 (mean 13.27 for first oestrus bitches and 14.57 for older bitches). There was a positive correlation between the number of males associated with a particular oestrous bitch and the duration of each association (0.767, $P < 0.05$). All courting males ($n = 277$) attempted to mount oestrus bitches but only 159 successfully copulated (144 young adults and 15 old adults). Mounting rate was higher for old than young males (mean 31.73 and 9.68 respectively; $P < 0.05$) but a higher proportion of young than old adults copulated successfully (42 and 20%). Most females showed mating preferences and allowed some males to mount readily while avoiding and attacking other males; however, non-preferred dominant males were observed to mate forcibly. There was a negative correlation between the number of males present in an association and the number of successful copulators (-0.993, $P < 0.05$). Occasionally, copulations were performed by opportunist males after being present only a short time. The majority (74%) of male-male encounters observed in the courting areas were aggressive. Only 74 female-female interactions were observed of which 22 were aggressive. Both male-male and female-female mountings were observed.

Descriptors: copulation, mating behavior, mating preferences, age, dogs, estrus, mating behavior, India.

Pal, S.K. (2003). **Reproductive behaviour of free-ranging rural dogs in West Bengal,**

India. *Acta Theriologica* 48(2): 271-281. ISSN: 0001-7051.

NAL Call Number: 410 AC88

Abstract: Reproductive behaviour of free-ranging dogs *Canis familiaris* Linnaeus, 1758 was studied in a village in the state of West Bengal, India. Increased synchronized breeding was the most striking feature of this study. October (late monsoon) represented the peak period of mating for the feral dogs. Of all courting males, only 41% were observed to mount and copulate. On average, each male mounted 5.47 [plus or minus] 2.49 (mean [plus or minus] SD) times per hour. Of all mountings, only 10% were successful matings, ie copulatory ties. There was a negative correlation between the number of courting males and the number of successful copulations. The average duration of copulatory tie was 15.73 [plus or minus] 7.75 min. Several factors interrupting the duration of copulatory ties were identified. December was the peak period of pup rearing. Mean litter size was 5.70 [plus or minus] 2.03 with a male-biased sex ratio 1.41:1. Only a single annual breeding cycle recorded here differed from the previous studies on European and American dogs. Mothers spent most of the time with their pups at the dens during the early stage of rearing. The duration

of time spent at dens by mothers was minimum when the pups were highly mobile at the age of 10 weeks. The lactating mothers were observed to be more aggressive immediately following litter production. Typically, an old adult male remained near the den as a 'guard'.

Descriptors: dogs, reproductive behavior, West Bengal, Bhabanibera village, free ranging individuals.

Language of Text: English, Summary in English.

Palestrini, C. and M. Verga (2002). **Lo sviluppo comportamentale del cane. [Behavioural development of dogs.]**. *Summa* 19(2): 33-37.

Descriptors: animal behavior, dogs.

Language of Text: Italian, Summary in English.

Penaliggon, J., D.S. Mills, S.E. Heath, and L.J. Harrington (1997). **The use of nicergoline in the reversal of behavioural changes due to ageing in dogs: A multicentre clinical field trial**. In: *Proceedings of the First International Conference on Veterinary Behavioural Medicine, April 1-2, 1997, Birmingham, UK*, 37-41 p.

Descriptors: animal behavior, drug therapy, aging, dogs.

Pinson, D.M. (1997). **Myocardial necrosis and sudden death after an episode of aggressive behavior in a dog**. *Journal of the American Veterinary Medical Association* 211(11): 1371-1372. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Descriptors: sudden death, necrosis, aggression, abnormal behavior, case reports, myocardium, stress, dogs.

Pobel, T. and M. Caudrillier (1997). **Evaluation of the efficacy of selegiline hydrochloride in treating behavioural disorders of emotional origin in dogs**. In: *Proceedings of the First International Conference on Veterinary Behavioural Medicine, April 1-2, 1997, Birmingham, UK*, Universities Federation for Animal Welfare: Potters Bar, Herts, Great Britain, p. 42-50.

NAL Call Number: QL750.I67 1997

Descriptors: selegiline hydrochloride, efficacy, treatment, behavioral disorders, emotions.

Pobel, T. and P. Pageat (1997). **Applying gehan's strategy to the determination of an effective dose of (-)selegiline hydrochloride for treating behavioural problems of emotional origin in dogs**. *Journal of Veterinary Pharmacology and Therapeutics* 20 (Suppl. 1): 187-188. ISSN: 0140-7783.

NAL Call Number: SF915.J63

Descriptors: behavioral disorders, veterinary medicine, dosage, evaluation of dog's emotional disorder, Gehan's strategy, levo selegiline hydrochloride, monoamine

oxidase inhibitor drug, dogs, emotion.

Notes: Meeting Information: 7th European Association for Veterinary Pharmacology and Toxicology International Congress, Madrid, Spain; July 6-10, 1997.

Podberesck, A.L., P. Pageat, Y. Tessier, P. Neville, D.F. Horwitz, and P.A. Mertens (1998).

Verhaltenstherapie bei Hund und Katze, Teil 2. [Behavioural therapy in dogs and cats. II .]. *Tierärztliche Praxis* 26(6): 66-78.

NAL Call Number: SF603.V433

Descriptors: abnormal behavior, treatment, animal behavior, cats, dogs.

Language of Text: German.

Podberscek, A.L., Y. Hsu, and J.A. Serpell (1999). **Evaluation of clomipramine as an adjunct to behavioural therapy in the treatment of separation-related problems in dogs.** *Veterinary Record* 145(13): 365-369. ISSN: 0042-4900.

NAL Call Number: 41.8 V641

Abstract: 49 dogs showing signs of separation-related problems were randomly assigned to 1 of 3 groups: group A (15 dogs) received a placebo twice daily; group B (17) received clomipramine at 0.5 to 1.0 mg/kg twice daily; and group C (17) received clomipramine at 1.0 to 2.0 mg/kg twice daily. All the dogs also received behavioural therapy. Their owners were required to complete questionnaires about their dog's behaviour initially and 1, 4 and 8 weeks after the treatment with clomipramine began. Bipolar rating scales were used to monitor the frequencies of 'general', 'attachment-related' and 'separation-related' behaviours. Kruskal-Wallis tests and Kendall Rank correlations were used to determine any initial differences between the treatment groups, and the association between the initial scores and behavioural changes after 1 week of treatment with clomipramine. Extended Mantel-Haenszel statistics were used to evaluate the effects of clomipramine treatment vs. the placebo, and Page's test was used to assess the effectiveness of behavioural therapy on its own. There were no significant differences in the demographic characteristics of the owners of the dogs assigned to the 3 groups. The dogs differed slightly in age between groups, and the dogs in the 2 clomipramine-treated groups were reported as showing problems at a significantly earlier age than those in the placebo group. Clomipramine treatment had a sustained suppressive effect on the dogs' general activity levels, and a more modest suppressive effect on their attachment-related tendency to want much physical contact with their owners. The typical signs of separation-related behaviour problems were not significantly affected by treatment with clomipramine, but behavioural therapy on its own was highly effective in reducing behavioural problems.

Descriptors: therapy, behavioral changes, animal behavior, placebos, treatment, abnormal behavior, anxiety, drug therapy, antidepressants, neurotropic drugs, dogs.

Rooney, N.J., J.W.S. Bradshaw, and I.H. Robinson (2000). **A comparison of dog-dog and dog-human play behaviour.** *Applied Animal Behaviour Science* 66(3): 235-248.

ISSN: 0168-1591.

Online: [http://10.1016/S0168-1591\(99\)00078-7](http://10.1016/S0168-1591(99)00078-7)

NAL Call Number: QL750.A6

Abstract: In an observational study of dogs being walked by their owners (402), dogs which were walked together, and had opportunities to play with one another, played with their owners with the same frequency as dogs being walked alone. This finding was supported by a questionnaire survey of 2585 dog owners in which dogs in multi-dog households played slightly more often with their owners than dogs in single-dog households. The performance of dog-dog play does not, therefore, seem to suppress the dogs' motivation to play with their owners as would be predicted if they were motivationally interchangeable. In an experimental comparison of dog-dog and dog-human toy-centred play, the dogs were more likely to give up on a competition, to show and present the toy to their play partner, if that partner was human. When 2 toys were available, dogs playing with other dogs spent less time showing interest in both toys and possessed one of the toys for longer, than dogs playing with people. Overall, the dogs were more interactive and less likely to possess the object when playing with a person. It is concluded that dog-dog and dog-human play are structurally different, supporting the idea that they are motivationally distinct, and that there is no reason to assume that the consequences of dog-dog play can be extrapolated to play with humans.

Descriptors: behavior, play, motivation, toys, social behavior, dogs, human-animal interaction.

Rose, J.V., S. King, and C. Raymond (2004). **Differences in the levels of canine urinary 5-hydroxyindoleacetic acid between sexes, breeds and in relation to some behavioural traits.** *Animal Welfare* 13(Suppl.): S257-S258. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Descriptors: metabolism, neural coordination, breed differences, dominant behavior, gender differences, nervous behavior, behavioral traits.

Notes: Meeting Information: Universities Federation for Animal Welfare (UFAW) Symposium on Science in the Service of Animal Welfare, Edinburgh, UK; April 2-4, 2003.

Ruefenacht, S., S. Gebhardt Henrich, T. Miyake, and C. Gaillard (2002). **A behaviour test on german shepherd dogs: Heritability of seven different traits.** *Applied Animal Behaviour Science* 79(2): 113-132. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Descriptors: dogs, German Shepherd, animal behavior, temperament, aggression,

fearfulness, gender differences, heritability, phenotypic correlation, genetic correlation, hip dysplasia, selection intensity, animal breeding, selection criteria.

Savic Jevdencic, S., R. Ratajac, I. Stojanov, J. Likic, and D. Trailovic (2001). **Uticaj rata mart/juni 1999. Godine na ponasanje pasa u novom sadu. [Influence of air raids during spring 1999. On dog behaviour in Novi Sad]**. *Veterinarski Glasnik* 55(1-2): 79-85. ISSN: 0350-2457.

NAL Call Number: 41.8 J93

Descriptors: behavior, sociology, population studies, aggression, behavioral and mental disorders, air raids, behavior, fear, war.

Language of Text: Serbian.

Schmidt, W.D. (2002). *Verhaltenstherapie Des Hundes. [Behavioural Therapy in Dogs.]*, Schlutersche GmbH & Co. KG, Verlag und Druckerei: Hannover; Germany, 176 p.

Descriptors: abnormal behavior, inappropriate excretion, aggression, fears and phobias, behavioral therapy, case reports, dangerous dog legislation.

Language of Text: German.

Schmidt, W.D. (2003). **Einsatz von Dog Appeasing Pheromon (D.A.P.) in der Verhaltenstherapie beim Hund. [Use of dog appeasing pheromone (D.A.P.) in behavioural therapy of the dog.]**. *Praktische Tierarzt* 84(11): 824-835. ISSN: 0032-681X.

NAL Call Number: 41.8 P882

Abstract: Dog appeasing pheromone (D.A.P.) has a positive effect on many fear-related behavioural changes and can also be used in combination with other drugs used in behavioural therapeutical regimes. The effect of the pheromone is only visible after sometime, hence, it must be administered for a certain period before effects become evident. First experiences of the author showed that D.A.P. was effective in several cases of dogs with fear-related behavioural changes. In most of these cases, no signs of fear were present after 16 weeks of therapy. Most dog owners, however, want to give D.A.P. longer to prevent recurrence of fear. The article gives an introduction into the mechanisms of action of pheromones and describes some clinical cases.

Descriptors: animal behavior, fearfulness, pheromones, dogs.

Language of Text: German, Summary in English.

Schmutz, S.M. and J.K. Schmutz (1998). **Heritability estimates of behaviors associated with hunting in dogs.** *Journal of Heredity* 89(3): 233-237. ISSN: 0022-1503.

NAL Call Number: 442.8 Am3

Descriptors: dog behavior, genetics, breeding stock, heritability of traits, hunting behavior, North American Versatile Hunting Dog Association (NAVHDA), large Munsterlander.

- Schwartz, S. (1997). ***Canine and Feline Behavior Problems: Instructions for Veterinary Clients***. 2nd edition, Mosby: St. Louis, MO , 144 p. ISBN: 0815189095.
NAL Call Number: SF433.S38 1997
Abstract: Loose-leaf sheets are intended to be photocopied for handing to clients, to help them cope with behavioural problems in dogs and cats, such as aggression, predation and destructiveness. Training for obedience is included.
Descriptors: dogs, cats, behavior problems, diagnosis, treatment.
- Seksel, K., E.J. Mazurski, and A. Taylor (1999). **Puppy socialisation programs: short and long term behavioural effects.** *Applied Animal Behaviour Science* 62(4): 335-349. ISSN: 0168-1591.
NAL Call Number: QL750.A6
Descriptors: puppies, training of animals, learning, stimuli, temperament, breed differences, animal behavior, sex differences.
- Seksel, K. and W. Webber (1998). **Developmental aspects of behaviour: puppies and kittens.** *Veterinary Continuing Education* 185: 23-28. ISSN: 0112-9643.
Descriptors: puppies, kittens, behavior, postnatal development, young animals, cats, dogs.
- Shapovalova, K.B. (1998). **Participation of cholinergic systems of the shell and core parts of nucleus accumbens in regulation of instrumental behavior of dogs.** *Zhurnal Vysshei Nervnoi Deyatel'Nosti Imeni I. P. Pavlova.* 48(6): 1099-1103. ISSN: 0044-4677.
Abstract: Different effects of carbacholine microinjections in the core and shell parts of the n. accumbens were revealed in chronic experiments carried out in 6 dogs. Both kinds of microinjections led to unspecific and prolonged motor activation of the instrumental defensive reaction.
Descriptors: behavior, nervous system, neural coordination, defensive behavior.
Language of Text: Russian.
- Shapovalova, K.B. (1999). **Muscarinic receptors of the neostriatum and instrumental behavior in dogs.** *Society for Neuroscience Abstracts* 25(1-2): 1155. ISSN: 0190-5295.
NAL Call Number: QP351.S6
Descriptors: behavior, nervous system, muscarinic receptors, meeting abstract.
Notes: Meeting Information: 29th Annual Meeting of the Society for Neuroscience., Miami Beach, Florida, USA; October 23-28, 1999.
- Shepherd, K. (1999). **Behavioural changes following limb amputation in dogs.** *Veterinary Record* 144(7): 185-186. ISSN: 0042-4900.
NAL Call Number: 41.8 V641
Abstract: Anecdotal evidence for behavioural changes after limb amputation in dogs

is presented and the reasons for the changes are discussed.

Descriptors: surgery, animal behavior, amputation, limbs, dogs.

Shull, E.A. (2002). **Effects of an investigational food on age-related behavioural changes in dogs.** In: *Symposium on brain aging and related behavioral changes in dogs, January 11, 2002, Orlando, Florida, USA*, 17-19 p.

Descriptors: animal behavior, dog foods, nutrition, nutritive value, dogs.

Slabbert, J.M. and O.A.E. Rasa (1997). **Observational learning of an acquired maternal behaviour pattern by working dog pups: an alternative training method?** *Applied Animal Behaviour Science* 53(4): 309-316 . ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: German shepherd pups from untrained bitches and bitches trained in the location of narcotics were either separated from their mothers at 6 weeks (standard raised) or at 3 months of age (extended maternal care). Pups with extended maternal care which were allowed to observe their trained mothers locating and retrieving a sachet of odour-producing narcotic between the ages of 6 and 12 weeks performed the same task significantly better than non-exposed pups when tested at the age of 6 months, without further reinforcement during the interim period. This difference in performance was independent of the duration of maternal care or maternal origin of the pups and was attributed to differences in early experience acquired through observational learning.

Descriptors: behavior, veterinary medicine, acquired maternal behavior pattern, behavior, breed German shepherd, drug sniffing bitch, duration, maternal care, narcotics location training, observational learning, untrained bitch, working dog performance.

Spangenberg, E.M.F., L. Bjorklund, and K. Dahlborn (2006). **Outdoor housing of laboratory dogs: effects on activity, behaviour and physiology.** *Applied Animal Behaviour Science* 98(3/4): 260-276. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Laboratory dogs are mainly housed indoors and outdoor housing is often considered to be an insecure and uncontrollable alternative. This study aimed to assess the effects of outdoor housing of laboratory dogs on their general physiology, activity and activity-related behaviours. Eight male Beagles dogs were randomised into two groups and housed pair wise in indoor housing (IH, 11 m²), with or without access to an outdoor kennel (OH, 11 m²) during daytime. Activity (steps per hour), behaviour, and usage of outdoor facilities were recorded during 6 weeks in a cross-over design. In addition, the dogs were weighed once weekly and blood samples were taken three times a week to monitor physiological parameters for kidney, liver, pancreas and immune system functions. Four of the dogs were housed with access to outdoor kennel prior to the study and the other four had only been

housed indoors. The effect of housing type and previous housing was analysed. OH resulted in a significantly higher activity level, a higher frequency of moving and a lower frequency of passive behaviour. Alanine amino transferase, white blood cell count, granulocytes and neutrophils were significantly higher in IH, while cholesterol was lower, compared to OH, although all physiological parameters were kept within normal ranges. The dogs spent on average 162+or-11 out of 500 possible min/day outside and the average frequency of entering the outdoor kennel was 102+or-7 times per day. The duration of time spent outdoors was significantly longer during the second and third weeks of OH, compared to the first week. In conclusion, laboratory dogs can be housed with access to an outdoor kennel without altering their general physiology. Further, it clearly increased the voluntary activity and activity-related behaviours of the dogs and should therefore be beneficial for their welfare..

Descriptors: activity, alanine aminotransferase, behavior, animal experiments, physiology, Beagle, kidneys, laboratory animals, liver, neutrophils, pancreas.

Spooner, S. (1998). **La medecine du comportement en clientele canine et feline. [Abnormal behaviour in the dog and cat].** *Medecin Veterinaire Du Quebec* 28(2): 69-73.

NAL Call Number: SF602.M8

Descriptors: abnormal behavior, diagnosis, treatment, dogs, cats.

Language of Text: French.

Stafford, K. and W. Webber (1998). **Canine and feline behaviour: impact on society.** *Veterinary Continuing Education* 185: 113-119. ISSN: 0112-9643.

Descriptors: social behavior, animal behavior, human animal interactions, pets, dogs, cats.

Stephen, J.M. and R.A. Ledger (2004). **Temperament and stress in kennelled dogs.** *Animal Welfare* 13(Suppl.): S256. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Descriptors: animal care, behavior, philosophy and ethics, kennelling, applied and field techniques, battersea dogs' home, RSPCA, fear, rescue kennel, stress, temperament.

Notes: Meeting Information: Universities Federation for Animal Welfare (UFAW) Symposium on Science in the Service of Animal Welfare, Edinburgh, UK; April 2-4, 2003.

Stephen, J.M. and R.A. Ledger (2005). **An audit of behavioral indicators of poor welfare in kenneled dogs in the United Kingdom.** *Journal of Applied Animal Welfare Science* 8(2): 79-96. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: This survey-based study describes the prevalence and onset of behavioral indicators of poor welfare in dogs kenneled at United Kingdom rescue shelters. It

describes key factors contributing to individual variation in behaviors. At 8 rescue shelters, staff trained in the care of nonhuman animals recorded daily whether dogs in their care displayed each of 15 behaviors. The study originally involved 302 dogs; for the first 14 days, it monitored only 148 dogs daily. The study observed dogs for a maximum of 6 weeks from admittance, observing all 15 behaviors at least once during the first 2 weeks (n = 148). The proportion of dogs observed to perform each behavior differed within the sample. The most commonly observed behavior (24.3% of dogs) was excessive barking. The remaining 14 behaviors ranged from listlessness (20.3%) to repetitive tail-chasing (1.3%). Over the 6 weeks, the proportion observed to pace repetitively and wall bounce increased. The proportion who lacked appetite and displayed fear-associated behavior decreased. Breed differences, gender, and age partially explained variability in the onset and prevalence of behavioral indicators of poor welfare in kennelled dogs.

Descriptors: animal husbandry statistics and numerical data, behavior, animal physiology, animal welfare, dogs, england epidemiology, incidence, pedigree, prevalence, questionnaires, social isolation.

Suzuki, M. (2004). **Apparatus for determining dog's emotions by vocal analysis of barking sounds and method for the same.** *Official Gazette of the United States Patent and Trademark Office Patents* 1284(2) ISSN: 0098-1133.

Online: <http://www.uspto.gov/web/menu/patdata.html>

NAL Call Number: T223 .A21

Abstract: A method of determining a dog's emotions from its voice with objective supports. The invention follows the procedures of converting dog's voices into electrical audio signals, extracting characteristics in a time to frequency component relation map of the audio signals as a input voice pattern, storing in advance in memory reference voice patterns for various emotions that respectively represent characteristics of time to frequency component relation maps, comparing the input voice pattern with the reference voice patterns, and determining what a dog feels by declaring emotion of the particular reference voice pattern showing the highest correlation with the input voice pattern as a result of the comparison, and emotions represented by the reference voice patterns include "loneliness", "frustration", "aggressiveness", "assertiveness", "happiness", and "wistfulness", and hence, the present invention attains an effective way of determining dog's emotions with objective supports.

Descriptors: animal care, behavior, communication, equipment apparatus devices and instrumentation, voice input apparatus, computer software.

Takeuchi, Y., N. Ogata, K.A. Houpt, and J.M. Scarlett (2001). **Differences in background and outcome of three behavior problems of dogs.** *Applied Animal Behaviour Science* 70(4): 297-308. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: In order to characterize the three major behaviour problems, aggression toward owners, aggression toward strangers and separation anxiety, backgrounds of dogs and general outcomes of the behavioural treatments were analyzed retrospectively. There were 169 cases of aggression toward owners, 84 cases of aggression toward strangers and 78 cases of separation anxiety which did not overlap each other during the 5 years from 1993 to 1997 at Cornell University Animal Behaviour Clinic. Based on the case records, including discharge instructions, follow-up information, and pre-presentation questionnaires, several variables were compared among these three groups. The sexual status of these groups was not statistically different, although dogs with aggression toward owners had the highest proportion of males and there were more males in all behaviour groups than in the hospital population. Also, breed types were different among three groups with a significantly higher proportion of mixed breed dogs among dogs with separation anxiety and aggression to strangers as compared to dogs with aggression to owners and to the hospital population. A higher percentage of dogs in the separation anxiety group tended to live in apartments and to be disciplined only verbally by the owner than in the other two groups. Age differences were apparent among the three groups in relation to when the dogs were obtained, and the separation anxiety group was different from at least one of the other groups in the age when first obtained, the age the owners first noticed the problem, and the age of behavioural examination. Regarding the general outcome of the behavioural treatment, there were no significant differences among the behavioural groups with regards to the proportion of dogs reported improved. These results provide new characterizations of these three major behaviour problems.

Descriptors: dogs, animal behavior, behavior problems, aggressive behavior, social dominance, territoriality, anxiety, sex differences, breed differences, age differences, animal housing, training of animals, treatment, behavior modification, separation anxiety.

Tanabe, Y. and K. Yamazaki (2001). **Differences in behavioural characteristics of dog breeds based on a survey of consultations with clients. Emphasis on their suitability as family pets.** *Journal of Veterinary Medicine, Japan* 54(1): 9-14. ISSN: 0447-0192.

Descriptors: animal behavior, breed differences, dog breeds, pets, surveys, dogs.
Language of Text: Japanese.

Topal, J., A. Miklosi, and V. Csanyi (1997). **Dog-human relationship affects problem-solving behavior in the dog.** *Anthrozoos* 10(4): 214-224. ISSN: 0892-7936.
NAL Call Number: SF411.A57

Descriptors: dogs, animal behavior, human-animal interaction, learning.

Topal, J., A. Miklosi, V. Csanyi, and A. Doka (1998). **Attachment behavior in dogs (canis familiaris): a new application of ainsworth's (1969) strange situation test.** *Journal of Comparative Psychology* 112(3): 219-229. ISSN: 0735-7036.

NAL Call Number: BF671.J6

Abstract: Fifty-one owner-dog pairs were observed in a modified version of M. D. S. Ainsworth's (1969) Strange Situation Test. The results demonstrate that adult dogs (*Canis familiaris*) show patterns of attachment behavior toward the owner. Although there was considerable variability in dogs' attachment behavior to humans, the authors did not find any effect of gender, age, living conditions, or breed on most of the behavioral variables. The human-dog relationship was described by means of a factor analysis in a 3-dimensional factor space: Anxiety, Acceptance, and Attachment. A cluster analysis revealed 5 substantially different classes of dogs, and dogs could be categorized along the secure-insecure attached dimensions of Ainsworth's original test. A dog's relationship to humans is analogous to child-parent and chimpanzee-human attachment behavior because the observed behavioral phenomena and the classification are similar to those described in mother-infant interactions.

Descriptors: behavior, anxiety, behavioral and mental disorders, ainsworth's strange situation test, analytical method, acceptance, attachment behavior, dog owner interaction .

Turner, D.C. (1997). **Treating canine and feline behaviour problems and advising clients.** *Applied Animal Behaviour Science* 52(3-4): 199-204. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: In this introductory paper, pet behaviour counselling and therapy is considered. A case is made for cooperation between veterinarians and trained pet behaviour advisors and for qualification of professionals working in the field. The general causes of behaviour problems, as well as general principles of treatment, are considered. The importance of careful examination of the case in order to arrive at a differential diagnosis of the problem is illustrated by two examples: urine marking versus undesirable elimination in cats; and destructiveness related to separation anxiety versus boredom in dogs. Behaviour towards the client is also considered.

Descriptors: diagnosis, treatment, behavior, animal behavior, abnormal behavior, behavior patterns, pet behavior counseling, behavioral therapy, veterinary profession, pets, dogs, cats.

Turner, D.C. (2002). **Das verhalten von hunden und katzen. Beruehrungspunkte zwischen mensch und tier. [The behaviour of dogs and cats. Points of contact between man and animal.]** *Vierteljahrsschrift Der Naturforschenden Gesellschaft in Zuerich* 147(2): 51-61. ISSN: 0042-5672.

NAL Call Number: 508 Z8

Descriptors: domestication of dogs, breeding, breed differences, dogs, cats, behavior,

human-companion animal relationship.

Language of Text: German.

van Winkle Martinez, K.D. (2003). **Conditioning for adoptable behaviors in shelter dogs.**

Transactions of the Illinois State Academy of Science 96(Suppl.): 45. ISSN: 0019-2252.

NAL Call Number: 500 Il6

Descriptors: animal care, behavior, adoptable behavior, condition training, animal shelters, dogs.

Notes: Meeting Information: 95th Annual Meeting of the Illinois State Academy of Science, Normal, Illinois, USA; April 45, 2003.

Vandaele, E. and A. Girard (2001). **Pheromones des femelles allaitantes: les apaisines des mammifères contre le stress et l'anxiété .[Soothing pheromones (apaisins) from lactating mammals for treating stress and anxiety in dogs].** *Point Veterinaire* 32(217): 16-17. ISSN: 0335-4997.

NAL Call Number: SF602.P6

Descriptors: anxiety, pheromones, stress, treatment, dogs, feeding.

Language of Text: French.

Varshney, J.P. (2001). **Aberrant canine behaviours: an overview.** *Indian Journal of Veterinary Medicine* 21(1): 1-9. ISSN: 0970-051X.

NAL Call Number: SF703.I54

Abstract: Various behavioral problems in dogs such as aggression, aberrant sexual behaviors, urination and defecation are discussed. Also, the diagnosis and management of these behavioral disorders, through environmental alterations or physiologic manipulation, are described.

Descriptors: abnormal behavior, aggressive behavior, diagnosis.

Verga, M. (1997). **Comportamenti “disturbati” od “indesiderabili” nel cane domestico.**

Ia Parte: individuazione del problema ed ipotesi di intervento. [Abnormal or undesirable behaviour in dogs. I. Identification of the problem and possible therapeutic approaches.] *Praxis Veterinaria Milano* 18(2): 13-15.

Descriptors: dog diseases, therapy, diagnosis, abnormal behavior.

Language of Text: Italian.

Verga, M. and C. Palestrini (2001). **Disturbi comportamentali nel cane: il problema dell'aggressività.. [Behavioural disorders in dogs: aggression.]** *Summa* 18(7): 57-63.

Descriptors: abnormal behavior, aetiology, aggression, aggressive behavior, animal behavior.

Language of Text: Italian, Summary in English.

Virga, V., K.A. Houpt, and J.M. Scarlett (2001). **Efficacy of amitriptyline as a pharmacological adjunct to behavioral modification in the management of aggressive behaviors in dogs.** *Journal of the American Animal Hospital Association* 37(4): 325-330. ISSN: 0587-2871.

NAL Call Number: SF601.A5

Abstract: The efficacy of amitriptyline as a pharmacological adjunct to behavioural modification in the clinical management of aggressive behaviours in dogs in New York, USA was evaluated in 2 phases. 12 dogs presenting for aggressive behaviours were treated sequentially with amitriptyline (2 mg/kg body weight, per os [PO] bid) and a placebo for 4 weeks in a prospective, randomized, double-blind, placebo-controlled trial. Standardized protocols for behaviour modification were implemented throughout the trial. Owners maintained behavioural records and reported on the number of aggressive incidents as well as the dog's overall improvement at the end of each 4-week period. In the second phase (1998-99), 27 cases of dogs presenting with aggressive behaviours and treated with amitriptyline were reviewed, and clients were contacted to record each dog's response to treatment. Reports were compared to those for dogs receiving behaviour modification alone (i.e., placebo phase of prospective study). No significant difference was observed in the patients' responses to adjunctive amitriptyline versus behaviour modification alone.

Descriptors: aggressive behavior, animal behavior, antidepressants, combination therapy.

Wells, D. and P.G. Hepper (2000). **The influence of environmental change on the behaviour of sheltered dogs.** *Applied Animal Behaviour Science* 68(2): 151-162. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(00\)00100-3](http://dx.doi.org/10.1016/S0168-1591(00)00100-3)

NAL Call Number: QL750.A6

Descriptors: shelters, animal welfare, temperament, cages, consumer preferences, environment, enrichment, animal behavior, behavior change.

Wells, D.L. (2003). **Lateralised behaviour in the domestic dog, *Canis familiaris*.** *Behavioural Processes* 61(1-2): 27-35. ISSN: 0376-6357.

NAL Call Number: QL750.B4

Descriptors: paw use, domestic dogs, paw preference, sex differences.

Wells, D.L., L. Graham, and P.G. Hepper (2002). **The influence of auditory stimulation on the behaviour of dogs housed in a rescue shelter.** *Animal Welfare* 11(4): 385-393. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Abstract: This study explored the influence of five types of auditory stimulation (human conversation, classical music, heavy metal music, pop music, and a control) on the behaviour of 50 dogs housed in a rescue shelter. The dogs were exposed to

each type of auditory stimulation for 4 h, with an intervening period of one day between conditions. The dogs' position in their kennels (front, back), their activity (moving, standing, sitting, resting, sleeping), and their vocalisation (barking, quiet, other) were recorded over 4 h at 10 min intervals during each condition of auditory stimulation. The dogs' activity and vocalisation were significantly related to auditory stimulation. Dogs spent more time resting and less time standing when classical music was played than when any of the other stimuli were played. Exposure to heavy metal music encouraged dogs to spend significantly more of their time barking than did other types of auditory stimulation. Classical music resulted in dogs spending significantly more of their time quiet than did other types of auditory stimulation. It is suggested that the welfare of sheltered dogs may be enhanced through exposure to appropriate forms of auditory stimulation. Classical music appears particularly beneficial, resulting in activities suggestive of relaxation and behaviours that are considered desirable by potential buyers. This form of music may also appeal to visitors, resulting in enhanced perceptions of the rescue shelter's environment and an increased desire to adopt a dog from such a source.

Descriptors: animal care, behavior, philosophy and ethics, activity, animal welfare, auditory stimulation, captivity, moving, music, rescue shelter, resting, sitting, sleeping, standing, vocalization.

Wells, D.L., L. Graham, and P.G. Hepper (2002). **The influence of length of time in a rescue shelter on the behaviour of kennelled dogs.** *Animal Welfare* 11(3): 317-325. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Abstract: Animal rescue shelters provide temporary housing for thousands of stray and abandoned dogs every year. Many of these animals fail to find new homes and are forced to spend long periods of time in kennels. This study examined the influence of the length of time spent in a rescue shelter (< 1 month, 2-12 months, 1-5 years, > 5 years) on the behaviour of 97 dogs. The dogs' position in their kennels (front, back), their activity (moving, standing, sitting, resting, sleeping), and their vocalisation (barking, quiet, other) were recorded over a 4 h period at 10 min intervals. The dogs' behaviour was significantly related to the length of time the animals had spent in the rescue shelter. Dogs housed in the shelter for over five years spent more of their time at the back of their kennels, more time resting, and less time barking than dogs housed in the shelter for shorter periods of time. The age of the dog could not account for the significant results found, suggesting that environmental factors were responsible for the change in the dogs' behaviour. The findings suggest that lengthy periods of time spent in a captive environment may encourage dogs to behave in a manner that is generally considered unattractive by potential buyers. This may decrease the chances of such dogs being adopted, resulting in longer periods of time spent in the kennel environment and the possible development of

further undesirable behaviours.

Descriptors: animal behavior, environmental factors, kennels, shelters, stray animals, duration, physical activity, vocalization, rest, age differences, animal welfare.

Wells, D.L. and P.G. Hepper (1998). **A note on the influence of visual conspecific contact on the behaviour of sheltered dogs.** *Applied Animal Behaviour Science* 60(1): 83-88. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(98\)00146-4](http://dx.doi.org/10.1016/S0168-1591(98)00146-4)

NAL Call Number: QL750.A6

Descriptors: kennel design, housing, single housing, rescue shelter, behavior, visual contact, animal welfare, animal shelters.

Wells, D.L. and P.G. Hepper (2000). **Prevalence of behaviour problems reported by owners of dogs purchased from an animal rescue shelter.** *Applied Animal Behaviour Science* 69(1): 55-65. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(00\)00118-0](http://dx.doi.org/10.1016/S0168-1591(00)00118-0)

NAL Call Number: QL750.A6

Abstract: This study examined the prevalence of behaviour problems exhibited by dogs within 4 weeks of acquisition from a rescue shelter in Northern Ireland. 1547 people who had purchased a dog from a rescue shelter in Northern Ireland were sent a postal questionnaire designed to collect information on the behaviours exhibited by their dog within the first month of acquisition. 556 people responded to the survey, representing a response rate of 37%. The majority of respondents (68.3%) reported that their dog exhibited a behaviour problem, the most common being fearfulness. Most of those respondents (89.7%) who returned their dog to the shelter did so because the animal exhibited behaviour that they considered undesirable. Male dogs showed more unacceptable behaviours than females, specifically inter-male aggression, sexual problems and straying tendencies. More stray dogs displayed undesirable behaviour than unwanted, specifically straying tendencies. Puppies were less likely to exhibit unacceptable behaviours than juveniles or adults, particularly fearfulness, sexual problems and straying tendencies. More juvenile dogs showed excessive activity and excessive barking than puppies or adults. More adult dogs displayed aggression towards other dogs than juveniles or puppies. Findings indicate that dogs purchased from rescue shelters do exhibit behaviour problems that may lead to their return. The number of dogs admitted or returned to rescue shelters with behaviour problems may be reduced by raising public awareness regarding the value of behaviour therapy and introducing behaviour therapy schemes to rescue shelters.

Descriptors: aggression, fearfulness, puppies, animal behavior, behavior problems, fearfulness, sex differences, age differences, aggressive behavior, stray animals, animal welfare, behavior modification, vocalization, hyperactivity, abnormal behavior, northern Ireland, destructiveness.

Wells, D.L. and P.G. Hepper (2001). **The behavior of visitors towards dogs housed in an animal rescue shelter.** *Anthrozoos* 14(1): 12-18. ISSN: 0892-7936.

NAL Call Number: SF411.A57

Abstract: The behavior of visitors towards dogs housed in rescue shelters has been subject to little research. This study explored the behavior of 76 visitors to a rescue shelter in Northern Ireland as they toured the dogs' kennels. The number of dogs that visitors stopped to look at, the nature of all interactions that visitors initiated with the dogs and the outcome of the visitors' tour of the shelter, were examined. The influence of the visitors' sex and the size of the group touring the kennels, on the visitors' behavior was also explored. On average, the visitors stopped to look at 29% of the total number of dogs available for purchase. Dogs housed in cages closest to the shelter entrance were more likely to attract attention from the visitors than those housed further away. When they stopped to look at a dog, visitors spent an average of 70 seconds in front of the animal's cage. Thirty-one of the visitors initiated an interaction with a dog, which lasted for an average of 20 seconds. Three visitors purchased a dog at the end of their tour of the shelter. Individuals who purchased a dog spent significantly more time standing in front of their future pet's cage, and engaged in more interactions with this animal, than dogs that they did not purchase. The size of the group touring the shelter was significantly related to the visitors' behavior. Individuals touring the shelter alone stopped in front of more dogs' cages, spent more time in front of the dogs' enclosures, initiated more interactions, and purchased more dogs, than those visiting in pairs or groups. The visitors' sex was unrelated to their behavior. The findings suggest that visitors to rescue shelters only show an interest in a small proportion of dogs available for purchase. Elucidating exactly what factors influence visitors' perceptions of, and behavior towards, sheltered dogs may further our understanding as to why so many animals are overlooked for purchase every year.

Descriptors: animal housing, human behavior, kennels, shelters, visitors, dogs.

Wells, D.L. (2004). **A review of environmental enrichment for kennelled dogs, *Canis familiaris*.** *Applied Animal Behaviour Science* 85(3-4): 307-317. ISSN: 0168-1591.

Online: <http://dx.doi.org/10.1016/j.applanim.2003.11.005>

NAL Call Number: QL750.A6

Abstract: Domestic dogs can be housed in a variety of confined conditions, including kennels, shelters and laboratories. Concern over the well-being of dogs housed in human care has prompted much research in recent years into the enrichment of environments for kennelled dogs. This paper highlights the findings and recommendations arising from this work. Two types of general enrichment method are discussed, namely animate (i.e. enrichment through the provision of social contacts with conspecifics and humans) and inanimate (i.e. enrichment through the provision of toys, cage furniture, auditory and olfactory stimulation). The benefits and, where

relevant, possible disadvantages, to these various types of enrichment method are highlighted throughout.

Descriptors: animal care, behavior, animal welfare, animate enrichment, auditory stimulation, cage furniture, dog kennel, environmental enrichment, housing conditions, human contact, inanimate enrichment, olfactory stimulation, rescue shelter, social contact, toys.

Wickens, S., R. Hubrecht, T. Buckwell, D. Gregory, D. Robb, M. Wilsson, and I. Rochlitz (2001). **Report of the 2000 UFAW/RSPCA Carnivore Welfare Group meeting.** *Animal Technology* 52(1): 43-47. ISSN: 0264-4754.

NAL Call Number: QL55.I5

Descriptors: social behavior, aggression, housing, animal welfare, cages, laboratory animals, metabolism cages, carnivores, cats, dogs.

Wiesner, D. (1998). *Untersuchungen zum Verhalten des Hundes in Zusammenleben mit dem Menschen. Ein Beitrag zum Verständnis möglicher problematischer Entwicklungen sowie zu ihrer systematischen Erfassung. [Behaviour of dogs living in proximity to human beings, and the recording of behavioural problems.]*. Dissertation, Fachbereich Veterinärmedizin, Justus-Liebig-Universität: Giessen, Germany. 250 p.

Descriptors: animal behavior, recording, human-animal interaction, thesis.

Language of Text: German, Summary in English.

Wiesner, D. and H. Bostedt (2000). **Untersuchungen zum Verhalten des Hundes im Zusammenleben mit dem Menschen. Teil 1: Darstellung des methodischen Vorgehens und erste Ergebnisse. [Behaviour of dogs living with humans. Part 1: description of methods and first results.]**. *Tierärztliche Praxis* 28(4): 239-246. ISSN: 1434-1239.

NAL Call Number: SF603.V433

Descriptors: behavior, pets, data collection, recording, dogs.

Language of Text: German, Summary in English.

Wiesner, D. and H. Bostedt (2000). **Untersuchungen zum Verhalten des Hundes im Zusammenleben mit dem Menschen. Teil 2: Ergebnisse (Fortsetzung). [Evaluation of behaviour in companion dogs. Part 2: Results.]**. *Tierärztliche Praxis* 28(6): 399-404. ISSN: 1434-1239.

NAL Call Number: SF603.V433

Abstract: The prevalence of aggressive behaviour was studied in companion dogs. A relationship was found between the dog behaviour and owners treatment of dogs.

Descriptors: behavior, abnormal behavior, aggression, companion dogs, dog-owner interaction.

Language of Text: German, Summary in English.

Wilden, I. (1997). **Peculiarities in the social behaviour of African wild dogs (*Lycaon pictus*) and consequences for the management.** In: *Proceedings of the 2nd International Conference on Environmental Enrichment, August 21-25, 1995, Copenhagen*, Copenhagen Zoo: Frederiksberg, p. 260-267. ISBN: 8789431146.

Descriptors: *Lycaon pictus*, social behavior, housing, litter box lay out, implications for management in captivity, African wild dogs.

Wilsson, E. and P.E. Sundgren (1997). **The use of a behaviour test for selection of dogs for service and breeding. II. Heritability for tested parameters and effect of selection based on service dog characteristics.** *Applied Animal Behaviour Science* 54(2-3): 235-241. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: 1002 German shepherds and 467 Labrador retrievers, bred by the Swedish Dog Training Centre (SDTC) during 1983-91, and 308 German shepherds and 330 Labrador retrievers, from private breeders, were subjectively scored on behavioural traits. The score for each trait were pooled to give an index value for each dog. The heritability for this index value was 0.24. Heritability was also calculated for 4 factors (mental stability, willingness to please, friendliness and ardour) derived from a factor analysis of the test results. Heritability estimates for these 4 factors were 0.15-0.32. From 1986, all breeding animals at the SDTC were recruited from litters where the mean index value was above average. By 1992, the average index value for male German shepherds had increased from about 8 units to 9 units. German shepherds bred by the SDTC had higher index values than privately bred dogs. Ways in which to collect information about dog behaviour are discussed and it is suggested that a subjective evaluation of certain behaviour characteristics is superior to a factual description of reactions. [For Pt. I see pp.279-295 of volume 53 of the same journal].

Descriptors: German Shepherd, Labrador Retriever, genetics, heritability, selection, behavior, breeding, selection index, working animals, characteristics, animal behavior, behavior patterns, selection criteria.

Wilsson, E. and P.E. Sundgren (1998). **Behaviour test for eight-week old puppies - heritabilities of tested behaviour traits and its correspondence to later behaviour.** *Applied Animal Behaviour Science* 58(1-2): 151-162. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Play and exploratory behaviour, and behaviour when isolated (total of 10 tests) was tested in 630 German Shepherd puppies at 8 weeks of age. All dogs were also tested at 450-600 days of age using to regimen for selection of service dogs. Significant sex differences were found in 4 of the 10 puppy tests. Generally, female puppies showed significantly shorter fetch times, were more active and showed more exploratory behaviour than male puppies. There were also significant correlations between scores for different puppy tests. Correspondence of puppy test results to

adult performance was negligible and the puppy test was not useful in predicting adult suitability for service dog work. Heritability for scores in the puppy tests ranged from 0.20 for retrieving behaviour to 0.53 for activity. Maternal effects on the puppy test results were found when estimations based on sire and dam variances were compared.

Descriptors: temperament, genetics, ontogeny, puppies, traits, behavior, sex differences, heritability, maternal effects, physical activity, searching behavior, social behavior, play, performance testing, age differences, vocalization, fearfulness, human-animal interaction.

Wirant, S.C. and B. Mcguire (2004). **Urinary behavior of female domestic dogs (*Canis familiaris*): influence of reproductive status, location, and age.** *Applied Animal Behaviour Science* 85(3-4): 335-348. ISSN: 0168-1591.

Online: <http://dx.doi.org/10.1016/j.applanim.2003.09.012>

NAL Call Number: QL750.A6

Abstract: The urinary behavior of adult domestic dogs (*Canis familiaris*) is sexually dimorphic with respect to the posture (males lift a leg and females squat), frequency of urination (males urinate more frequently than females), and tendency to direct urine at specific objects in the environment (males are more likely than females to direct their urine). Such behavioral differences have led to the belief that urination functions largely, or exclusively, in elimination in female dogs, while having the additional function of scent marking in male dogs. In this study, we observed urinary behavior of six spayed and six non-estrous intact female Jack Russell Terriers during walks on and off their home area. The females ranged in age from 0.4 to 11.2 years. Frequency of urination was positively correlated with age, and females four or more years old directed the majority of their urinations at objects in the environment. Overall, females urinated more frequently and directed more of their urinations when walked off their home area than when walked within their home area. Spayed females were more likely than non-estrous intact females to ground-scratch following defecation; we detected a similar trend for ground-scratching after urination. There was, however, considerable variation among spayed females in the tendency to display ground-scratching behavior. Overall, the most common posture displayed by females while urinating was the squat-raise. Other postures, in order of their frequency of occurrence included squat, arch-raise, combination, and handstand. Females used the squat-raise and arch-raise postures more when off their home area than when on their home area. Overall, there was substantial individual variation among females in the postures used while urinating. Our data indicate that female urinary behavior varies with location and reproductive status, and that substantial individual differences exist among females for some patterns of behavior. Additionally, the large percentages of directed urinations by spayed (60.8%) and non-estrous intact females (56.7%) in our study suggest that urination in female dogs does not function solely in elimination,

but that it also has a significant role in scent marking, even when females are not in estrus.

Descriptors: veterinary medicine, age, home area, location, reproductive status, scent marking, urinary behavior, urinary frequency, urination direction, urination posture.

Wiseman, M.L., A.M. Nolan, J. Reid, and E.M. Scott (2001). **Preliminary study on owner-reported behaviour changes associated with chronic pain in dogs.** *Veterinary Record* 149(14): 423-424. ISSN: 0042-4900.

NAL Call Number: 41.8 V641

Abstract: This article presents and discusses the results of a study conducted on owners of 13 dogs diagnosed with chronic degenerative diseases. The owners were asked to assess and report changes in the dog's behaviour, attitude and demeanor. The reports of the owners were compared with the assessment of 6 veterinary surgeons regarding chronic pain. The data provided by the owners suggest that dog owners maybe valuable source of information about behavioural disturbances.

Descriptors: behavior, behavioral changes, pain, chronic, degenerative diseases.

Wisniewska, V. and G. Kulasek (1998). **Wybrane rodzaje zachowan u psow. [Selected behavioural patterns in dogs.]** *Magazyn Weterynaryjny* 7(1): 54-57. ISSN: 1230-4425.

Descriptors: aggression, animal behavior.

Language of Text: Polish.

Yamada, M. and M. Tokuriki (2000). **Spontaneous activities measured continuously by an accelerometer in Beagle dogs housed in a cage.** *Journal of Veterinary Medical Science* 62(4): 443-447. ISSN: 0021-5295.

NAL Call Number: SF604.J342

Abstract: Spontaneous physical activity for investigating behavioural drug toxicity was recorded continuously in 10 Beagle dogs housed in individual cages for 2 h using an accelerometer and a video camera. Gross differentiation of quantitative behavioural parameters was possible with the accelerometer alone when threshold and acceleration volume values were set at 0.10 G and _251. At these settings, the accelerometer revealed only movements of whole-body, whereas at threshold value of 0.02 G movements of individual body parts could be identified.

Descriptors: animal behavior, abnormal behavior, drug toxicity, instruments, dogs.

Yamamoto, T. (2003). **Unusual behaviour and a post-traumatic stress-like syndrome (PTSD) in dogs after a vigorous earthquake on a seismic scale of 5+.** *Journal of Veterinary Medicine, Japan* 56(7): 535-541. ISSN: 0447-0192.

Abstract: After an earthquake on 4th March 2001 in the Chugoku district in western Japan, 155 dogs were surveyed in and around Iwakuni city. Abnormal

behaviour was reported in 82 (53%) of the dogs, which showed trembling, howling, restlessness, scampering about, or wild excitement. Of the 82 dogs, 15 developed a post-traumatic stress disorder (PTSD) with persistent tremor, anorexia, intermittent howling, excitement, or repeated diarrhoea; these symptoms persisted for one year in one dog, 3-4 weeks in 9 dogs and less than 10 days in 5 dogs. The unusual behaviour started about an hour before the earthquake in 4 dogs.

Descriptors: abnormal behavior, animal behavior, earthquakes, dogs.

Language of Text: Japanese, Summary in English.

Yeon, S.C., H.N. Erb, and K.A. Houpt (1999). **A retrospective study of canine house soiling: diagnosis and treatment.** *Journal of the American Animal Hospital Association* 35(2): 101-106. ISSN: 0587-2781.

NAL Call Number: SF601.A5

Abstract: A retrospective study was conducted to determine the relative frequency and type of elimination problem seen in dogs at a university referral practice and to evaluate the efficacy of the suggested treatments. Cases presented to the Animal Behaviour Clinic at Cornell University between 1987 and 1996 were reviewed. Of 1173 cases, 105 (9%) were house-soiling cases. Of these cases, outcome information was obtained from 70. Within the diagnosis of house soiling, incomplete housebreaking (n=59; 84%) were the most frequent referral cases, of which 48 cases (81%; 95% confidence interval, 69% to 90%) improved. Separation anxiety was considered the second most common underlying cause (n=27; 39%), of which 85% (n=23; 95% confidence interval, 66% to 96%) improved. Behaviour modification was the most often suggested treatment (n=58), with 48 (83%) cases improving. Behaviour modification consisted of accompanying the dog to the preferred elimination area, rewarding the dog for eliminating there, and punishing the dog only when caught in the act of house soiling. It is concluded that correct house training, behaviour modification involving positive reinforcement, and appropriate punishment are essential to diminish house-soiling problems in dogs.

Descriptors: diagnosis, treatment, animal behavior, training of animals, urination, excretion, defecation, abnormal behavior, training of animals, motivation, diagnosis, age differences, sex differences.

Yonezawa, A., R. Ando, C. Watanabe, S. Furuta, M. Kutsuwa, S. Sakurada, and Y. Kimura (2001). **Alpha2-adrenoceptor antagonists: effects on ejaculation, penile erection and pelvic thrusting behavior in dogs.** *Pharmacology Biochemistry and Behavior* 70(1): 141-147. ISSN: 0091-3057.

NAL Call Number: QP901.P4

Abstract: We previously reported that systemic administration of yohimbine, an alpha2-adrenoceptor antagonist, exerts a biphasic effect (stimulating and suppressing) on ejaculation in dogs, when this function is analyzed using the amount

of ejaculated semen in response to genital stimulation. To clarify the effect of alpha2-adrenoceptor blockade on male sexual function, we investigated the effects of four selective alpha2-adrenoceptor antagonists, rauwolscine, idazoxan, RX821002 and mydaglizole, on sexual responses (ejaculation, penile erection and pelvic thrusting behavior) elicited by manual penile stimulation in dogs. Rauwolscine (intraperitoneal, 30 min before the testing) caused a biphasic effect on ejaculation; the amount of ejaculated semen produced by the stimulation was significantly increased by the lower doses (0.1 and 0.3 mg/kg), whereas it was decreased by the higher doses (1.0 and 2.0 mg/kg). The higher doses of rauwolscine also markedly inhibited both penile erection and pelvic thrusting behavior. Idazoxan and RX821002, at doses of 0.1 and 0.3 mg/kg, caused a significant increase in the amount of ejaculated semen without affecting other sexual functions. RX821002 (2.0 mg/kg), but not idazoxan (2.0 mg/kg), moderately inhibited both penile erection and pelvic thrusting behavior. Mydaglizole, a peripherally acting alpha2-adrenoceptor antagonist, did not affect the sexual responses at any doses (0.1-4.0 mg/kg). In the ejaculatory declining test, all alpha2-adrenoceptor antagonists (0.1 mg/kg), except for mydaglizole, completely prevented the decrease in ejaculatory capacity produced by antecedent ejaculation. These results indicate that, though the range of the effective dose is narrow, the alpha2-adrenoceptor antagonists that can block the central alpha2-adrenoceptors have the stimulatory effects on ejaculatory function. The difference of the sexual effects may be based on the action except for the alpha2-adrenoceptor blockade.

Descriptors: behavior, pharmacology, ejaculation, pelvic thrusting behavior, penile erection, sexual function. Ambrisko, T.D. and Y. Hikasa (2003). **The antagonistic effects of atipamezole and yohimbine on stress-related neurohormonal and metabolic responses induced by medetomidine in dogs.** *Canadian Journal of Veterinary Research* 67(1): 64-67. ISSN: 0830-9000.

NAL Call Number: SF601.C24

Abstract: This study aimed to compare the antagonistic effects of atipamezole (40, 120, and 320 mug/kg, IM), yohimbine (110 mug/kg, IM), and saline on neurohormonal and metabolic responses induced by medetomidine (20 mug/kg, IM). Five beagle dogs were used in each of the 5 experimental groups in randomized order. Blood samples were taken for 6 h. Medetomidine significantly decreased norepinephrine, epinephrine, insulin, and nonesterified fatty acid levels, and increased plasma glucose levels. Both atipamezole and yohimbine antagonized these effects. The reversal effect of atipamezole was dose-dependency, except on epinephrine. Yohimbine caused prolonged increases in plasma norepinephrine and insulin levels compared to atipamezole, possibly because of its longer half-life elimination. Only yohimbine increased the cortisol levels. Neither glucagon nor lactate levels changed significantly. Based on these findings, when medetomidine-induced sedation is antagonized in dogs, we recommend using atipamezole IM, from 2- to 6-fold the dose of medetomi-

dine, unless otherwise indicated.

Descriptors: anesthesiology, behavior, neural coordination, pharmacology, metabolic response, neurohormonal response, surgical stress, yohimbine, imidazoles, antagonists, medetomidine, blood composition, epinephrine, norepinephrine, blood glucose, insulin, blood lipids, fatty acids.

Breeding

He, Q., J.C. Fyfe, A.A. Schaffer, A. Kilkenney, P. Werner, E.F. Kirkness, and P.S. Henthorn (2003). **Canine imerslund-grasbeck syndrome maps to a region orthologous to hsa14q.** *Mammalian Genome* 14(11): 758-764. ISSN: 0938-8990.

NAL Call Number: QL737.R638M68

Abstract: Selective malabsorption of cobalamin (vitamin B12) accompanied by proteinuria, known as Imerslund-Grasbeck syndrome or megaloblastic anemia 1 (I-GS, MGA1; OMIM 261100), is a rare autosomal recessive disorder. In Finnish kindreds, I-GS is caused by mutations in the cubilin gene (CUBN), located on human Chromosome (Chr) 10. However, not all patients have CUBN mutations, and three distinct mutations in the amnionless gene, AMN, were very recently identified in patients from Norwegian and Israeli families. The present study demonstrates that in a large canine I-GS pedigree, the disease is genetically linked (peak multipoint LOD score 11.74) to a region on dog Chr 8 that exhibits conserved synteny with human Chr 14q. Multipoint analysis indicates that the canine disease gene lies in an interval between the echinoderm microtubule-associated, protein-like 1 (EML1) gene and the telomere. A single critical recombinant further suggests that the disease gene is between markers in EML1 and the G protein-coupled receptor (G2A) gene, defining an I-GS interval in the human genome that contains the AMN gene. Thus, these comparative-mapping data provide evidence that canine I-GS is a homologue of one form of the human disease and will provide a useful system for understanding the molecular mechanisms underlying the disease in humans.

Descriptors: canine Imerslund Grasbeck syndrome, whole genome scan, genetic techniques, laboratory techniques, mendelian inheritance.

Hoffmann, U., H. Hamann, and O. Distl (2003). **Genetische Analyse von Merkmalen der Leistungsprüfung für Koppelgebrauchshunde 2. Mitteilung: Unerwünschte Verhaltensmerkmale.** [Genetic analysis of traits of the working test for herding dogs 2nd communication: undesired behaviour traits.]. *Berliner Und Münchener Tierärztliche Wochenschrift* 116(3/4): 90-95. ISSN: 0005-9366.

NAL Call Number: 41.8 B45

Abstract: The objective of the present study was to analyse the occurrence of undesirable behaviour traits registered during sheep dog trials in order to evaluate the importance of genetic and environmental sources of variation and to draw conclusions for breeding purposes. The data analysed consisted of 2745 test results recorded at 48 sheep dog trials carried out in Germany from 1994 to 1998, which were attended by 337 sheep dogs. Variance components of undesirable behaviour traits

were estimated applying Restricted Maximum Likelihood methods. Additive genetic effects, permanent environmental effects of the animal and the effect of the handler were treated as random factors. Additionally, the linear multivariate animal model included the fixed effects of the age of the dogs at the sheep dog trial, sex, the level of difficulty of the exercises as well as the event itself, the starting number of the dog, the number of the dogs' tests at the particular event and the number of dogs presented on sheep dog trials by their handlers. The inbreeding coefficient was regarded as a linear covariate. The analyses were performed using all sheep dog trial classes and for each of the three classes separately. Age of the dog and starting number did not explain a significant proportion of variance for traits analysed, whereas the event of the sheep dog trial and partly the number of dogs per handler were of significant importance. The estimated heritabilities for the undesirable behaviour traits ranged from $h^2 < 0.001$ to $h^2 = 0.07$ with standard errors in the range between 0.001 and 0.06. The possibilities to select against undesired behaviour traits appear to be rather limited given the heritability estimates and the low number of progeny.

Descriptors: breed, sheep dogs, animal behavior, animal breeding, genetic analysis, genetic effects, heritability, inbreeding, traits.

Language of Text: German, Summary in English.

Housley, D.J.E., E. Ritzert, and P.J. Venta (2004). **Comparative radiation hybrid map of canine chromosome 1 incorporating snp and indel polymorphisms.** *Genomics* 84(2): 248-264. ISSN: 0888-7543.

NAL Call Number: QH447 .B63

Descriptors: molecular genetics, chromosome mapping, genetic techniques, laboratory techniques, genetic pool and sequence method, radiation hybrid mapping, evolutionary chromosomal breakpoint, genbank sequence data, gene order, genome sequence.

Kaufhold, J., H. Hamann, and O. Distl (2005). **Populationsgenetische Analyse der neu gezuchteten Hunderasse Elo. [Population genetic analysis of the dog breed Elo recently created.]** *Berliner Und Munchener Tierarztliche Wochenschrift* 118(1-2): 67-75. ISSN: 0005-9366.

NAL Call Number: 41.8 B45

Abstract: The breeding of the dog breed Elo was started in 1987. This dog breed was established by using 16 dogs of nine different breeds. All pedigree information of the dogs from 1987 to 2002 was included for the analysis of the proportion of genes of the different founder breeds, of the inbreeding coefficient, and relationship coefficients. Additionally, the number of died puppies per litter were investigated. The Eurasian dog breed contributed about 48% of the genes in the whole Elo dog population. Old English sheepdog and Chow Chow contributed about 23% and 10% of the genes. The other dog breeds were of minor importance. The mean inbreed-

ing and relationship coefficients of the whole Elo dog population were 12.04% and 19.22%, respectively. With the exception of 3.5% of animals, all Elo dogs were related to each other. The mean litter size was 6.39 puppies. The percentage of stillborn puppies per litter averaged at 9.47%. The inbreeding coefficients of the puppies and of their dams, the age of the sire and the dam at the time of birth of the puppies, the litter size, the puppies' year of birth and the proportion of genes of the Chow Chow showed a significant effect on the number of stillborn puppies per litter. The heritability for the frequency of stillborn puppies was estimated using a linear animal model. After transformation of the linear estimates to the underlying liability scale, the heritability amounted to $h^2 = 0.15$.

Descriptors: Elo breed, breeding, genetics, inbreeding coefficient, heritability, number of stillborn puppies.

Language of Text: German.

Kukekova, A.V., W. Wang, J.K. Lowe, E.A. Ostrander, G.D. Aguirre, and G.M. Acland (2003). **Exclusion of GNGT1 gene as a positional candidate for canine rcd2 disease.** In: *Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO) - Annual Meeting Abstract Search and Program Planner, May 4-8, 2003, Fort Lauderdale, FL, USA*, p. Abstract No. 2325.

Descriptors: rod cone dysplasia type 2 (rcd2), canine progressive retinal atrophy (PRA), dogs, molecular genetics, eye disease, genetic diseases, laboratory techniques.

McGreevy, P.D. and F.W. Nicholas (1999). **Some practical solutions to welfare problems in dog breeding.** *Animal Welfare* 8(4): 329-341. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Abstract: This paper reviews the history of established dog breeds, summarizes current health and welfare problems and makes suggestions for their resolution.

Descriptors: dog breeds, animal welfare, animal health, breeding programmes, selection, reviews, congenital abnormalities, dog diseases, dogs.

Nie, W., J. Wang, P. Perelman, A.S. Graphodatsky, and F. Yang (2003). **Comparative chromosome painting defines the karyotypic relationships among the domestic dog, Chinese raccoon dog and Japanese raccoon dog.** *Chromosome Research* 11(8): 735-740. ISSN: 0967-3849.

NAL Call Number: QH600 .C47

Abstract: The Chinese raccoon dog (*Nyctereutes procyonoides procyonoides*, $2n=54+2-3B$) and Japanese raccoon dog (*Nyctereutes p. viverrinus*, $2n=38+3-4B$) are two subspecies of the same species. The genome-wide comparative chromosome map between the Japanese raccoon dog and domestic dog (*Canis familiaris*) has been established by fluorescence in-situ hybridization with a set of domestic dog painting probes. In this study, we established the comparative chromosome map for the

Chinese raccoon dog and domestic dog. In total, dog probes specific for the 38 autosomes delineated 41 conserved chromosomal segments in the Chinese raccoon dog. Probes from dog chromosomes 1, 13 and 19 each painted two Chinese raccoon dog chromosome segments. Fifteen dog autosomal probes each hybridized to one Chinese raccoon dog chromosome, while each of the other dog autosomal probes painted to a single Chinese raccoon dog chromosomal arm. Dog X chromosome probe delineated the entire X chromosome of the Chinese raccoon dog; the dog Y chromosome probe hybridized to the pseudoautosomal region at the Xpter as well as the entire Y chromosome of the Chinese raccoon dog. Comparative analysis of the distribution patterns of conserved segments defined by dog paints in the genomes of the Chinese and Japanese raccoon dogs demonstrates that their differences in the karyotypes of these two subspecies could have resulted from eight Robertsonian translocations. The large difference in chromosome number between the Chinese and Japanese raccoon dogs suggests that they should be considered as two distinct species.

Descriptors: evolution and adaptation, molecular genetics, fluorescence in situ hybridization, genetic techniques, laboratory techniques, robertsonian translocation, comparative chromosome painting, karyotype evolution, karyotypic relationships.

Rijsselaere, T., A. Van Soom, D. Maes, and A. De Kruif (2004). **Age-related differences in canine semen quality parameters.** *Reproduction in Domestic Animals* 39(4): 264. ISSN: 0936-6768.

Descriptors: aging, animal care, reproductive system, reproduction, burker counting chamber, laboratory equipment, age related fertility, conception rate, litter size, spermatogenesis.

Notes: Meeting Information: 8th Annual Conference of the European Society for Domestic Animal Reproduction (ESDAR), Warsaw, Poland; September 23-25, 2004.

Ronsse, V., J. Versteegen, K. Onclin, F. Farnir, and H. Poulet (2004). **Risk factors and reproductive disorders associated with canine herpesvirus-1 (CHV-1).** *Theriogenology* 61(4): 619-636. ISSN: 0093-691X.

NAL Call Number: QP251.A1T5

Abstract: Canine herpesvirus-1 (CHV-1) is presumed to be enzootic in the dog population and is associated with fertility disorders and neonatal mortality. In this study we screened for risk factors affecting CHV-1 antibody titers and investigated the association between antibody titers and reproductive disorders. Therefore, serum from 545 dogs used for reproduction was analysed with an ELISA. Using a forward stepwise procedure and retaining significant risk factors ($P < 0.05$), best fitting multifactorial generalized linear model (glm) procedures were built for males and females. The effect of antibody titers on reproductive disorders was analysed with logistic regression analysis. The association between reproductive disorders and seroprevalence was analysed in chi-square analyses using contingency tables. In both sexes,

kennel cough and breeding management were found to have an impact on the CHV-1 antibody titer. Also, the influence of kennel cough on the antibody titer was correlated to the hygienic status of the kennel. In females, age, kennel size and cycle stage had an effect on CHV-1 antibody titers. Furthermore, kennel size and hygiene were found to be correlated. In males, mating experience had an impact on CHV-1 antibody titers. An association was observed between serological status and a history of abortion in bitches. In conclusion, this study suggests CHV-1 antibody titers may be affected by many factors, both on an environmental and host level. Therefore, interpretation of the serological status requires precaution. Furthermore, oronasal and venereal transmission seem to play a role in the spreading of infection.

Descriptors: animal care, female, canine herpesvirus 1 infection, viral disease transmission, kennel cough, breeding management, fertility, hygiene, kennel housing, mortality, venereal transmission.

Ruefenacht, S., S. Gebhardt Henrich, T. Miyake, and C. Gaillard (2002). **A behaviour test on german shepherd dogs: Heritability of seven different traits.** *Applied Animal Behaviour Science* 79(2): 113-132. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Descriptors: dogs, German Shepherd, animal behavior, temperament, aggression, fearfulness, gender differences, heritability, phenotypic correlation, genetic correlation, hip dysplasia, selection intensity, animal breeding, selection criteria.

Schmutz, S.M. and J.K. Schmutz (1998). **Heritability estimates of behaviors associated with hunting in dogs.** *Journal of Heredity* 89(3): 233-237. ISSN: 0022-1503.

NAL Call Number: 442.8 Am3

Descriptors: dog behavior, genetics, breeding stock, heritability of traits, hunting behavior, North American Versatile Hunting Dog Association (NAVHDA), large Munsterlander.

Shiboleth, M. (2004). **The Canaan dog: Expanding the gene pool from the desert.** *Israel Journal of Veterinary Medicine* 59(1-2): 28. ISSN: 0334-9152.

NAL Call Number: 41.8 R25

Descriptors: animal care, genetics, wildlife management, conservation, breeding, domestic environment, gene pool, natural habitat, wild population.

Tanabe, Y. and K. Yamazaki (2001). **Differences in behavioural characteristics of dog breeds based on a survey of consultations with clients. Emphasis on their suitability as family pets.** *Journal of Veterinary Medicine, Japan* 54(1): 9-14. ISSN: 0447-0192.

Descriptors: animal behavior, breed differences, dog breeds, pets, surveys, dogs.

Language of Text: Japanese.

Weber, M.P., D. Hernot, P.G. Nguyen, V.C. Biourge, and H.J. Dumon (2004). **Effect of size on electrolyte apparent absorption rates and fermentative activity in dogs.** *Journal of Animal Physiology and Animal Nutrition* 88(9-10): 356-365. ISSN: 0931-2439.
NAL Call Number: 389.78 Z3

Abstract: The objectives of the study were to assess overall electrolyte absorption capacity as well as fermentative activity in dogs varying in body size in order to verify whether these parameters can explain the poor faecal quality in large dogs. Four breeds of dogs were used: six Miniature Poodles (MP), six Standard Schnauzers (SS), six Giant Schnauzers (GS) and six Great Danes (GD). Net absorption rates of electrolytes were assessed by calculating the apparent digestibility of sodium and potassium and measuring their content in stool. Fermentative activity was calculated by measuring faecal concentrations of lactic acid and short-chain fatty acids. The results showed higher faecal concentrations of fermentation products and electrolytes as well as poorer digestibility of electrolytes in Giant Schnauzers and Great Danes. Strong positive correlations were found between these different parameters and stool quality (scores and moisture). Lower overall electrolyte absorption and higher fermentative activity could thus be factors capable of explaining poorer faecal quality in these two large dog breeds.

Descriptors: animal care, digestive system, ingestion and assimilation, body size absorption relationship, fecal quality, fermentation products.

Clinical and Laboratory Techniques

Battersby, I., K. Murphy, S. Tasker, and K. Papasouliotis (2006). **Retrospective study of fever in dogs: laboratory testing, diagnoses and influence of prior treatment.**

Journal of Small Animal Practice 47(7): 370-376. ISSN: 0022-4510.

NAL Call Number: 41.8 J8292

Abstract: Objectives: To analyse the demographic information of dogs referred for investigation of fever, to determine the usefulness of various diagnostic investigations and to assess the effect of treatment before referral on the presence of fever at referral, the duration of the investigation and the ability to reach a final diagnosis. Methods: The clinical records of 66 dogs, in which fever was part of the clinical signs documented by the referring veterinary surgeon, were reviewed. The effects of treatment 24 hours before referral on temperature at initial consultation and on time to diagnosis were evaluated. The effect of body temperature at initial consultation on cost and on time to diagnosis was also determined. The effect of insurance on costs incurred was assessed. The utility of different diagnostic investigations was recorded, and cases were classified according to the final diagnosis. Results: Only 34.8 per cent of dogs were diagnosed with immune-mediated disease, with most frequent diagnoses being steroid-responsive meningitis and polyarthritis. Treatment 24 hours before referral significantly increased the time to diagnosis ($P=0.004$) and affected the presence of fever at referral ($P=0.006$). Insurance status did not significantly affect cost incurred by the owner. Clinical Significance: This study documents a high incidence of immune-mediated disease in dogs referred for investigation of fever. It also documents a higher incidence of inflammatory central nervous system disease in febrile dogs than that reported previously. Of the diagnostic modalities employed in the majority of cases, radiography, cytology and bacteriological and fungal cultures (fluids/tissues) were the most useful. It is suggested that treatment is withdrawn or withheld before commencing diagnostic investigation of fever.

Descriptors: animal health, central nervous system, cytology, diagnosis, fever, immunological diseases, laboratory diagnosis, laboratory tests, medical treatment, radiography, small animal practice, veterinarians, dogs.

Dunphy, E.D., F.A. Mann, J.R. Dodam, K.R. Branson, C.C. Wagner Mann, P.A. Johnson, and M.A. Brady (2002). **Comparison of unilateral versus bilateral nasal catheters for oxygen administration in dogs.**

Journal of Veterinary Emergency and Critical Care. 12(4): 245-251. ISSN: 1534-6935.

NAL Call Number: SF778.J68

Abstract: Objective: To determine the effect of bilateral nasal oxygen supplementa-

tion on tracheal airway and arterial blood gas parameters. Design: Original research. Setting: Research Laboratory. Animals: Eight normal dogs. Interventions: None. Measurements: Intra-tracheal oxygen concentration and arterial oxygen partial pressure at three different oxygen flow rates given through either unilateral or bilateral nasal catheters. Main results: FIO₂ and PaO₂ were significantly increased with higher total oxygen flow rates, but the increase was the same whether the higher flow was delivered through one nasal catheter or divided and administered through two nasal catheters. The use of bilateral nasal catheters allowed a tracheal FIO₂ as high as 0.60 with minimal patient discomfort. Conclusions: The benefit of bilateral nasal catheters for oxygen supplementation is the ability to provide high total oxygen flows with decreased risk of patient discomfort. If the desired oxygen flow can be achieved with a unilateral nasal catheter, then the only benefit of bilateral catheters is increased patient comfort. The use of bilateral nasal oxygen catheters for oxygen supplementation can result in an FIO₂ that is high enough to produce oxygen toxicity with prolonged administration.

Descriptors: artificial respiration, blood gases, catheters, oxygen, toxicity, toxicology.

Garrido Farina, G.I. and M.A. Cornejo Cortes (2000). **Metodo de inclusion en parafina para diagnostico rapido por medio de microondas.** [A paraffin inclusion method for fast diagnosis using microwaves.]. *Veterinaria Mexico* 31(4): 375-379. ISSN: 0301-5092.

NAL Call Number: SF604.V485

Abstract: A protocol for fast embedded paraffin by a microwave process for histological and clinical samples for light microscopy was developed. Tissue specimens, dog's liver, polyp, skin and lung, cat's brain, kidney, and rat's ovary, uterine horn and artery were processed by using a standard household microwave oven (600 watts) at 75% power. This study was done using progressive alcohol solutions (dehydration), benzene-ethanol solutions (clearing) and paraffin for the infiltration. A group of specialists reviewed the material and photographs of the different organs processed with three different inclusion techniques. Results of the observation revealed: no difference between the histokinette (HK) and microwave oven. There were apparent morphological differences between the last two processes and the Robinson & Fayen technique (RF). This process could allow results to be reported within 30 min. after the specimens were evaluated in the laboratory. The morphology for the microwave-processed samples was better than the one observed by the fast diagnostic process technique of RF, and no discerning differences with the routine histokinette method were found.

Descriptors: microscopy, analytical methods, tissues, microwave ovens, sample processing.

Language of Text: Spanish, Summary in English.

Gauvin, D.V., L.P. Tilley, F.W. Smith Jr., and T.J. Baird (2006). **Electrocardiogram, hemodynamics, and core body temperatures of the normal freely moving laboratory beagle dog by remote radiotelemetry.** *Journal of Pharmacological and Toxicological Methods* 53(2): 128-39. ISSN: 1056-8719.

NAL Call Number: QP901.J6

Abstract: INTRODUCTION: The objectives of this study were to provide baseline normative values for circadian changes in the time-series data collected over the course of a normal day in laboratory-housed dogs and to assess the relative efficiency of standard correction formulas to correct for the variations in QT intervals and heart rate functions. METHODS: One hundred and twenty-three beagle dogs (65 M, 58 F) were equipped with radiotelemetry transmitters and continuously monitored, while freely moving in their home cages. Electrocardiograms (ECGs), hemodynamic parameters (diastolic, systolic, and mean arterial pressures) as well as core body temperatures were recorded for 22 h. RESULTS AND DISCUSSION: Blood pressures and core body temperatures demonstrated only very slight variations in their respective values over the 22 -h monitoring period. ECGs were measured by a computerized waveform analysis program and quantitative elements reported as RR, PR, QRS, and QT intervals. Little circadian rhythmicity was demonstrated in the ECG intervals. Standard study-specific correction formulas appeared to satisfactorily normalize (i.e., compensate for) the relationship between heart rate and QT intervals in these beagle dogs but elevated the values of the QTc as compared to the uncorrected QT intervals. In sharp contrast, a subject-specific correction method based on analysis of covariance produced a more linear function between heart rates and QT intervals and, more importantly, provided QTc values within the normal range of actual, recorded QT interval data.

Descriptors: body temperature physiology, physiology, electrocardiography instrumentation, hemodynamic processes physiology, telemetry instrumentation, thermography instrumentation, electrocardiography methods, reference values, telemetry methods, thermography methods.

Goossens, H.A.T., J.H.J. Maes, and A.E.J.M. Van Den Bogaard (2003). **The prevalence of antibodies against b. Burgdorferi, an indicator for lyme borreliosis in dogs? A comparison of serological tests.** *Tijdschrift Voor Diergeneeskunde* 128(21): 650-657. ISSN: 0040-7453.

NAL Call Number: 41.8 T431

Abstract: Five serological tests for the detection of IgM and IgG antibodies to *Borrelia burgdorferi*, the causative micro-organism of Lyme borreliosis (LB), were compared in 1177 sera from Dutch dogs: 401 healthy working hunting dogs, 100 healthy city pet dogs, 629 city dogs suspected of having LB with various clinical symptoms, and 47 hunting dogs with intermittent lameness. The results of the in-

house species-independent enzyme immunoassay (i.e. an EIA which can be used to test serum samples from different animal species) showed a strong agreement (kappa: 0.78-0.81) with those of an experimental and a commercially available EIA (Genzyme Virotech™, Ruesselsheim, Germany) for the detection of canine IgG antibodies to *B. burgdorferi*. Furthermore, the sensitivity of the in-house EIAs for the detection of antibodies to *B. burgdorferi* was independent of the antigenic heterogeneity, as demonstrated by the results of sera from dogs suspected of LB with various clinical symptoms: lameness (n=60), and neurological (n=60) and skin disorders (n=52). Because of its high sensitivity for IgM antibodies, the indirect assay (Dia-gast™, Pessac, France) proved to be an interesting tool for the detection of an acute Lyme infection in dogs. However, in this study a positive serological result could not be linked to any clinical symptom that has been related to LB in dogs. Results showed no difference in seroprevalence between dogs considered at high or at low risk of a *B. burgdorferi* infection. It was concluded that LB is an uncommon disease in the Dutch dog population despite the fact that many of Dutch dogs are infected with *B. burgdorferi*. Because of this low prevalence, the use of any immunoassay to support the clinical diagnosis of LB in dogs might be of limited value. Nevertheless, the species-independent EIA could be valuable in seroepidemiological studies when sera of several different animal species need to be tested.

Descriptors: infection, veterinary medicine, *Lyme borreliosis*, bacterial disease, diagnosis, symptom, diagast enzyme immunoassay, immunologic techniques, laboratory techniques, genzyme virotech enzyme immunoassay, in house species independent enzyme immunoassay, antigenic heterogeneity, method comparison, method sensitivity.

Gracner, D., L. Bedrica, D. Sakar, I. Harapin, V. Hahn, C. Labura, G. Greguric Gracner, M. Samardzija, and V. Kuticic (2004). **Haufigkeit des vorkommens der blutgruppe dea 1.1 Bei autochthonen kroatischen hunderassen: dalmatiner, istrianer bracke und kroatischer schafferhund.** [Prevalence of blood group DEA 1.1 in native Croatian dog breeds: Dalmatians, Istrian hound and Croatian sheepdog.]. *Tier-ärztliche Umschau* 59(8): 439-444. ISSN: 0049-3864.

NAL Call Number: 41.8 T445

Abstract: The present investigation includes 90 clinically healthy dogs of Croatian native breeds: 30 Dalmatians, 30 Istrian Hounds and 30 Croatian Sheepdogs. The goal of the study was to determine the prevalence of blood group DEA (Dog Erythrocyte Antigen) 1.1, which is the most immunogenic and therefore clinically most important for a dog's blood transfusion potential. The overall occurrence of DEA 1.1 was 84.4% in 90 tested dogs, while 15.6% dogs were DEA 1.1 negative. The frequency of DEA 1.1 was 87.8% in female (n=49) and 80.5% in male (n=41) dogs, a uniform distribution in both sexes. The prevalence of blood group DEA 1.1, within

tested breeds was 96.7% in Dalmatians, 90.0% in Croatian Sheepdogs and 66.7% in Istrian Hounds. The high frequency of DEA 1.1-positive dogs in three Croatian middle-large breeds (< 25 kg) indicated they are not suitable as blood donors. The hazard of transfusion reactions, caused by incompatibility of dog erythrocyte antigen is relatively small in Dalmatians, since only 3% of that breed is DEA 1.1-negative. The autoagglutination reaction was not detected in any of the 90 dogs studied, which makes determination of the blood group DEA 1.1 easier.

Descriptors: animal care, transport, circulation, transfusion, therapeutic, prophylactic techniques, blood group DEA 1.1, blood transfusion potential.

Language of Text: Croatian.

Griffin, A., M.B. Callan, F.S. Shofer, and U. Giger (2003). **Evaluation of a canine D-dimer point-of-care test kit for use in samples obtained from dogs with disseminated intravascular coagulation, thromboembolic disease, and hemorrhage.** *American Journal of Veterinary Research* 64(12): 1562-1569. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: Objective-To evaluate a canine D-dimer point-of-care (cD-d POC) test kit for use in healthy dogs and dogs with disseminated intravascular coagulation (DIC), thromboembolic disease (TED), and hemorrhage. Animals-12 healthy dogs, 18 dogs with DIC, 23 dogs with TED (19 acute and 4 chronic), and 18 dogs with hemorrhage. Procedure-The cD-d POC, canine D-dimer ELISA (cD-d ELISA), human D-dimer latex agglutination (hD-d LA), and fibrin degradation product (FDP) tests were performed on citrated plasma. Results-All healthy dogs had negative cD-d POC test results and mean cD-d ELISA value of 0.2 U/mL. All dogs with DIC had positive cD-d POC test results and mean cD-d ELISA value of 44 U/mL. Dogs with acute TED had a mean cD-d ELISA value of 34 U/mL, and 17 of 19 had positive cD-d POC test results. Mean cD-d ELISA value in dogs with hemorrhage was 14 units/mL, and 15 of 18 had positive cD-d POC test results. The cD-d ELISA values in dogs with hemorrhage were significantly higher than those of healthy dogs but lower than those of dogs with DIC and acute TED. The cD-d POC, cD-d ELISA, and hD-d LA tests were comparable in differentiating healthy dogs from dogs with DIC, acute TED, or hemorrhage and appeared to be superior to measurement of FDPs. Conclusions and Clinical Relevance-The cD-d POC test kit can be quickly and easily used and reliably detects dogs with DIC or acute TED. Positive results may also be seen in dogs with internal hemorrhage.

Descriptors: veterinary medicine, Disseminated Intravascular Coagulation (DIC), hemorrhage, canine D-dimer point-of-care test, fibrin degradation product test, test kit evaluation.

Groene, A., S. Fonfara, S. Markus, and W. Baumgaertner (1999). **Rt-pcr amplification of various canine cytokines and so-called house-keeping genes in a species-specific macrophage cell line (dh82) and canine peripheral blood leukocytes.** *Journal of Veterinary Medicine Series B* 46(5): 301-310. ISSN: 0931-1793.

NAL Call Number: 41.8 Z52

Abstract: Total ribonucleic acid (RNA) isolated from a continuous canine macrophage cell line (DH82) was used in reverse transcription polymerase chain reactions (RT-PCR) for the detection of transcripts of interleukin (IL)-8, -12, and tumour necrosis factor-alpha (TNF). Three different methods of RNA isolation (standard guanidinium-thiocyanate method with and without application of RNA matrix, and boiling) were used and compared in regard to RT-PCR results. The most suitable method was used to establish RT-PCR amplification of mRNA transcripts of IL-2, -10, and interferon-gamma (IFN) in RNA isolated from canine peripheral blood leukocytes. Integrity of RNA isolates was ensured by amplification of glyceraldehyde-3-phosphate dehydrogenase (GAPDH) or beta-actin. IL-8, -12, and TNF were amplified from RNA isolated by various methods. Use of guanidinium-thiocyanate with and without RNA matrix gave the most consistent results. Boiling as a mean of RNA isolation was quick and easy, but the RT-PCR results were extremely variable and multiple smaller bands were observed in the agarose gel in some preparations. IL-2, -10 and IFN transcripts were amplified from RNA isolated with guanidinium-thiocyanate from leukocytes stimulated with concanavalin A. DNase-treatment of RNA isolates was necessary to assure the destruction of genomic DNA and to avoid amplification of genomic sequences. This was especially a problem when using primers for GAPDH, beta-actin, IL-12, and TNF. Lack of DNase-treatment may lead to false positive results. This may be especially a problem when amplification of so-called house-keeping genes is used as internal control for RNA integrity. These findings demonstrated that isolation of total RNA with guanidinium-thiocyanate followed by DNase-treatment gave reliable and consistent results for detection of cytokine transcripts by RT-PCR in a canine macrophage cell line and canine peripheral blood leukocytes.

Descriptors: genetics, immune system, reverse transcription polymerase chain reaction, detection method.

Grosenbaugh, D.A., J.E. Gadawski, and W.W. Muir (1998). **Evaluation of a portable clinical analyzer in a veterinary hospital setting.** *Journal of the American Veterinary Medical Association.* 213(5): 691-694. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: Blood samples from 50 dogs, 50 cats and 28 horses, all healthy, were analysed on a portable clinical analyser (i-STAT) to determine concentrations of sodium, potassium, chloride, blood urea nitrogen (BUN), glucose, and ionized calcium and values of haematocrit (Hct), pH and blood gases (PCO₂, PO₂). Values

obtained were compared with those obtained from the same blood samples, using a standard automatic analyser (serum sodium, potassium, chloride, BUN, and glucose concentrations), a cell counter (Hct), a blood gas analyser (pH, PCO₂, PO₂), and a calcium-pH analyser (ionized calcium). Bias (mean difference between values obtained on the same sample by different methods) and variability (s.d. of differences) were determined for all values. Data were also subjected to Deming regression analysis. Correlation coefficients were >0.90 for all values except potassium and ionized calcium concentrations. Bias and variability were within clinically acceptable limits (+or-2 s.d.) for all but potassium, ionized calcium, and glucose concentrations and Hct. Species-dependent variability was observed for glucose concentration and Hct. Most differences between values obtained with the portable clinical analyser and standard clinical laboratory systems could be accounted for by differences in type of sample tested (blood vs. serum). It is concluded that the portable clinical analyser is suitable for point-of-care analysis in critical care situations and for routine blood biochemical analysis when extensive laboratory support is unavailable.

Descriptors: blood analysis, blood gases, blood chemistry, hematology, portable instruments, cats, dogs, horses.

Hall, E.J. (1999). **Clinical laboratory evaluation of small intestinal function.** *Veterinary Clinics of North America, Small Animal Practice* 29(2): 441-469. ISSN: 0195-5616 .

NAL Call Number: SF601.V523

Descriptors: small intestine, diarrhea, hematology, albumins, globulins, sodium, potassium, enzymes, cholesterol, feces, bacteriology, virology, cytology, intestinal absorption, diagnosis, bile, scintigraphy, biopsy, Giardia, Clostridium.

Hansen, B. and T. DeFrancesco (2002). **Relationship between hydration estimate and body weight change after fluid therapy in critically ill dogs and cats.** *Journal of Veterinary Emergency and Critical Care.* 12(4): 235-243. ISSN: 1534-6935.

NAL Call Number: SF778.J68

Abstract: Objective: To characterize the relationship between clinical estimates of hydration in dogs and cats admitted to an intensive care unit (ICU) and changes in their body weight following 24-48 hours of fluid therapy. Design: Outcome study. Setting: ICU at a veterinary teaching hospital (VTH) in North Carolina, USA, from May 2000 to May 2001. Animals: A total of 151 dogs and 42 cats with various medical disorders that have not undergone surgery within 48 hours of admission into the ICU were consecutively admitted into the study. Animals with any condition predisposing to excess fluid loss or retention were excluded: heart disease, sepsis, trauma, pancreatitis, pleural or pericardial effusion, ascites, and pathologic oliguria. Animals that acquired any of the following during the observation period were excluded: gastrointestinal fluid loss, oedema or diseases predisposing to oedema, oliguria, diuretic therapy, and body fluid drainage or haemorrhage. Fluid therapy was ordered based on

estimate of hydration at admission. Other treatments were not modified or withheld. Interventions: Physiologic data were collected at the time of admission and 24-48 hours later. Measurements and main results: Hydration was estimated on admission to the ICU using clinical judgement with no supporting laboratory data. Each admitting clinician used this estimate to plan fluid therapy. Fluid therapy was defined as the administration of any enteral or parenteral fluids as well as any decision to withhold fluids. Paired measurements taken on admission and at 24-48 hours included packed cell volume (PCV), total plasma solids (TS), and body weight. Amount and type of fluids or blood products administered were noted. Neither clinician estimates of dehydration nor baseline PCV or TS predicted clinically significant changes in body weight following fluid therapy, and there was no relationship between weight change and changes in PCV or TS. Conclusions: A clinical diagnosis of dehydration in our ICU does not predict weight gain following fluid therapy. Neither baseline PCV/TS nor changes in these measurements following 24-48 hours of fluid therapy predicted changes in body weight.

Descriptors: body weight, dehydration, fluid therapy, hemoglobin value, rehydration, cats, dogs.

Hawthorne, L. (2002). **A project to clone companion animals.** *Journal of Applied Animal Welfare Science* 5(3): 229-231. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Descriptors: genetics, molecular genetics, philosophy and ethics, reproduction, genetic abnormality, genetic disease, cloning, genetic techniques, laboratory techniques, code of bioethics, genetic savings & clone, missyplicity project, animal welfare, embryo viability, gene expression, overpopulation, research funding.

He, Q., J.C. Fyfe, A.A. Schaffer, A. Kilkenney, P. Werner, E.F. Kirkness, and P.S. Henthorn (2003). **Canine imerslund-grasbeck syndrome maps to a region orthologous to hsa14q.** *Mammalian Genome* 14(11): 758-764. ISSN: 0938-8990.

NAL Call Number: QL737.R638M68

Abstract: Selective malabsorption of cobalamin (vitamin B12) accompanied by proteinuria, known as Imerslund-Grasbeck syndrome or megaloblastic anemia 1 (I-GS, MGA1; OMIM 261100), is a rare autosomal recessive disorder. In Finnish kindreds, I-GS is caused by mutations in the cubilin gene (CUBN), located on human Chromosome (Chr) 10. However, not all patients have CUBN mutations, and three distinct mutations in the amnionless gene, AMN, were very recently identified in patients from Norwegian and Israeli families. The present study demonstrates that in a large canine I-GS pedigree, the disease is genetically linked (peak multipoint LOD score 11.74) to a region on dog Chr 8 that exhibits conserved synteny with human Chr 14q. Multipoint analysis indicates that the canine disease gene lies in an interval between the echinoderm microtubule-associated, protein-like 1 (EML1) gene and

the telomere. A single critical recombinant further suggests that the disease gene is between markers in EML1 and the G protein-coupled receptor (G2A) gene, defining an I-GS interval in the human genome that contains the AMN gene. Thus, these comparative-mapping data provide evidence that canine I-GS is a homologue of one form of the human disease and will provide a useful system for understanding the molecular mechanisms underlying the disease in humans.

Descriptors: canine Imerslund Grasbeck syndrome, whole genome scan, genetic techniques, laboratory techniques, mendelian inheritance.

Hillier, A., L.K. Cole, K.W. Kwochka, and C. Mccall (2002). **Late-phase reactions to intradermal testing with dermatophagoides farinae in healthy dogs and dogs with house dust mite-induced atopic dermatitis.** *American Journal of Veterinary Research* 63(1): 69-73. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: Objective: To determine the prevalence of late-phase reactions to intradermal testing with *Dermatophagoides farinae* in healthy dogs and dogs with atopic dermatitis and an immediate reaction to *D farinae*. Animals: 6 healthy dogs and 20 dogs with atopic dermatitis and immediate reactions to *D farinae*. Procedure: Intradermal tests were performed with *D farinae* at 1:1,000 wt/vol and 1:50,000 wt/vol concentrations, and skin reactivity was evaluated after 0.25, 6, and 24 hours. Serum *D farinae*-specific IgE antibodies were assayed. Extent of lesions (atopy index) and pruritus (visual analogue scale) were evaluated in dogs with atopic dermatitis. Results: Late-phase reactions were observed in healthy dogs at 6 hours (n=2 dogs) and 24 hours (1) with the 1:1,000 wt/vol concentration, and at 6 hours (1) and 24 hours (1) with the 1:50,000 wt/vol concentration of allergen. Late-phase reactions in healthy dogs were only observed in dogs with an immediate reaction to *D farinae*. Late-phase reactions were observed in 11 of 20 dogs with atopic dermatitis at 6 and 24 hours with the 1:1,000 wt/vol concentration and in 10 of 20 at 6 and 24 hours with the 1:50,000 wt/vol concentration of allergen. There was no difference in mean atopy index, mean visual analogue scale of pruritus, or mean serum *D farinae*-specific IgE concentration of dogs with a late-phase reaction, compared to dogs without a late-phase reaction. Conclusions and Clinical Relevance: Late-phase reactions may be observed after an immediate reaction to intradermal skin testing in healthy and allergic dogs but are more commonly observed in dogs with atopic dermatitis.

Descriptors: *Dermatophagoides farinae*, house dust mites, atopy, dermatitis, skin tests, allergic reactions, allergens, dosage, clinical aspects, IgE, immune system, integumentary system, veterinary medicine, house dust mite induced atopic dermatitis, genetic disease, immune system disease, integumentary system disease, lesion, injury, pruritus, atopy index, evaluation method, intradermal testing, detection method, visual analogue scale, evaluation method, late phase reactions.

Horand, F., C. Cretinon, F. Condevaux, and J. Descotes (2003). **Exploration of the phagocytic activity in rats, monkeys and dogs using two human kits.** *Toxicology Letters* 144(Suppl. 1): s34-s35. ISSN: 0378-4274.

NAL Call Number: RA1190.T62

Descriptors: burststest flow cytometric kit, phagotest flow cytometric kit, phagocytic activity, dogs, rats, monkeys.

Notes: Meeting Information: 41st Congress of the European Societies of Toxicology EUROTOX 2003 'Science for Safety', Florence, Italy; September 28-October 1, 2003.

Housley, D.J.E., E. Ritzert, and P.J. Venta (2004). **Comparative radiation hybrid map of canine chromosome 1 incorporating snp and indel polymorphisms.** *Genomics* 84(2): 248-264. ISSN: 0888-7543.

NAL Call Number: QH447 .B63

Descriptors: molecular genetics, chromosome mapping, genetic techniques, laboratory techniques, genetic pool and sequence method, radiation hybrid mapping, evolutionary chromosomal breakpoint, genbank sequence data, gene order, genome sequence.

Ikegami, K., K. Tagawa, M. Kobayashi, and T. Osawa (2003). **Prediction of in vivo drug release behavior of controlled-release multiple-unit dosage forms in dogs using a flow-through type dissolution test method.** *International Journal of Pharmaceutics (Kidlington)* 258(1-2): 31-43. ISSN: 0378-5173.

NAL Call Number: RS122.A1I5

Abstract: A newly designed flow-through type dissolution test method (FT method) was applied to predict in vivo drug release behaviors in dogs of controlled-release multiple unit dosage forms. The in vivo drug release behaviors were directly observed by measuring the residual amount of drugs in preparations recovered from the gastrointestinal (GI) tract after oral administration. Theophylline (TP), acetaminophen (AA), and phenylpropanolamine hydrochloride (PPA), which have different solubility, were used as model drugs. In vivo drug release behaviors in the gastrointestinal (GI) tract of dogs were similar to the results of the Wagner-Nelson method. In vivo release behaviors of TP and AA, until 2 h after administration, were well correlated to in vitro behaviors obtained by the paddle method at 100 rpm. However, the in vivo release rates of TP and AA were gradually decreased because of a lack of fluid in the lower region of the GI tract, their poor solubility, the difference of the release rates, and so on. Non-sink conditions, which would reflect TP and AA release in the lower region of the GI tract, were obtained by the FT method at a cell volume of 0.5 ml and a flow rate of 0.37 ml/h (TP), 0.48 ml/h (AA), respectively. The in vitro release profiles obtained by the FT method combining sink and non-sink conditions were similar to their in vivo profiles. On the other hand, in the case of PPA, the in vivo

release profiles were considerably similar to the in vitro ones obtained by both the paddle method and the FT method. In conclusion, the FT method combining sink and non-sink conditions will give a good in vitro/in vivo correlation regarding release behavior for controlled-release multiple unit dosage forms.

Descriptors: metabolism, pharmacology, Wagner-Nelson method, flow through type dissolution test method, in vivo drug release behavior prediction, drug dosage, drug release behavior, drug solubility, in vitro - in vivo correlation, non sink condition.

Irimajiri, M., M.A. Miller, M.A. Green, C.B. Jaeger, G.D. Hutchins, and A.U. Luescher (2003). **Breed dependence of regional cerebral metabolism in the dog assessed by 18f-fdg pet.** *Journal of Nuclear Medicine* 44(5 Suppl.): 218P-219P. ISSN: 0161-5505.

NAL Call Number: RM845.J78

Descriptors: compulsive disorder, positron emission tomography, magnetic resonance imaging, anatomical regions of interest, hearing, regional cerebral metabolism, breed dependence, vision .

Notes: Meeting Information: 50th Annual Meeting of the Society of Nuclear Medicine, New Orleans, LA, USA; June 21-25, 2003.

Iversen, L., A.L. Jensen, R. Høier, M. Skydsgaard, and F. Kristensen (1998). **Development and validation of an improved enzyme-linked immunosorbent assay for the detection of thyroglobulin autoantibodies in canine serum samples.** *Domestic Animal Endocrinology* 15(6): 525-536. ISSN: 0739-7240.

NAL Call Number: QL868.D6

Abstract: An ELISA to detect thyroglobulin autoantibodies (TGAB) in canine serum was developed and validated. The test result for each sample was derived from the optical density readings and expressed as an Ab-score (%) calculated from 3 in-house calibrators. The assay specifically detected TGAB as judged from lack of response in the assay after samples had been incubated with specific antigen. Intra- and interassay coefficients of variation ranged from 2.0 to 4.9% and from 4.6 to 9.9%, respectively. The detection limit, an Ab-score of 5.6%, was close to the median Ab-score of 10% observed in 132 healthy dogs. The median Ab-score of 11 dogs with primary hypothyroidism and lymphocytic thyroiditis, 35 dogs with skin diseases, and 63 dogs with non-thyroidal diseases was 340, 12 and 8%, respectively. The prevalence of TGAB in hypothyroid dogs with lymphocytic thyroiditis (sensitivity) was 91% (95% confidence limits: 59-99%). In dogs with dermatological diseases without lymphocytic thyroiditis the prevalence of TGAB was 3% corresponding to a specificity of 97% (95% confidence limit: 85-100%). In dogs with non-thyroidal diseases and healthy dogs the prevalence of TGAB was 5 and 6%, respectively. The diagnostic accuracy of serum TGAB was evaluated by subjecting the data from 11 dogs with

lymphocytic thyroiditis and 35 control dogs to receiver-operating characteristic curve analysis. The area (W) under the receiver-operating characteristic curve (W=0.966; 95% confidence limit 87-100%) was significantly higher than that of a worthless test (0.5), indicating that serum TGAB measurements distinguished between dogs with and without lymphocytic thyroiditis.

Descriptors: ELISA, thyroglobulin, autoantibodies, hypothyroidism, thyroid diseases, autoimmune diseases, dogs.

Jahr, J.S., F. Lurie, B. Driessen, J.A. Davis, R. Gosselin, and R.A. Gunther (2002). **The HemoCue, a point of care B-hemoglobin photometer, measures hemoglobin concentrations accurately when mixed in vitro with canine plasma and three hemoglobin-based oxygen carriers (HBOC).** *Canadian Journal of Anaesthesia* 49(3): 243-248. ISSN: 0832-610X.

Abstract: PURPOSE: Accuracy of measurement of low hemoglobin concentrations using the HemoCue, a B-hemoglobin photometer (HemoCue AB, Angelholm, Sweden) may exhibit significant variability. Infusion of hemoglobin-based oxygen carriers (HBOC) results in low concentrations of plasma hemoglobin. Our study assessed B-hemoglobin photometer measurement accuracy of three HBOC: (hemoglobin glutamer-200 (bovine; Oxyglobin, Biopure Corp., Cambridge, MA, USA); hemoglobin glutamer-250 (bovine; Hemopure, Biopure Corp, Cambridge, MA, USA), and hemoglobin-raffimer, (human; Hemolink, Hemosol, Inc., Toronto, Ontario, Canada). METHODS: In the laboratory, 45 split canine plasma samples were mixed with hemoglobin glutamer-200 (8.13, 16.25, 32.5 g x L(-1) concentrations), 45 samples were mixed with hemoglobin glutamer-250 (8.13, 16.25, 32.5 g x L(-1) concentrations), 45 with hemoglobin-raffimer (12.5, 25.0, 50.0 g x L(-1) concentrations), and measured. Plasma samples without HBOC served as control. Hemoglobin concentration was determined by a laboratory analyzer (Coulter Corporation, Hiafeah, FL, USA) and B-hemoglobin photometer (HemoCue, Angelholm, Sweden). Two independent technicians performed blinded sample measurements and randomly tested each sample five times. Results were analyzed according to Bland and Altman analysis. RESULTS: B-hemoglobin photometer demonstrated high repeatability for all three HBOCs. Repeatability coefficients were 0.37 g x L(-1) and 0.48 g x L(-1) for hemoglobin glutamer-200, 0.39 g x L(-1) and 0.4 g x L(-1) for hemoglobin glutamer-250 and 1.07 g x L(-1) and 0.85 g x L(-1) for hemoglobin-raffimer. An acceptable agreement was found between the B-hemoglobin photometer and the laboratory analyzer for all three HBOCs tested. CONCLUSION: The B-hemoglobin photometer accurately determined the concentration of three HBOC solutions dissolved in canine plasma.

Descriptors: hemoglobin, measurement, technology, photometer, canine plasma.

Johnson, P.A., F.A. Mann, J. Dodam, K. Branson, C. Wagner Mann, M.A. Brady, and E. Dunphy (2002). **Capnographic documentation of nasoesophageal and nasogastric feeding tube placement in dogs.** *Journal of Veterinary Emergency and Critical Care.* 12(4): 227-233. ISSN: 1534-6935.

NAL Call Number: SF778.J68

Abstract: Objective: To evaluate the ability of capnography to document proper placement of naso-oesophageal (NE) and nasogastric (NG) feeding tubes. This study was conducted in 3 phases. Phase I of this study was designed in order to test the efficacy of capnography to distinguish placement of a feeding tube in the alimentary tract versus the respiratory tract. Phase II was designed in order to document that carbon dioxide (CO₂) could be measured through a polyvinyl chloride (PVC) feeding tube. Phase III was performed in order to evaluate the technique of continuous monitoring during insertion of the feeding tube into the oesophagus and stomach as would be performed during a clinical-tube placement. Design: Prospective study. Setting: Research laboratory. Animals: 24 adult dogs. Interventions: In Phase I, sedated dogs were instrumented with an intratracheal catheter and an 8 French feeding tube placed nasally into the distal oesophagus and later advanced into the stomach. In Phase II, dogs were anaesthetized and an 8 French feeding tube was placed down the endotracheal tube, then into the oesophagus and later advanced into the stomach. In Phase III, sedated dogs were instrumented with an 8 French feeding tube inserted intranasally and then advanced to the level of the nasopharynx, distal oesophagus and, lastly, the stomach. Fluoroscopy was used in order to determine location of the feeding tube. Measurements and main results: Phase I measurements included respiratory rate and CO₂ from the trachea, oesophagus, and stomach and pH of gastric fluid sample. Phase II measurements included respiratory rate and CO₂ from the endotracheal tube, feeding tube in the endotracheal tube, feeding tube in the distal oesophagus, and feeding tube in the stomach. Phase III data collection included respiratory rate and CO₂ as the tube was passed through the nasal cavity, nasopharynx, oesophagus and stomach. Phase I fluid samples were collected from 5 of the 9 dogs and had pH values from 1.68 to 4.20. In both phases, values for the respiratory rate and CO₂ from the oesophagus and stomach were 0+or-0, significantly lower ($P<0.001$) than the values from the trachea. In Phase II, there was no significant difference between the respiratory rates ($P=0.886$) and CO₂ ($P=0.705$) readings obtained from the endotracheal tube compared to readings from the feeding tube in the endotracheal tube. In Phase III, there was a significant difference ($P<0.001$) between the respiratory rates and CO₂ readings obtained from the nasal cavity and the nasopharynx when compared to those readings obtained from the oesophagus and stomach. Measurement of CO₂ and respiratory rate resulted in a reading of 0 every time the feeding tube was in the oesophagus or stomach.

Descriptors: carbon dioxide, gastric juices, nasopharynx, esophagus, pH, respiration, respiration rate, stomach, techniques, trachea, tube feeding, dogs.

Kamonrat, P., D. Kaenkangploo, K. Phiwipha, and K. Duangdaun (2002). **Radiographic evaluation of coxofemoral joint laxity in dogs. Part I: New stress-radiographic positioning techniques.** *Thai Journal of Veterinary Medicine* 32(3): 47-59. ISSN: 0125-6491.

NAL Call Number: SF604.T43

Abstract: Two new stress-radiographic positioning techniques, namely 60° and 90° stress techniques, were introduced for quantifying hip joint laxity in dogs. The comparative characteristics and efficiency of these new techniques with angled hindlimbs were evaluated relative to the standard hip-extended radiographic technique. Forty, healthy, mongrel dogs with normal hip joint conformation were anesthetized and placed in dorsal recumbency before 3 radiographs of the standard, 60°, and 90° stress techniques were taken. For the 60° stress technique, hindlimbs were extended in parallel to each other at 60° angled to the table top and stifles were slightly rotated inward; femoral heads were manually pushed in a craniodorsal direction during exposure. For the 90° stress technique, femurs were positioned perpendicular to the table top; stifles were 90° flexed and adducted and femoral heads were manually pushed in a craniodorsal direction during exposure. The subluxation index (SI) and dorsolateral subluxation score (DLS score) were calculated from 3 radiographic views for both hip joints to quantitate the relative degree of joint laxity. Results of the study indicated that the 60° (SI=0.20±0.045; DLS score=62.5±7.96%) and 90° (SI=0.23±0.044; DLS score=61.2±9.47%) stress-radiographs yielded significantly ($p < 0.001$) higher degree of hip joint laxity than the standard technique (SI=0.17±0.035; DLS score=66.9±8.09%). The 90° stress technique is the most sensitive technique for measurement of the hip joint laxity as the SI values of the 90° stress technique were significantly ($p < 0.001$) higher than those of the 60° technique. The findings suggested that the 60° and 90° stress-radiographic positioning techniques, oriented similarly to those of a standing dog are more practical and efficient than the standard hip-extended technique for demonstrating maximal coxofemoral joint laxity in dogs with normal hip joint conformation. Both new techniques may prove useful in studies of hip joint laxity or subluxation related to canine hip dysplasia in more susceptible dogs.

Descriptors: diagnosis, femur, hip dysplasia, hips, joints animal, radiography, surgery, dogs.

Language of Text: Thai, Summary in English.

Kasakov, L. and M. Vlaskovska (2003). **The in vivo effect of intravenous atp on the activity of smooth muscles in the canine, rat and human stomach and intestine.**

Biomedical Research (Aligarh) 14(1): 75-79. ISSN: 0970-938X.

Descriptors: digestive system, ingestion and assimilation, muscular system, x ray imaging, imaging and microscopy techniques, laboratory techniques.

Khoo, S.M., D.M. Shackelford, C.J.H. Porter, G.A. Edwards, and W.N. Charman (2003).

Intestinal lymphatic transport of halofantrine occurs after oral administration of a unit-dose lipid-based formulation to fasted dogs. *Pharmaceutical Research* 20(9): 1460-1465. ISSN: 0724-8741.

NAL Call Number: RS1

Abstract: Purpose: To examine whether the small quantities of lipid present in unit-dose microemulsion formulations comprising medium- (C8-10) or long-chain (C18) glyceride lipids can stimulate the intestinal lymphatic transport of halofantrine (Hf), a model lymphatically transported drug. Methods: Hf (50 mg) was administered to thoracic lymph duct- and cephalic vein-cannulated fasted greyhound dogs. Drug was formulated as a single soft gelatin capsule containing approximately 1 g of a microemulsion concentrate based on either medium- or long-chain glycerides. Thoracic lymph was collected, and systemic plasma samples taken over 10 h postdose. Results: The extent of lymphatic transport of Hf after administration of the long-chain lipid formulation was high (28.3% of dose), and significantly higher than that seen after administration of the medium-chain formulation (5.0% of dose). Plasma levels of Hf were not significantly different across the two formulations when assessed by AUC_{0-10h}. Conclusions: This is the first study to demonstrate that the small amounts of lipid present within a single lipid-based dose form can support substantial intestinal lymphatic transport in the fasted state. Furthermore, microemulsions based on long-chain glycerides appear to be more effective with respect to lymphatic transport than the equivalent medium-chain formulation.

Descriptors: digestive system, ingestion and assimilation, pharmaceuticals, pharmacology, oral administration, fasting.

Kii, Y., K. Nakatsuji, I. Nose, M. Yabuuchi, M. Matsuda, and T. Ito (2003). **Effects of anti-histamines, ebastine and terfenadine, on electrocardiogram in conscious dogs and cats.** *Drug Development Research* 58(2): 209-217. ISSN: 0272-4391.

NAL Call Number: RM301.35.D78

Abstract: The purpose of this study was to evaluate the effects of ebastine and terfenadine on the electrocardiogram of conscious dogs and cats. In dogs, terfenadine at oral doses of 30 mg/kg twice a day for 7 days prolonged the electrocardiographic QT interval and the corrected QT (QT_c) interval on the seventh day, whereas the drug did not affect these parameters on the first day. Plasma concentrations of terfenadine and its active metabolite, fexofenadine, reached 306 and 8,541 ng/mL, respectively, on the seventh day. Ebastine at oral doses of 30 and 100 mg/kg once a day for 7 days was without effect on the QT and QT_c intervals, whereas the drug slightly shortened the RR interval. On the seventh day following the dose of 100 mg/kg, plasma concentrations of ebastine and its active metabolite, carebastine, reached 36 and 1,939 ng/mL, respectively. In conscious cats, terfenadine at oral doses of 30 mg/kg twice a day for 7 days prolonged the QT and QT_c intervals, QRS duration, JT and the cor-

rected JT intervals. Unexpectedly, terfenadine induced ventricular tachyarrhythmia and premature beats. On the other hand, ebastine at oral doses of 100 mg/kg once a day for 7 days was without effect on the electrocardiographic parameters in cats. These results suggest that the electrocardiographic changes indicative of the proarrhythmic potential of terfenadine can be evaluated in conscious dogs and especially in conscious cats by repeated oral administration, and that ebastine does not induce such changes.

Descriptors: cardiovascular system, transport and circulation, pharmacology, toxicology, electrocardiography, diagnostic techniques, qt interval.

Klukowska, J., I. Szczerbal, O. Rickli, M. Switonski, G. Dolf, and C. Schelling (2004).

Seven bacterial artificial chromosome-derived canine microsatellite-linking physical and genetic maps. *Animal Genetics* 35(3): 252-253. ISSN: 0268-9146.

Descriptors: molecular genetics, fish, fluorescence in situ hybridization, genetic techniques, laboratory techniques, pcr, polymerase chain reaction, linkage analysis, expected heterozygosity, polymorphism information content.

Klukowska, J., I. Szczerbal, A. Wengi Piasecka, M. Switonski, C. Schelling, A. Gmur, and G. Dolf (2004). **Characterization and mapping of canine microsatellites isolated from bac clones harbouring dna sequences homologous to seven human genes.** *Animal Genetics* 35(5): 404-407. ISSN: 0268-9146.

Abstract: Human primers specific for the genes LEP, HBB, PAX3, ESR2, TPH1, ABCA4 and ATP2A2 were used to identify clones in a canine BAC library. Subcloning of the positive BACs in plasmids, screening with microsatellite motifs and subsequent sequencing allowed for the identification of eight novel microsatellites. The presence of the gene of interest was confirmed by sequencing the polymerase chain reaction (PCR) products amplified in the positive BACs. Fluorescent in situ hybridization (FISH) using the positive BACs as probes allowed for the chromosomal localization of the insert DNAs in two canid species, dog (*Canis familiaris*) and red fox (*Vulpes vulpes*). The use of gene-associated microsatellites may accelerate the identification of candidate genes for phenotypic traits in linkage studies.

Descriptors: molecular genetics, fluorescent in situ hybridization, fish, genetic techniques, laboratory techniques, polymerase chain reaction, pcr, chromosomal localization, linkage study, phenotypic trait.

Klukowska, J., I. Szczerbal, A. Wengi Piasecka, M. Switonski, C. Schelling, A. Gmur, and G. Dolf (2004). **Identification of two polymorphic microsatellites in a canine bac clone harbouring a putative canine maoa gene.** *Animal Genetics* 35(1): 75-76. ISSN: 0268-9146.

Descriptors: genetics, polymerase chain reaction, genetic techniques, laboratory techniques.

Kobelt, A.J., P.H. Hemsworth, J.L. Barnett, and K.L. Butler (2003). **Sources of sampling variation in saliva cortisol in dogs.** *Research in Veterinary Science* 75(2): 157-161. ISSN: 0034-5288.

Abstract: The main advantage of collecting saliva cortisol as opposed to plasma cortisol is that it is non-invasive and therefore it is now widely used in stress measurement studies on farm animals and dogs. Although a plasma cortisol response to handling associated with blood collection generally occurs at 3 min from the commencement of handling, there is no information in the literature on the time course of the response of salivary cortisol concentration to handling. The aims of these experiments were to (1) determine if there is a response to up to 4 min handling that affects cortisol concentration in saliva and (2) determine the main causes of variation in saliva cortisol in dogs over time. In experiment 1, saliva was collected from six Kelpies at 0 min then 2, 3 or 4 min after the commencement of restraint. There was no handling effect found in up to 4 min sampling time. In experiment 2, saliva was collected from six Labrador Retrievers five times in 2 h (14:00-16:00), three days a week for four weeks. Some of the sources of variation in saliva cortisol over time included between dog variation that varied over a period of days and variation between occasions that affected the group of dogs as a whole.

Descriptors: dental and oral system, ingestion and assimilation, endocrine system, non invasive stress measurement, laboratory techniques, sampling variation, stress.

Kurien, B.T., N.E. Everds, and R.H. Scofield (2004). **Experimental Animal Urine Collection: A Review.** *Laboratory Animals* 38(4): 333-361. ISSN: 0023-6772.

NAL Call Number: QL55.A1L3

Abstract: Animal urine collection is a vital part of veterinary practice for ascertaining animal health and in scientific investigations for assessing the results of experimental manipulations. Untainted animal urine collection is very challenging, especially with small rodents, and is an almost impossible task under conditions of microgravity. The fundamental aspects of urine collection are: (1) ease of collection, (2) quality of sample, (3) prevention of contamination, (4) severity of procedures used, (5) levels of pain caused to the animal and (6) refinement of methods to reduce stress, pain or distress. This review addresses the collection of urine for qualitative and quantitative purposes from rodents, rabbits, felines, canines, avian species, equines, porcines, ungulates and certain non-human primates, with animal welfare in mind. Special emphasis has been given to rodents, canines and non-human primates, since they are the animals of choice for research purposes. Free catch (voluntary voiding), methods with mild intervention, surgical methods, modified restraint, cage and special requirement methods have been reviewed here. Efforts need to be taken to provide appropriate animal husbandry and to nurture the animals in as natural an environment as possible since experimental results obtained from these research subjects are, to a great extent, dependent upon their well-being. A continuous refinement in the

procedures for collecting urine from experimental animals will be the most efficient way of proceeding in obtaining pure urine specimens for obtaining reliable research data.

Descriptors: animal experiments, animal welfare, collection, laboratory animals, metabolism cages, methodology, reviews, sampling, stress, surgery, techniques, ungulates, urine, urine analysis, birds, cats, dogs, horses, pigs, primates, rabbits, rodents.

Kurth, T. (2001). **Postoperative Nachbehandlung bei caninen Mammatumoren mit biologischen Präparaten.** [Postoperative care of canine mammary tumours with biological preparations.]. *Biologische Tiermedizin* 18(1): 20-28. ISSN: 0723-6212. **NAL Call Number:** SF603.B54

Abstract: In this clinical study, the efficacy of an adjuvant therapy with the homeopathic combination remedies Para-Benzochinon-Injeel forte, Coenzyme compositum, Ubichinon compositum and Lymphomyosot after surgical resection of mammary tumours was examined in 34 dogs. The results concerning survival rate and the frequency of recurrence and metastasis were compared with data from literature, in which only a surgical resection of the tumours without adjuvant therapy was done. By means of the treatment described, the survival rate and the number of recurrences and metastasis were improved, compared with previous data.

Descriptors: homeopathy, mammary gland neoplasms, neoplasms, treatment, dogs.

Language of Text: German, Summary in English.

Lanevski, A. and K.J. Wardrop (2001). **Principles of transfusion medicine in small animals.** *Canadian Veterinary Journal* 42(6): 447-454. ISSN: 0008-5286. **NAL Call Number:** 41.8 R3224

Abstract: The purpose of this review was to provide the reader with an updated overview of small animal transfusion medicine, and an approach to integrating it into private practice, based on a review of the veterinary and human literature spanning the last 3 decades. Electronic, online databases that were searched included CAB International and Medline; multiple keywords or subject headings were searched that were appropriate to each of the sections reviewed: canine and feline blood groups, blood-typing and crossmatching, donors, blood collection, storage, blood components, blood transfusion, blood component therapy, blood substitutes, and adverse reactions. The safe use of blood component therapy requires knowledge of blood groups and antibody prevalence, and knowledge of the means to minimize the risk of adverse reactions by including the use of proper donors and screening assays that facilitate detection of serological incompatibility. The 2 assays available to the practitioner are crossmatching, which is readily done in-house, and blood typing. Blood typing is available in the form of a commercial testing kit, through use of purchased reagents, or via a request to an external laboratory. The risk of potentially fatal adverse reactions is higher in cats than in dogs. The decision to transfuse and the type of

product to administer depend on several factors, such as the type of anemia and the size of the animal. In conclusion, transfusion medicine has become more feasible in small animal practice, with improved access to blood products through either on-site donors, the purchase of blood bank products, external donor programs, or the availability of blood component substitutes.

Descriptors: literature reviews, canine, feline, small animal, blood-typing and cross-matching, blood collection, blood transfusion.

Langova, V., A.J. Mutsaers, B. Phillips, and R. Straw (2004). **Treatment of eight dogs with nasal tumours with a alternating doses of doxorubicin and carboplatin in conjunction with oral piroxicam.** *Australian Veterinary Journal* 82(11): 676-680. ISSN: 0005-0423.

NAL Call Number: 41.8 Au72

Abstract: Objective To determine the efficacy and toxicity of chemotherapy in the treatment of canine nasal tumours. Design Retrospective clinical study Procedure Eight dogs with histologically confirmed nasal tumours were staged by means of complete blood count, serum biochemical analysis, cytological analysis of fine needle aspirate of the regional lymph nodes, thoracic radiographs and computed tomography scan of the nasal cavity. All dogs were treated with alternating doses of doxorubicin, carboplatin and oral piroxicam. All dogs were monitored for side effects of chemotherapy and evaluated for response to treatment by computed tomography scan of the nasal cavity after the first four treatments. Results Complete remission was achieved in four dogs, partial remission occurred in two dogs and two had stable disease on the basis of computed tomography evaluation. There was resolution of clinical signs after one to two doses of chemotherapy in all dogs. Conclusions This chemotherapy protocol was efficacious and well tolerated in this series of eight cases of canine nasal tumours.

Descriptors: pharmacology, toxicology, tumor biology, nasal tumor, neoplastic disease, respiratory system disease, therapy, chemotherapy, complete blood count, diagnostic techniques, computed tomography scan, imaging and microscopy techniques, laboratory techniques, cytological analysis, serum biochemical analysis, thoracic radiography.

Lehtonen, S., E. Lehtonen, K. Kudlicka, H. Holthofer, and M.G. Farquhar (2004). **Nephrin forms a complex with adherens junction proteins and cask in podocytes and in madin-darby canine kidney cells expressing nephrin.** *American Journal of Pathology* 165(3): 923-936. ISSN: 0002-9440.

NAL Call Number: 448.8 J825

Abstract: Mutations in the NPHS1 gene encoding nephrin lead to congenital nephrotic syndrome of the Finnish type. Nephrin is a key component of the glomerular slit diaphragms between epithelial foot processes, but its role in the pathogenesis

of this disease is poorly understood. To further clarify the molecular mechanisms involved we investigated the interactions between nephrin and other components of the foot processes and filtration slits, especially adherens junction proteins, and searched for novel nephrin interacting proteins. Using co-immunoprecipitation and pull-down assays we show here that nephrin forms a multiprotein complex with cadherins and p120 catenin and with three scaffolding proteins, ZO-1, CD2AP, and CASK, in kidney glomeruli and when expressed in Madin-Darby canine kidney cells. CASK was identified as a novel binding partner of nephrin by mass spectrometry and was localized to podocytes; in the glomerulus. CASK is a scaffolding protein that participates in maintenance of polarized epithelial cell architecture by linking membrane proteins and signaling molecules to the actin cytoskeleton. Our results support a model whereby the glomerular slit diaphragms are composed of cell adhesion molecules of the immunoglobulin and cadherin superfamilies that are connected to each other and to the actin cytoskeleton and signaling networks via the cytoplasmic scaffolding proteins CASK, CD2AP, and ZO-1.

Descriptors: cell biology, electrophoretic techniques, co-immunoprecipitation, fluorescence activated cell sorting, immunoblotting, immunoelectron microscopy, indirect immunofluorescence, mass spectrometry, pull down assay, genetic techniques, sucrose velocity gradient centrifugation.

Leitner, M., J.E. Aurich, G. Galabova, C. Aurich, and I. Walter (2003). **Lectin binding patterns in normal canine endometrium and in bitches with pyometra and cystic endometrial hyperplasia.** *Histology and Histopathology* 18(3): 787-795. ISSN: 0213-3911.

Abstract: Cystic endometrial hyperplasia (CEH) and pyometra in the bitch are dioestral syndromes, supposed to be caused by hormonal disturbances and changes in endometrial steroid hormone receptor levels. Histologically, the endometria show cystic dilated glands and, if bacteria succeed in invading the uterus, pyometra may develop in the following metoestrus. In this study, lectin histochemistry was performed on paraffin sections to compare carbohydrate expression of uterine glands and surface epithelium in healthy dogs and in dogs with CEH and pyometra. Lectin binding is a useful tool to identify glycoconjugates, especially of the glycocalyx, which has essential functions in the endometrium during reproduction. Uterine tissue was obtained from 18 healthy bitches in metoestrus or anoestrus and 18 bitches with a clinical diagnosis of CEH or pyometra. Normal endometria showed cycle-dependent changes in SBA, PNA, HPA and UEA binding during metoestrus and anoestrus. LCA did not show cycle-dependent changes and WGA bound to Golgi regions in the apical parts of surface epithelial cells only in metoestrous. Endometria with inflammatory alterations lost cycle-specific lectin binding patterns and, with increasing severity of pathological changes, showed a marked decrease in binding intensity to the glandular and surface epithelial glycocalyx and secretions. In dogs with CEH,

unaltered glands with generally strong lectin binding to the glycocalyx and Golgi regions were found adjacent to altered glands. The decrease of lectin binding in pyometra cases is supposed to be a result of glandular exhaustion after cystic hyperplasia. In addition, bacterial adhesion to sugar residues on the uterine surface epithelium might impede lectin binding.

Descriptors: reproduction, cystic endometrial hyperplasia, pyometra, reproductive system disease.

Lowery, T., S. Dinterman, K. Weigand, B. Brown, and L. Walker (2001). **A cart cage for transferring macaques, capuchins, and small dogs.** *Lab Animal* 30(1): 45-46. ISSN: 0093-7355.

NAL Call Number: QL55.A1L33

Descriptors: monkeys, transport of animals, cage design, wheels, *Macaca mulatta*, *Cebus apella*, dogs, cage size, animal welfare, safety at work, animal use refinement.

Lurie, F., J.S. Jahr, J.M. Davis, Z. Umarova, and B. Driessen (2002). **Reliability of plasma hemoglobin concentration measurement using the HemoCue(R), a point of care hemoglobin photometer, after infusions of a hemoglobin-based oxygen carrier (hboc).** In: *2000 Annual Meeting of the American Society of Anesthesiologists, Abstracts of Scientific Papers, October 16-18, 2000, San Francisco, CA, USA*, p. Abstract No. 408.

Online: <http://www.asa-abstracts.com>

Descriptors: HemoCue(R), coulter analyzer, medical equipment, hemocue photometer, plasma hemoglobin concentration measurement.

Lurye, J.C., E.N. Behrend, and R.J. Kemppainen (2002). **Evaluation of an in-house enzyme-linked immunosorbent assay for quantitative measurement of serum total thyroxine concentration in dogs and cats.** *Journal of the American Veterinary Medical Association* 221(2): 243-249. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: Objective: To compare serum total thyroxine (T₄) concentrations obtained with an in-house ELISA and a validated radioimmunoassay (RIA). Design: Laboratory trial. Sample Population: 50 canine and 50 feline serum samples submitted for measurement of total T₄ concentration with the RIA; samples were selected to represent a wide range of concentrations (< 6 to 167 nmol/litre). Procedure: Results of the ELISA and RIA were compared by calculating correlation coefficients, examining linearity, determining bias and precision and evaluating clinical interpretations. Results: Correlation coefficients for results of the 2 methods were 0.84 for the canine samples and 0.59 for the feline samples. Examination of bias plots revealed large variations in ELISA results, compared with RIA results. For the feline samples, the ELISA consistently overestimated total T₄ concentration obtained with the RIA. When results of the 2 methods were categorized (low, borderline low, normal,

borderline high or high), results were discordant for 24 (48%) and 29 (58%) of the canine samples and for 18 (36%) and 28 (56%) of the feline samples (depending on whether borderline high ELISA results were considered normal or high). Reliance on results of the ELISA would have led to inappropriate clinical decisions for 31 (62%) canine samples and 25 (50%) feline samples. The ELISA coefficients of variation for the pooled canine and feline samples were 18 and 28%, respectively. Conclusions and Clinical Relevance: Substantial discrepancies between ELISA and RIA results for T4 concentrations were detected. Thus, we conclude that the in-house ELISA kit is not accurate for determining serum total T4 concentrations in dogs and cats.

Descriptors: blood chemistry, diagnosis, diagnostic techniques, ELISA, radioimmunoassay, thyroxine, cats, dogs .

Marassi, C.D., I.A. Moraes, and W. Lilenbaum (2004). **Comparacao entre antígenos de b. Canis e de b. Ovis para o diagnostico da brucelose canina em testes de imunodifusao em gel-agarose. [Comparison between a B. canis and B. ovis antigens for the diagnosis of canine brucellosis on gel-agarose immunodiffusion tests.]**. *Revista Brasileira De Reproducao Animal* 28(2): 103-107. ISSN: 0102-0803.

NAL Call Number: QP251.R48

Descriptors: *B. canis*, *B. ovis*, gel-agarose immunodiffusion (AGID) test, brucellosis diagnosis, bacterial disease, reliability of tests.

Language of Text: Portuguese.

Masterson, T.J., P.V. Loubert, and D. Schmitz (2004). **Angular dimensions are a good predictor of functional joint motion.** *American Journal of Physical Anthropology Supplement* 38: 143.

Descriptors: angular dimensions, joints, imaging, experimental surgical techniques, health care implications, meeting abstract.

Notes: Meeting Information: Seventy-Third Annual Meeting of the American Association of Physical Anthropologists, Tampa, FL, USA; April 14-17, 2004.

Mealey, K.L. and S.A. Bentjen (2004). **Method of detecting ivermectin sensitivity in a canine subject by identifying a mutation in a mdr1-encoding sequence.** *Official Gazette of the United States Patent and Trademark Office Patents* 1286(2) ISSN: 0098-1133.

Online: <http://www.uspto.gov/web/menu/patdata.html>

NAL Call Number: T223 .A21

Abstract: This invention provides the identification of a truncation polymorphism of the mdr1 gene that is linked to ivermectin sensitivity in subjects, such as collies. Also provided are methods for detecting drug transport sensitivity in a subject, and animal models and in vitro cell systems using cells from animals having an mdr1 truncation.

Descriptors: patent, molecular genetics, parasitology, pharmacology, veterinary

medicine, method for detecting ivermectin sensitivity, genetic techniques, laboratory techniques.

Meucci, V., A. Gasperini, G. Soldani, G. Guidi, and M. Giorgi (2004). **A new hplc method to determine glomerular filtration rate and effective renal plasma flow in conscious dogs by single intravenous administration of iohexol and p-aminohippuric acid.** *Journal of Chromatographic Science* 42(2): 107-111. ISSN: 0021-9665. **NAL Call Number:** 381 J8225

Abstract: A high-performance liquid chromatography method to determine iohexol (IOX) and p-aminohippuric acid (PAH) in the plasma of dogs is evaluated according to recovery, reproducibility, and linearity utilizing a gradient pump. The mobile phase consists of 50mM sodium dihydrogen phosphate with 0.5mM tetrabutylammonium chloride, the pH is adjusted to 4.1, methanol is added to the final ratio of 90:10 (v/v), the flow rate is set at 1 mL/min, and separation is achieved with an ODS2 Luna column. The UV detector is set at 254 nm. IOX and PAH are used for evaluation of the effective renal plasma flow (ERPF) and glomerular filtration rate (GFR). The present method tested in three dogs demonstrates the accuracy in the evaluation of ERPF and GFR. Because of its precision and simplicity and low cost, it can be considered a good tool for ERPF and GFR in small animal practice.

Descriptors: urinary system, high performance liquid chromatography, chromatographic techniques, laboratory techniques, glomerular filtration rate, determination, renal plasma flow.

Meyers Wallen, V.N. (2003). **Sry and sox9 expression during canine gonadal sex determination assayed by quantitative reverse transcription-polymerase chain reaction.** *Molecular Reproduction and Development* 65(4): 373-381. ISSN: 1040-452X. **NAL Call Number:** QP251.M64

Abstract: Testis induction is associated with gonadal Sry and Sox9 expression in mammals, and with Sox9 expression in vertebrates where Sry is absent. In mammals, Sry might initiate testis induction by upregulating Sox9 expression; however, direct evidence supporting this hypothesis is lacking. Models of Sry-negative XX sex reversal (XXSR), in which testes develop in the absence of Sry, could provide the link between Sry and Sox9 in testis induction. To define the stages at which testis determination occurs in the canine model, Sry and Sox9 expression were measured in normal urogenital ridges (UGR) and gonads by quantitative reverse transcription-polymerase chain reaction (qRT-PCR). Testicular Sry expression rose continuously during canine developmental ages comparable to human Carnegie stages (CS) 16-18, with maximal expression at CS 18. Sox9 was expressed in both male and female canine UGR up to CS 17, at which time testis expression became tenfold greater than in the ovary. Although Sox9 was detected by qRT-PCR in ovaries and mesonephroi of both sexes, expression was detected only in canine testes by whole mount in situ hybridization

(WMISH). The timing of Sry and Sox9 expression is consistent with a role in testis determination: Sry expression begins at CS 16 in testes, followed by upregulation of Sox9 expression at CS 17. The quantity and temporal and spatial patterns of Sry and Sox9 expression in normal canine gonads are similar to those in humans, sheep, and pigs. These studies should provide the basis for understanding the mechanism of testis induction in the canine model of Sry-negative XXSR.

Descriptors: development, molecular genetics, reproductive system, reproduction, quantitative reverse transcription polymerase chain reaction, laboratory techniques, whole mount in situ hybridization, genetic techniques, XX sex reversal, sex determination.

Mikkelsen, L.F., H. Bentsen, and B. Gerlach (2003). **The restraint platform: refinement of long term restraining of dogs for experimental procedures.** *Scandinavian Journal of Laboratory Animal Science* 30(4): 217-219. ISSN: 0901-3393.

Abstract: All experimental procedures should be evaluated and, if possible, altered to reduce discomfort, pain and/or distress and to enhance the involved animal's well-being. This short communication describes a new method for the long term restraining of dogs for experimental procedures like multiple blood sampling. The newly developed platform offers the dog a choice either to lie down, sit upright, or stand up, and facilitates an easy blood sampling procedure while ensuring a good and safe restraining of the dog.

Descriptors: animal welfare, blood sampling, methodology, restraint of animals, pain, distress.

Language of Text: English, Summary in Danish.

Mischke, R., H. Wolling, and I. Nolte (2004). **Detection of anticoagulant activities of isolated canine fibrinogen degradation products x, y d and e using resonance thrombography.** *Blood Coagulation and Fibrinolysis* 15(1): 81-88. ISSN: 0957-5235.

Descriptors: blood and lymphatics, transport and circulation, resonance thrombography, laboratory techniques.

Morton, D.B., P. Hawkins, R. Bevan, K. Health, J. Kirkwood, P. Pearce, L. Scott, G. Whelan, and A. Webb (2003). **Refinements in telemetry procedures.** *Laboratory Animals* 37(4): 261-297. ISSN: 0023-6772.

NAL Call Number: QL55.A1L3

Abstract: This report discusses telemetry procedures including the costs, harms and benefits involved. It also discusses the refinements in husbandry for rodents, dogs and non-human primates used in telemetry studies. It focuses on the refinements in the use of internally or externally mounted devices for transmitting or storing physiological data from experimental animals in the laboratory and in the field.

Descriptors: dogs, rodents, non-human primates, animal welfare, implantation, laboratory animals, telemetry.

Naish, C., R. Mitchell, J. Innes, M. Halliwell, and D. McNally (2003). **Ultrasound imaging of the intervertebral disc.** *Spine* 28(2): 107-113. ISSN: 0362-2436.

Abstract: Study Design. In vitro ultrasound imaging of dog intervertebral discs was performed. Objective. To determine the reliability of ultrasound imaging in the detection of structural changes associated with disc pathology. Summary of Background Data. Little work has been done to evaluate the potential applications of ultrasound in the imaging of intervertebral discs. Initial in vitro studies, however, have indicated that ultrasound imaging is capable of producing images of the disc that contain a high degree of structural information. Methods. Explanted lumbosacral discs from 13 non-chondrodystrophic dogs, mean age 5 years and 8 months, were stripped of all surrounding tissues and scanned using ultrasound before being sectioned and photographed. The ultrasound images were graded according to criteria chosen to reflect progressive stages of disc degeneration, allowing correlation with the grading scale used to assess the photographic images of the discs. Grades assigned to each disc were compared using Cronbach's alpha to determine the reliability of the images obtained using ultrasound. Results. The results for the anterior annulus fibrosus produced an alpha value of 0.924; those for the nucleus pulposus produced a value of 0.821; whereas those for the posterior annulus fibrosus produced a value of 0.882. Where the grade given to the ultrasound image did not match those given in visual assessment the disparity was never greater than one grade. Ultrasound images of several discs demonstrated echo patterns, that matched, in both location and appearance, real structural defects identifiable on the sectioned discs. Conclusions. Ultrasound images of intervertebral discs relate well to their pathologic condition. In addition, ultrasound is able to locate specific pathologic defects.

Descriptors: pathology, radiology, skeletal system, structural disc defect, connective tissue disease, diagnosis, ultrasound imaging, diagnostic techniques, imaging and microscopy techniques, laboratory techniques, pathological defects.

Padar, Z., M. Angyal, B. Egyed, S. Furedi, J. Woller, L. Zoldag, and S. Fekete (2001).

Canine microsatellite polymorphisms as the resolution of an illegal animal death case in a Hungarian zoological gardens. *International Journal of Legal Medicine* 115(2): 79-81. ISSN: 0937-9827.

Abstract: Several animal carcasses were found in the paddocks of a Hungarian County Zoo during 1 week. The 14 animals killed were thought to be the victims of a dogfight training. The primary suspect was the security guard of the Zoo with his guard dogs. DNA tests were carried out on hairs and bloodstains and 10 canine-specific STR loci were analysed by fluorescently labelled multiplex PCR using the ABI PRISM 310 Genetic Analyzer. The results confirmed that the killer was a single animal and all of the guard dogs were excluded.

Descriptors: illegal, dogfight training, DNA tests, canine-specific STR loci, ABI PRISM 310 Genetic Analyzer.

Pan, H.E., B. Su, V.F. Pang, and C.R. Jeng (2003). **Detection of cytokine in canine peripheral blood mononuclear cells by semi-quantitative reverse transcription-polymerase chain reaction.** *Taiwan Veterinary Journal* 29(3): 181-188. ISSN: 1682-6485.

NAL Call Number: SF604 .C54

Abstract: The purpose of this study was to establish a semi-quantitative system for detecting cytokines in canine peripheral mononuclear cells (PBMC). The mRNA levels of glyceraldehydes-3-phosphate dehydrogenase (G3PDH), a house-keeping gene, was used as an internal control to standardize the variations among samples. After determination of the optimal condition of RT-PCR, the mRNA levels of cytokine genes, including interleukin (IL)-2, IL-4, IL-10, and gamma interferon (IFN-gamma), could be detected from unstimulated and concanavalin A (Con A)-stimulated PBMC derived from six clinically healthy dogs. IL-10 was constitutively expressed in the unstimulated PBMC, however, IL-2 and IL-4 were not detectable. In Con A stimulated PBMC, all the 4 cytokines examined were strongly expressed after two hours of Con A incubation. The expression levels of IL-2, IL-4, and IFN-gamma in unstimulated and Con A-stimulated PBMC were at least 2.5-fold difference. This assay is sensitive to detect semiquantitatively the canine PBMC cytokines.

Descriptors: immune system, molecular genetics, semi quantitative reverse transcription polymerase chain reaction, genetic techniques, laboratory techniques.

Peters, I.R., C.R. Helps, E.L. Calvert, E.J. Hall, and M.J. Day (2005). **Cytokine mRNA quantification in histologically normal canine duodenal mucosa by real-time RT-PCR.** *Veterinary Immunology and Immunopathology* 103(1-2): 101-111. ISSN: 0165-2427.

NAL Call Number: SF757.2.V38

Descriptors: inflammatory bowel disease, taqhuman PCR, real time reverse transcriptase polymerase chain reaction (PCR), canine duodenum, cytokine mRNA.

Peters, I.R., C.R. Helps, R.M. Batt, M.J. Day, and E.J. Hall (2003). **Quantitative real-time rt-pcr measurement of mrna encoding alpha-chain, pigr and j-chain from canine duodenal mucosa.** *Journal of Immunological Methods* 275(1-2): 213-222. ISSN: 0022-1759.

NAL Call Number: QR180.J6

Abstract: IgA is the predominant immunoglobulin class in mucosal secretions and secretory deficiencies may predispose to chronic enteropathies. The polymeric immunoglobulin receptor (pIgR) facilitates the transport of IgA across the epithelial border. Critical to the transport of IgA by pIgR is the presence of a polypeptide joining chain (J-chain) linking the IgA monomers of the dimeric IgA molecule. In this study we examine the difference in expression of mRNA transcripts for pIgR, alpha-chain and J-chain by real-time reverse-transcription polymerase chain reaction (RT-PCR) in

endoscopic biopsies from the duodenum of dogs with and without chronic diarrhoea. One-step, real-time RT-PCR was used to quantify the level of expression of transcripts for the housekeeper gene G3PDH, pIgR, alpha-chain and J-chain. There was no significant difference in expression of any transcript between dogs with (n=11) and without (n=8) chronic diarrhoea. Expression of alpha-chain mRNA in both groups had a similar bimodal distribution, as individuals either expressed relatively 'high' or 'low' levels of this transcript. The secretion of IgA by plasma cells is under the control of Th-2 cytokines, therefore the finding of 'high' and 'low' levels of alpha-chain expression may reflect different levels of these cytokines in duodenal mucosa.

Descriptors: digestive system, ingestion and assimilation, immune system, chronic diarrhea, digestive system disease, chronic enteropathy, quantitative real time reverse transcriptase polymerase chain reaction, genetic techniques, laboratory techniques.

Pratelli, A., M. Tempesta, G. Greco, V. Martella, and C. Buonavoglia (1999). **Development of a nested PCR assay for the detection of canine coronavirus.** *Journal of Virological Methods* 80(1): 11-15. ISSN: 0166-0934.

NAL Call Number: QR355.J6

Abstract: A nested polymerase chain reaction (n-PCR) assay was developed for canine coronavirus (CCV) and tested using the USDA strain, 45/93, field strain, feline infectious peritonitis virus (FIPV, field strain), transmissible gastroenteritis virus (TGEV, Purdue strain), bovine coronavirus (BCV, 9WBL-77 strain), infectious bronchitis virus (IBV, M-41 strain) and faecal samples of dogs with CCV enteritis. A 230-bp segment of the gene encoding for transmembrane protein M of CCV is the target sequence of the primer. The n-PCR amplified both CCV and TGEV strains and also gave positive results on faecal samples from CCV infected dogs. n-PCR has a sensitivity as high as isolation on cell cultures, and can be used for diagnosis of CCV infection in dogs.

Descriptors: polymerase chain reaction, laboratory diagnosis, enteritis, gastroenteritis, coronavirus, dogs, infectious bronchitis virus, feline peritonitis virus.

Pritt, S., J.F. Nostrant, P. Samalonis, B. Lotocki, and R.M. Harrison (2004). **Clinical blood draws: when do they require IACUC approval?** *Lab Animal* 33(1): 17-21. ISSN: 0093-7355.

NAL Call Number: QL55.A1L33

Descriptors: blood withdrawal, institutional policy, institutional animal care and use committee, regulations.

Rao, L., C. Ding, and D.S. Khoury (2004). **Nonfluoroscopic localization of intracardiac electrode-catheters combined with noncontact electrical-anatomical imaging.** *Annals of Biomedical Engineering* 32(12): 1654-1661. ISSN: 0090-6964.

NAL Call Number: TA164.J6

Descriptors: intracardiac echocardiography (ICE), noncontact mappy, imaging, heart, nonfluroscopic method, catheters, cardiac anatomy, diagnosing arrhythmias.

Rao, L., R. He, C. Ding, and D.S. Khoury (2004). **Novel noncontact catheter system for endocardial electrical and anatomical imaging.** *Annals of Biomedical Engineering* 32(4): 573-584. ISSN: 0090-6964.

NAL Call Number: TA164.J6

Abstract: The study objective was to integrate noncontact mapping and intracardiac echocardiography (ICE) in a single catheter system that enables both electrical and anatomical imaging of the endocardium. We developed a catheter system on the basis of a 9-F sheath that carried a coaxial 64-electrode lumen-probe on the outside and a central ICE catheter (9 F, 9 MHz) on the inside. The sheath was placed in the right atrium (RA) of 3 dogs, and in the left ventricle (LV) of 3 other dogs. To construct cardiac anatomy, the ICE catheter was pulled back over several beats inside the sheath starting from the tip and two-dimensional tomographic images were continuously acquired. To recover endocardial electrograms, the probe was advanced over the sheath and single-beat noncontact electrograms were simultaneously recorded. Endocardial contact electrodes were placed at select sites for validation as well as for pacing. Three-dimensional electrical-anatomical images reconstructed during sinus and paced rhythms correctly associated RA and LV activation sequences with underlying endocardial anatomy (overall activation error = 3.4 +/- 13.2 ms; overall spatial error = 8.0 +/- 3.5 mm). Therefore, accurate fusion of electrical imaging with anatomical imaging during catheterization is feasible. Integrating single-beat noncontact mapping with ICE provides detailed, three-dimensional electrical-anatomical images of the endocardium, which may facilitate management of arrhythmias.

Descriptors: morphology, arrhythmia, heart disease, catheter system, tomography, imaging and microscopy techniques, laboratory techniques, intracardiac echocardiography (ICE).

Rappard, G., G.J. Metzger, P.T. Weatherall, and P.D. Purdy (2004). **Interventional mr imaging with an endospinal imaging coil: preliminary results with anatomic imaging of the canine and cadaver spinal cord.** *AJNR. American Journal of Neuroradiology* 25(5): 835-839. ISSN: 0195-6108.

Abstract: Percutaneous intraspinal navigation (PIN) is a new minimally invasive approach to the subarachnoid space. Using conventional radiographic fluoroscopy, entrance is gained to the lumbar subarachnoid space, allowing navigation throughout the spinal canal. Using an antenna/guidewire introduced via PIN, we performed endospinal MR imaging of the thoracic spinal cord in a cadaver and canine subject. Comparison images were obtained with an optimal surface coil. PIN allows endospinal MR imaging of the spinal cord, providing significant signal-to-noise ratio gains over conventional imaging.

Descriptors: nervous system, neural coordination, endospinal magnetic resonance imaging, diagnostic techniques, imaging and microscopy techniques, laboratory techniques, percutaneous intraspinal navigation, radiographic fluoroscopy, signal to noise ratio.

Reading, M.J. and H.J. Field (1999). **Detection of high levels of canine herpes virus-1 neutralising antibody in kennel dogs using a novel serum neutralisation test.** *Research in Veterinary Science* 66(3): 273-275 . ISSN: 0034-5288.

NAL Call Number: 41.8 R312

Abstract: It is widely held that only cells of canine origin support canine herpesvirus(-1) (CHV-1) replication and, that cytopathic effect (CPE) develops relatively slowly. Here we show that mink fetal lung cells (NBL-7 cell line) are permissive for CHV-1 and can be used to produce a sensitive test for neutralising antibody by plaque reduction in the presence of complement. The test was applied to the investigation of CHV-1 virus neutralising antibody levels in three kennel populations. The results showed that 26 out of 28 dogs were neutralising antibody positive (titre greater than or equal to 2) and, 11 out of 28 had titres of greater than or equal to 1024. The serum samples were analysed by enzyme linked immunoassay (ELISA); 27 out of 28 were graded as ELISA IgG positive (titre greater than or equal to 500) and 26 of 28 were graded as ELISA IgM positive (titre greater than or equal to 50).

Descriptors: dogs, canine herpesvirus, neutralizing antibodies, neutralization tests, antibody testing, cell lines, lungs, mink.

Rekitt, M., M. Staub, U. Andresen, and H. Sauerwein (2003). **Orientierende Untersuchungen zum oxidativen Stress bei Hunden. [Orientational studies on oxidative stress in dogs.]** *Tierärztliche Umschau* 58(2): 70 , 73-78. ISSN: 0049-3864.

NAL Call Number: 41.8 T445

Abstract: A new method (d-ROM test, with the Form-CR photometer) was investigated for its usefulness in diagnosing oxidative stress in dogs, by measuring the peroxide content in blood samples. 40 dogs of various ages and breeds from a veterinary practice in Germany were examined. 20 were healthy and 20 had various diseases. The mean value for oxidative stress in the 40 dogs was 92 ± 32 Carratelli units (1 Carratelli unit = 0.08 mg H₂O₂/dl). This value was less than that found in horses (110 Carr. units) and in man (210 Carr. units). About 37% of the dogs had values greater than 100 Carr. units, and were classed as oxidatively stressed. Male dogs had significantly higher values than bitches (108.6 and 84.0 Carr. u., respectively) and values were also significantly higher in entire males than in castrated males. Mean haptoglobin concentration in blood samples was 1.6 ± 1.5 mg/ml, and was significantly higher in diseased than in healthy dogs (2.0 ± 1.5 and 1.2 ± 1.5 mg/ml, respectively). Haptoglobin concentration also increased significantly with age. In an experiment with 15 dogs classed as oxidatively stressed, 7 were given, for 3

weeks, a nutritional supplement (Vivomax) containing vitamins E and C, Se and plant extracts with antioxidative and immunomodulatory effects. In 6 of the dogs, oxidative stress values decreased by 30% compared with untreated dogs. However, haptoglobin concentration was not affected. It is concluded that the test is suitable for use in veterinary practice for diagnosing oxidative stress, but that the results of these experiments needed to be tested on a larger number of animals.

Descriptors: age, ascorbic acid, bitches, blood chemistry, blood proteins, feed additives, feed supplements, hydrogen peroxide, plant extracts, selenium, sex, stress, vitamin E, dogs.

Language of Text: German.

Rosati, S., M. Ortoffi, M. Profiti, A. Mannelli, W. Mignone, E. Bollo, and L. Gradoni (2003). **Prokaryotic expression and antigenic characterization of three recombinant leishmania antigens for serological diagnosis of canine leishmaniasis.** *Clinical and Diagnostic Laboratory Immunology* 10 (6): 1153-1156. ISSN: 1071-412X.

Abstract: Three recombinant antigens of *Leishmania chagasi* (=L. infantum) were expressed in prokaryotic systems and evaluated (using a panel of dog sera characterized by parasitological and serological immunofluorescent antibody test (IFAT) techniques) as diagnostic markers of infection. The whole open reading frame encoding K9, the gene fragment encoding the repetitive sequence of K26, and the 3'-terminal gene fragment encoding a single 39-amino-acid subunit of the kinesin-related protein K39 (K39sub) were amplified from L. infantum DNA and cloned into a pGEX-2T expression vector in frame with glutathione S-transferase (GST). The sensitivity and specificity of enzyme-linked immunosorbent assays (ELISAs) using K26 as an antigen (evaluated with sera from 20 parasitologically positive and 20 parasitologically negative dogs) were both 100% (95% confidence interval (CI)=83.2 to 100). When K9 and K39sub were used, sensitivity was 95% (95% CI=75.1 to 99.9) and specificity was 100% (95% CI=83.2 to 100). Using 182 field sera, a good agreement was found between the recombinant K26 ELISA and IFAT (K=0.92; 95% CI=0.86 to 0.98) results and between the K9 and K39sub ELISA (used in parallel) and IFAT (K=0.87; 95% CI=0.80 to 0.95) results. The results demonstrate that each antigen carries immunodominant epitopes and that their combination may further increase the sensitivity of currently available serological tests.

Descriptors: blood and lymphatics, transport and circulation, immune system, integumentary system, canine leishmaniasis, integumentary system disease, parasitic disease, diagnosis, elisa, diagnostic techniques, immunologic techniques, laboratory techniques, immunofluorescent antibody test, serodiagnosis.

Sandhu P, Vogel JS, Rose MJ, Ubick EA, Brunner JE, Wallace MA, Adelsberger JK, Baker MP, Henderson PT, Pearson PG, and Baillie TA (2004). **Evaluation of microdosing strategies for studies in preclinical drug development: demonstration of linear pharmacokinetics in dogs of a nucleoside analog over a 50-fold dose range.** *Drug Metabolism and Disposition* 32(11): 1254-1259. ISSN: 0090-9556.

NAL Call Number: RM301.35.D78

Abstract: The technique of accelerator mass spectrometry (AMS) was validated successfully and used to study the pharmacokinetics and disposition in dogs of a preclinical drug candidate (7-deaza-2'-C-methyladenosine; Compound A), after oral and intravenous administration. The primary objective of this study was to examine whether Compound A displayed linear kinetics across subpharmacological (microdose) and pharmacological dose ranges in an animal model, before initiation of a human microdose study. The AMS-derived disposition properties of Compound A were comparable to data obtained via conventional techniques such as liquid chromatography-tandem mass spectrometry and liquid scintillation counting analyses. Compound A displayed multiphasic kinetics and exhibited low plasma clearance (5.8 ml/min/kg), a long terminal elimination half-life (17.5 h), and high oral bioavailability (103%). Currently, there are no published comparisons of the kinetics of a pharmaceutical compound at pharmacological versus subpharmacological doses using microdosing strategies. The present study thus provides the first description of the full pharmacokinetic profile of a drug candidate assessed under these two dosing regimens. The data demonstrated that the pharmacokinetic properties of Compound A following dosing at 0.02 mg/kg were similar to those at 1 mg/kg, indicating that in the case of Compound A, the pharmacokinetics in the dog appear to be linear across this 50-fold dose range. Moreover, the exceptional sensitivity of AMS provided a pharmacokinetic profile of Compound A, even after a microdose, which revealed aspects of the disposition of this agent that were inaccessible by conventional techniques.

Descriptors: dogs, accelerator mass spectrometry (AMS), pharmacokinetic profile, drug screening.

Scholz, C., M.J. Johansen, R. Newman, M. Andreeff, M. Konopleva, and T. Madden (2003). **Sensitive and specific method for the determination of CDDO methyl ester in mouse, rat, dog, monkey and human plasma by LC-tandem mass spectrometry.** In: *Proceedings of the American Association for Cancer Research 94th Annual Meeting, July 11-14, 2003, Washington, DC, USA*, Vol. 44, p. 1262.

Descriptors: LC tandem mass spectrometry, solid phase extraction, laboratory techniques, methyl ester, rat, mouse, dog, monkey, human, plasma.

Skoumalova, A., J. Rofina, Z. Schwippelova, E. Gruys, and J. Wilhelm (2003). **The role of free radicals in canine counterpart of senile dementia of the alzheimer type.** *Experimental Gerontology* 38(6): 711-719 . ISSN: 0531-5565.

NAL Call Number: QP86.E85

Abstract: The pathogenesis of Alzheimer's disease is still unknown. In recent time oxidative stress has been discussed as an important contributor. In the present study we investigated the role of free radicals in the spontaneous canine model of Alzheimer's disease. We analysed end-products of lipid peroxidation: lipofuscin-like pigments (LFP), protein carbonyls, and vitamin E to obtain data on oxidative damage in brain of demented dogs. When the generation of free radicals is intensive the toxic products of lipid peroxidation can diffuse from the site of the primary formation and merge with erythrocytes. Therefore we also determined the level of lipid peroxidation in red blood cells. In brain of demented animals the level of LFP increased (to 247%, $P < 0.05$) as well as of protein carbonyls (to 438%, $P < 0.01$) while the vitamin E concentration was lowered (to 34%, $P < 0.01$) when compared to age-matched non-demented controls. The end-products of lipid peroxidation have been found increased also in erythrocytes of demented dogs (250%, $P < 0.05$). These results indicate intensive production of free radicals in brain of animals with dementia which induces damage to erythrocytes. Detection of the specific products of free radical damage in blood samples could be used for diagnostic purposes.

Descriptors: aging, behavior, metabolism, nervous system, neural coordination, Alzheimer's disease, behavioral and mental disorders, nervous system disease, etiology, senile dementia, mental disorders, nervous system disease, etiology, lipid peroxidation end products.

Thoesen, M.S., W.S. Berg Foels, T. Stokol, K.M. Rassnick, M.S. Jacobson, S.V. Kevy, and R.J. Todhunter (2006). **Use of a centrifugation-based, point-of-care device for production of canine autologous bone marrow and platelet concentrates.** *American Journal of Veterinary Research* 67(10): 1655-61. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: **OBJECTIVE:** To analyze a centrifugation-based, point-of-care device that concentrates canine platelets and bone marrow-derived cells. **ANIMALS:** 19 adult sexually intact dogs. **PROCEDURES:** Anticoagulated peripheral blood (60 mL) and 60 mL of anticoagulated bone marrow aspirate (BMA) were concentrated by centrifugation with the centrifugation-based, point-of-care device to form a platelet and a bone marrow concentrate (BMC) from 11 dogs. Blood samples were analyzed on the basis of hemograms, platelet count, and PCV. The BMA and BMC were analyzed to determine PCV, total nucleated cell count, RBC count, and differential cell counts. The BMC stromal cells were cultured in an osteoinductive medium. Eight additional dogs were used to compare the BMC yield with that in which heparin was infused into the bone marrow before aspiration. **RESULTS:** The centrifugation-based,

point-of-care device concentrated platelets by 6-fold over baseline (median recovery, 63.1%) with a median of $1,336 \times 10^3$ platelets/microL in the 7-mL concentrate. The nucleated cells in BMCs increased 7-fold (median recovery, 42.9%) with a median of 720×10^3 cells/microL in the 4-mL concentrate. The myeloid nucleated cells and mononuclear cells increased significantly in BMCs with a significant decrease in PCV, compared with that of BMAs. Stromal cell cultures expressed an osteoblastic phenotype in culture. Infusion of heparin into the bone marrow eliminated clot formation and created less variation in the yield (median recovery, 61.9%).

CONCLUSIONS AND CLINICAL RELEVANCE: Bone marrow-derived cell and platelet-rich concentrates may form bone if delivered in an engineered graft, thus decreasing the need for cancellous bone grafts.

Descriptors: blood platelets physiology, bone marrow cells physiology, cell separation instrumentation, cell separation veterinary, centrifugation veterinary, point of care systems, blood component removal veterinary, cells, cultured, centrifugation instrumentation, dogs, stromal cells.

Thomas, R.A., D. Mcfarland, L.A. Tierney, P.K. Narayanan, and L.W. Schwartz (2004).

Ena-78 induced up-regulation of cd11b in whole blood: A novel assay for c-x-c chemokine induced neutrophil activation in dogs. *Cytometry* 59A(1): 131. ISSN: 0196-4763.

NAL Call Number: QH573 .C958

Descriptors: blood and lymphatics, immune system, flow cytometry, neutrophil activation, dogs, meeting abstract.

Notes: Meeting Information: Presented at XXII Congress of the International Society for Analytical Cytology.

Trunsky, J. (2003). **Dog feces collection bag dispenser and receptacle.** *Official Gazette of the United States Patent and Trademark Office Patents* 1271(3) ISSN: 0098-1133.

Online: <http://www.uspto.gov/web/menu/patdata.html>

NAL Call Number: T223 .A21

Descriptors: patent, animal waste, sanitation, dog feces collection bag.

Tseng, L.W., D. Hughes, and U. Giger (2001). **Evaluation of a point-of-care coagulation analyzer for measurement of prothrombin time, activated partial thromboplastin time, and activated clotting time in dogs.** *American Journal of Veterinary Research* 62(9): 1455-1460. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: To evaluate a point-of-care coagulation analyser (PCCA) in dogs with coagulopathies (n=32, with and without evidence of bleeding) and healthy dogs (n=27), prothrombin time (PT), activated partial thromboplastin time (aPTT), and activated clotting time (ACT) were determined using a PCCA and standard methods. Using the PCCA, mean (\pm SD) PT of citrated whole blood (CWB) from healthy dogs

was 14.5 ± 1.2 seconds, whereas PT of non-anticoagulated whole blood (NAWB) was 10.4 ± 0.5 seconds. Activated partial thromboplastin time using CWB was 86.4 ± 6.9 seconds, whereas aPTT was 71.2 ± 6.7 seconds using NAWB. Reference ranges for PT and aPTT using CWB were 12.2-16.8 seconds and 72.5-100.3 seconds, respectively. Activated clotting time in NAWB was 71 ± 11.8 seconds. Agreement with standard PT and aPTT methods using citrated plasma was good (overall agreement was 93% for PT and 87.5% for aPTT in CWB). Comparing CWB by the PCCA and conventional coagulation methods using citrated plasma, sensitivity and specificity were 85.7 and 95.5% for PT and 100 and 82.9% for aPTT, respectively. Overall agreement between the PCCA using NAWB and the clinical laboratory was 73% for PT and 88% for aPTT. Using NAWB for the PCCA and citrated plasma for conventional methods, sensitivity and specificity was 85.7 and 68.4% for PT and 86.7 and 88.9% for aPTT, respectively. The PCCA detected intrinsic, extrinsic, and common pathway abnormalities in a similar fashion to clinical laboratory tests.

Descriptors: blood, blood coagulation, blood coagulation disorders, clotting, diagnosis, diagnostic techniques, diagnostic value, prothrombin, thromboplastin.

Verwaerde, P., C. Malet, M. Lagente, F. de la Farge, and J.P. Braun (2002). **The accuracy of the i-STAT portable analyser for measuring blood gases and pH in whole-blood samples from dogs.** *Research in Veterinary Science* 73(1): 71-75. ISSN: 0034-5288. **NAL Call Number:** 41.8 R312

Abstract: To assess the suitability of the i-STAT portable analyser for use by non-laboratory personnel, we measured blood gases and pH in venous blood samples from 100 dogs. Deming's regression and bias plots were used to compare i-STAT results with those obtained by laboratory professionals using two different autocalibrated benchtop analysers. Overall accuracy of the portable analyser proved excellent for pH, pO₂, and pCO₂ ($r=0.978$, 0.968 and 0.997 , respectively), with Deming's regression slopes close to 1.00 (0.96 , 0.97 and 1.08 for pH, pO₂, and pCO₂, respectively) and intercepts close to zero (0.28 , 0.47 kPa and 0.46 kPa for pH, pO₂, and pCO₂, respectively). The accuracy of the i-STAT was also satisfactory for calculated parameters: bicarbonates, total CO₂, base excess and oxygen saturation. Our findings show this portable analyser to be a valid substitute for expensive benchtop analysers in situations requiring mobility, or when small numbers of tests are to be performed by users not specialized in laboratory techniques.

Descriptors: i-STAT portable analyser, blood gases, pH, venous blood samples.

Volkman, D.H. (2006). **The effects of storage time and temperature and anticoagulant on laboratory measurements of canine blood progesterone concentrations.** *The-riogenology* 66(6-7): 1583-1586. ISSN: 0093-691X. **NAL Call Number:** QP251.A1T5

Abstract: The effects of anticoagulant, storage time, storage temperature, and assay

method, on laboratory measurements of blood progesterone concentrations of dogs is unclear; these factors have had a dramatic effect on blood progesterone concentrations in other species (particularly cows). In six experiments, we determined the effects of assay technique (chemiluminescence versus radioimmunoassay (RIA)), storage time, and temperature, as well as the use of heparinized plasma versus serum (coagulated blood) on measured progesterone concentrations of bitches. The studies showed that: (a) RIA measured significantly higher serum progesterone concentration (SPC) than chemiluminescence; (b) refrigeration of whole blood during the first 2 h after sample collection significantly decreased measured SPC; (c) progesterone concentration in heparinized plasma was not affected by storage temperature of whole blood for at least 5 h; (d) refrigeration of whole, clotted blood did not affect SPC, provided that samples were held at room temperature for the first 2 h after collection. These findings are of particular importance when blood samples are collected for determination of the initial rise in SPC that is associated with the LH surge in estrous bitches.

Descriptors: blood preservation , progesterone, specimen handling, anticoagulants, chemiluminescent measurements, radioimmunoassay, temperature.

Wiedemann, K., E. Fleischer, and P. Dressler (2002). **Zur Geschichte der Seitentrennung der Atemwege.** *Anesthesiol Intensivmed Notfallmed Schmerzther.* 37(1): 8-15. ISSN: 0939-2661.

Abstract: Techniques to separate the airways to both lungs were employed in the laboratory by renowned physiologists like Pfluger and C. Bernard to study gas exchange. Pfluger's catheter, as used by Wolffberg in 1871 in the dog, essentially constituted an early example of endobronchial single lumen tube, and was to be the first airway separator introduced into man by Loewy and v. Schrotter in 1905 in experiments on circulation. As a variation of this device the carinal hook made its appearance used by Hess in 1912 in rabbits. While the endobronchial catheters afforded airtight access to only one lung at a time for concomitantly studying ventilation in both lungs, a short tracheal cannula was combined with one introduced into the left main bronchus by Head in 1889, constituting as it were the prototype of double lumen (DL) tubes applicable to rabbits and turtles even. Werigo described 1892 a coaxial DL-tracheostomy cannula for dogs which construction principle was adopted in the first DL-bronchoscope used in man. In lung surgery during the 30s and 40s the ventilated lung was prevented from drowning by pus or secretions from the lung under surgery by sealing off its main bronchus, either by endobronchial intubation or by a bronchial blocker inserted alongside the endotracheal tube. This principle gave rise to sophisticated devices, from the fixed combination of tube and blocker to the present-day tube housing a movable blocker. Remarkably, DL-intubation in its proper sense then was performed in bronchspirometry only. This technique was introduced by Jacobaeus upon suggestion of Liljestr nd when dissatisfied with the restric-

tion to sequential spirometry by customary bronchoscopic catheterization, relying on Frenckner's ingenious DL-bronchoscope. Rubber DL-tubes were developed by Gebauer 1939 and Zavod 1940 exclusively with bronchspirometry in mind, even E. Carlens primarily constructed his tube to improve this procedure. After its usage in over 100 bronchspirometries it was introduced for the first time in November 1949 for its familiar purpose: the resection of a tuberculous abscess in the right upper lobe. Once introduced into thoracic anaesthesia, the DL-principle so far fostered a wide variety of tube designs.

Descriptors: bronchi, anatomy, histology, artificial respiration, history of techniques used, literature review, instrumentation, methods, anesthesiology.

Wiedmeyer, C.E., P.J. Johnson, L.A. Cohn, and R.L. Meadows (2003). **Evaluation of a continuous glucose monitoring system for use in dogs, cats, and horses.** *Journal of the American Veterinary Medical Association* 223(7): 987-992. ISSN: 0003-1488.

NAL Call Number: 41.8 AM3

Abstract: Objective: To evaluate a continuous glucose monitoring system (CGMS) for use in dogs, cats, and horses. Design: Prospective clinical study. Animals: 7 horses, 3 cats, and 4 dogs that were clinically normal and 1 horse, 2 cats, and 3 dogs with diabetes mellitus. Procedure: Interstitial glucose concentrations were monitored and recorded every 5 minutes by use of a CGMS. Interstitial glucose concentrations were compared with whole blood glucose concentrations as determined by a point-of-care glucose meter. Interstitial glucose concentrations were also monitored in 2 clinically normal horses after oral and IV administration of glucose. Results: There was a positive correlation between interstitial and whole blood glucose concentrations for clinically normal dogs, cats, and horses and those with diabetes mellitus. Events such as feeding, glucose or insulin administration, restraint, and transport to the clinic were recorded by the owner or clinician and could be identified on the graph and associated with time of occurrence. Conclusions and Clinical Relevance: Our data indicate that use of CGMS is valid for dogs, cats, and horses. This system alleviated the need for multiple blood samples and the stress associated with obtaining those samples. Because hospitalization was not required, information obtained from the CGMS provided a more accurate assessment of the animal's glucose concentrations for an extended period, compared with measurement of blood glucose concentrations. Use of the CGMS will promote the diagnostic and research potential of serial glucose monitoring.

Descriptors: blood chemistry, blood sugar, diabetes mellitus, techniques, cats, dogs, horses, blood collection, continuous glucose monitoring system, stress.

Xu, X., L. Qian, and J.D.Z. Chen (2004). **Anti-dysrhythmic effects of long-pulse gastric electrical stimulation in dogs.** *Digestion* 69(2): 63-70. ISSN: 0012-2823.

NAL Call Number: QP141.A1D5

Descriptors: digestive system, ingestion and assimilation, gastric dysrhythmia, digestive system disease, long pulse gastric electrical stimulation, anti dysrhythmic stimulation effects, gastric motility, gastric myoelectrical activity, gastric pacing, gastric slow wave coupling.

Yamada, M. and M. Tokuriki (2000). **Spontaneous activities measured continuously by an accelerometer in Beagle dogs housed in a cage.** *Journal of Veterinary Medical Science* 62(4): 443-447. ISSN: 0021-5295.

NAL Call Number: SF604.J342

Abstract: Spontaneous physical activity for investigating behavioural drug toxicity was recorded continuously in 10 Beagle dogs housed in individual cages for 2 h using an accelerometer and a video camera. Gross differentiation of quantitative behavioural parameters was possible with the accelerometer alone when threshold and acceleration volume values were set at 0.10 G and $_251$. At these settings, the accelerometer revealed only movements of whole-body, whereas at threshold value of 0.02 G movements of individual body parts could be identified.

Descriptors: animal behavior, abnormal behavior, drug toxicity, instruments, dogs.

Yan, C.J., C.H. Lin, Y.H. Lien, L.H. Lu, and H.P. Huang (2004). **Study of blood pressure in the geriatric canine population in taiwan.** *Taiwan Veterinary Journal* 30(3): 222-229. ISSN: 1682-6485.

NAL Call Number: SF604 .C54

Abstract: This survey aimed to establish blood pressure (BP) references of clinically healthy geriatric dogs using ultrasonic Doppler flow detector, and to investigate the effects of age, breed, sex, body weight, and body condition on blood pressures. Two hundreds and seven clinically healthy dogs were studied. One hundred and thirty-six healthy geriatric dogs and seventy-one healthy adult dogs were measured. The mean BP of geriatric dogs was 157.9 +/- 24.4 mmHg. The mean BP of healthy adult dogs was 150.8 +/- 22.3 mmHg. Systolic BP measurements were significantly higher in the geriatrics compared to the adult dogs ($P = 0.04$). Systolic BP measurements higher than 206.7 mmHg were defined as hypertension, and those less than 109.1 mmHg were defined as hypotension. Blood pressure measurements were found to be waved with age. Shih-Tzu presented higher BP than other breeds in both geriatric and adult dogs, however it was not statistically significant. Sex, body weight, and body condition did not affect BP distributions.

Descriptors: aging, animal care, blood and lymphatics, transport and circulation, hypertension, vascular disease, diagnosis, doppler myocardial imaging, microscopy techniques, laboratory techniques.

Language of Text: Chinese.

Yuan, A.S., M.L. Morris, K.C. Yin, J.Y.K. Hsieh, and B.K. Matuszewski (2003). **Development and implementation of an electrochemiluminescence immunoassay for the determination of an angiogenic polypeptide in dog and rat plasma.** *Journal of Pharmaceutical and Biomedical Analysis* 33(4): 719-724 . ISSN: 0731-7085.

NAL Call Number: RS400

Abstract: A quantitative method based on electrochemiluminescence immunoassay for the determination of the angiogenic agent aFGF-S117 has been developed and validated. Two polyclonal antibodies specific to aFGF-S117 and a wild-type aFGF antibody were selected for the analysis. The assay was based on the non-competitive sandwich immunoassay principle in which the drug is trapped with a biotinylated antibody that is immobilized on a streptavidin magnetic particle. The drug is then sandwiched with a ruthenium chelated second antibody. The assay demonstrates good accuracy and reproducibility at plasma concentration of 0.5 ng/ml.

Descriptors: veterinary medicine, electrochemiluminescence immunoassay, immunologic techniques, laboratory techniques, non competitive sandwich immunoassay.

Zhang, D., B. Yuan, M. Qiao, and F. Li (2003). **HPLC determination and pharmacokinetics of sustained-release bupropion tablets in dogs.** *Journal of Pharmaceutical and Biomedical Analysis* 33(2): 287-293. ISSN: 0731-7085.

NAL Call Number: RS400

Abstract: The pharmacokinetics and bioequivalency of a newly developed sustained-release bupropion tablet was studied in six dogs after single oral administration and compared with a regular tablet (RT) in randomized two-period crossover design. A sensitive and rapid HPLC method was developed and validated for the quantitative determination of bupropion in dog plasma. The compound and the internal standard (I.S.) (hydroxyethylfludiazepam) were extracted from the plasma samples by liquid-liquid extraction. The extracts were analyzed by a reversed-phase HPLC with 50 mmol/l phosphate buffer (pH 5.5)-methanol (45:55, v/v) as the eluent. The assay was specific for bupropion. The calibration curves were linear in the range between 1 and 750 ng/ml. The validated lower limit of quantification was 1 ng/ml. The overall precision (expressed as R.S.D.) of quality controls were within 15%. The method was successfully applied to the bioequivalency study of bupropion in the two formulations. The C_{max} of sustained-release tablet (ST) was significantly lower than that of the RT and the T_{max} was significantly longer than that of the RT (P < 0.05). The relative bioavailability of the ST was (99.1 ± 1.51)%, the results of ANOVA and two one sided tests indicated that the new ST exhibited good sustained release properties and was bioequivalent to the RT.

Descriptors: sustained-release bupropion tablet, dogs, oral administration, HPLC methodology, calibration curves, drug formulations.

Feeding

Anonymous (2004). **Reaction of the Dutch pet food industry to a letter on health claims.**

Tijdschrift Voor Diergeneeskunde 129(8): 277. ISSN: 0040-7453.

NAL Call Number: 41.8 T431

Descriptors: animal husbandry, foods, nutrition, pharmacology, veterinary medicine, animal care, animal nutrition, food production, health claims, pet food, animal feed, pet food industry, the Netherlands.

Language of Text: German.

Bailoni, L. and I. Cerchiaro (2005). **The role of feeding in the maintenance of well-being and health of geriatric dogs.** *Veterinary Research Communications* 29(Suppl. 2):

51-55. ISSN: 0165-7380.

NAL Call Number: SF601 .V38

Abstract: Ageing, like all physiological effects, has a multifactorial origin and is linked to the progressive reduction in the function of some organs and systems. Feeding can play an important role in the control of the ageing process by the improvement of quality of life and the prevention of some pathologies associated with age (renal diseases, obesity, rheumatism, dental pathologies, cardiovascular disorders). Clinical nutrition of old dogs allows us to clarify the animals' nutritional requirements, the required balance of nutrients, the quality of ingredients and dietetic function of some substances. Twenty commercial dry foods formulated for old dogs were analysed. A wide variability of chemical composition was observed among the samples. Very different values were found for size and hardness of kibbles (parameters correlated with the incidence of some dental diseases). Good availability of foods with different nutritional characteristics could be useful to the needs of geriatric dogs. Similarly, a balanced home-made ration could satisfy the specific requirements of old dogs and gratify their owners. In conclusion, a diet for ageing dogs should be "personalized", considering both the nutritional and extra-nutritional factors, which contribute to guarantee optimal well-being and health.

Descriptors: animal feed standards, animal nutrition, physiology, nutritional requirements, aging physiology, geriatric dogs.

Hennessy, M.B., V.L. Voith, T.L. Young, J.L. Hawke, J. Centrone, A.L. McDowell, F. Linden, and G.M. Davenport (2002). **Exploring human interaction and diet effects on the behavior of dogs in a public animal shelter.** *Journal of Applied Animal Welfare Science* 5(4): 253-273. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Descriptors: dogs, animal behavior, human-animal relations, animal stress, diet, pet foods, digestibility, protein sources, play, fearfulness, animal welfare.

Hesta, M., W. Roosen, G.P.J. Janssens, S. Millet, and R. De Wilde (2003). **Prebiotics affect nutrient digestibility but not faecal ammonia in dogs fed increased dietary protein levels.** *British Journal of Nutrition* 90(6): 1007-1014. ISSN: 0007-1145.
NAL Call Number: 389.8 B773

Abstract: An increased protein content and less digestible protein sources in the diet can induce bad faecal odour. The present study investigated the effect of adding prebiotics to dog diets enriched with animal-derived protein sources on apparent digestibilities and faecal ammonia concentration. In three subsequent periods eight healthy beagle dogs were fed a commercial dog diet that was gradually supplemented by up to 50% with meat and bone meal (MBM), greaves meal (GM) or poultry meal (PM) respectively. Afterwards, 3% fructo-oligosaccharides or 3% isomalto-oligosaccharides were substituted for 3% of the total diet. Supplementation with animal-derived protein sources did not decrease the apparent N digestibility significantly but oligosaccharides did. On the other hand the bacterial N content (% DM) in the faeces was highest in the oligosaccharide groups followed by the protein-supplemented groups and lowest in the control groups. When the apparent N digestibility was corrected for bacterial N no significant differences were noted anymore except for the GM group where the corrected N digestibility was still lower after oligosaccharide supplementation. The amount of faecal ammonia was significantly increased by supplementing with protein or oligosaccharides in the MBM and GM groups but not in the PM group. When apparent N digestibility is interpreted, a correction for bacterial N should be taken into account, especially when prebiotics are added to the diet. Oligosaccharides did not reduce the faecal ammonia concentrations as expected.

Descriptors: nutrition, protein levels, canine diets, fecal odor, prebiotic addition to diet, digestibility, fecal ammonia concentration.

Houpt, K.A. and S. Zicker (2003). **Dietary effects on canine and feline behavior.** *Veterinary Clinics of North America Small Animal Practice* 33(2): 405-416. ISSN: 0195-5616 .

NAL Call Number: SF601.V523

Descriptors: behavior, nutrition, veterinary medicine, malnutrition, nutritional disease, obesity, aggression, diet, behavioral effects, diet fat content, dietary fiber, energy balance.

Ikeda Douglas, C.J., H. Murphey, B. Muggenburg, E. Head, C.W. Cotman, S.C. Zicker, and N.W. Milgram (2002). **Long term maintenance of an antioxidant enriched food plus behavioral enrichment markedly delays age related cognitive decline in**

beagle dogs. In: *Society for Neuroscience Abstract Viewer and Itinerary Planner: 32nd Annual Meeting of the Society for Neuroscience, November 2-7, 2002, Orlando, FL*, p. Abstract No. 374.5. [CD-Rom]

Online: <http://sfn.scholarone.com>

Descriptors: aging, behavior, nutrition, behavioral enrichment, laboratory techniques, age related cognitive decline, discrimination learning, food control environment, reversal learning.

Jewell, D.E. (2003). **Einfluss der Fütterung auf altersbedingte Verhaltensänderungen beim Hund.** [Effects of food on age-related behavioural changes in dogs.]. *Praktische Tierarzt* 84(3): 178-182. ISSN: 0032-681X.

NAL Call Number: 41.8 P882

Abstract: A clinical trial, including 142 dogs aged 7 years or older, was performed in order to investigate whether age-related behavioural changes could be influenced by feeding a special diet. The trial was designed as a randomized double blind study. The control interval was 60 days. Age-related behavioural changes were categorized by the DISHA-system and evaluated with the help of a standardized informant-based questionnaire completed by pet owners. The dogs fed the special diet showed significant improvements in behavioural attributes as compared to the control dogs receiving a leading consumer brand.

Descriptors: age, animal behavior, behavioral changes, diets, dog feeding.

Language of Text: German, Summary in English.

Long, J.P. and S.C. Greco (2000). **The effect of propofol administered intravenously on appetite stimulation in dogs.** *Contemporary Topics in Laboratory Animal Science*. 39(6): 43-46. ISSN: 1060-0558.

NAL Call Number: SF405.5.A23

Abstract: This study attempts to qualify and quantify the effect of propofol (2, 6-diisopropylphenol) on appetite stimulation in healthy young adult dogs. Six purpose-bred male dogs (age, 6 months) were obtained from a Class A vendor. Dogs were housed individually and provided water ad libitum throughout the study period. All dogs were fed ad libitum to ensure that test conditions and degree of satiety were identical. Each dog was assigned randomly to either an experimental group or control each day of the study. The experimental groups received single bolus intravenous injections of propofol at different dosage levels (0.5, 1.0, 1.5, 2.0, or 3.0 mg/kg of body weight), and the control group received saline. The administrator was blinded to the animal's identification and dose. Dosages greater than 3.0 mg/kg resulted in profound sedation and ataxia, which physically inhibited the dogs from obtaining the food; therefore 3.0 mg/kg was the highest dose tested. Dogs were weighed daily to ensure accurate dosing. Dosing was performed at the same time each day to minimize variability. Food intake amounts were recorded at 15, 30, 60, 120, and 1440 min

after injection. Food intake was expressed as [food intake (g)/body weight (kg)/unit time (min.)]. After a 1-week rest period, the study was repeated. Data were analyzed with a type RBF-65 randomized-block factorial design (ANOVA). Each dog served as its own control. The two experiments were analyzed separately, and a P-value of less than 0.05 was used to declare statistical significance. An increase ($P < 0.05$) in food consumption was observed solely during the 0-to-15-min time interval; no significant increase in food consumption was observed at any other time point. This data supports propofol's appetite stimulating effect in the initial 15 min after injection. Additional studies are required to explore the mechanism for this effect and to determine whether it occurs in other species.

Descriptors: pets, feed intake, appetite, feeding behavior, anorexia, drugs, treatment, stimulation, propofol, dogs.

Manuel, M.F., J.H.A. Abalos, and C.D. Solis (2002). **Some acute behavioural and physiological effects observed in local Philippine dogs voluntarily fed with monosodium glutamate (MSG) in the diet.** *Philippine Journal of Veterinary Medicine* 39(1): 50-51. ISSN: 0031-7705.

NAL Call Number: 41.8 P53

Abstract: Twelve 4- to 7-month-old Philippine nondescript dogs of both sexes were fed monosodium glutamate (MSG) in the diet in quantities varying from 0, 5 and 10% of the amount of food given, using the Latin square design. Both physiological and behavioural parameters were examined in all animals an hour before and after feeding. Doses of MSG as high as 10% did not induce any noticeable change in the behaviour of the dogs. On the other hand, some temporary physiological changes such as tachycardia, vomiting and excretion of dark-coloured faeces were observed in 10 of the dogs.

Descriptors: adverse effects, monosodium glutamate, poisoning, toxicity, dogs.

Nap, R.C. (1999). **Voeding van hond en kat in intensive care. [Feeding of dogs and cats kept in intensive care.]**. *Vlaams Diergeneeskundig Tijdschrift* 68(5): 246-248. ISSN: 0303-9021.

NAL Call Number: 41.8 V84

Descriptors: intensive care, animal feeding, cats, dogs.

Language of Text: Dutch.

Shull, E.A. (2002). **Effects of an investigational food on age-related behavioural changes in dogs.** In: *Symposium on brain aging and related behavioral changes in dogs, January 11, 2002, Orlando, Florida, USA*, 17-19 p.

Descriptors: animal behavior, dog foods, nutrition, nutritive value, dogs.

Spears, J.K. and G.C.J. Fahey (2004). **Resistant starch as related to companion animal nutrition.** *Journal of AOAC International* 87(3): 787-791. ISSN: 1060-3271.

NAL Call Number: S583.A7

Abstract: Companion animal diets may contain up to 50% starch, derived from cereal grains. The amount of resistant starch (RS) in an ingredient depends on the origin and form of the ingredient and on the processing conditions to which the ingredient has been exposed. Extrusion has proven to be a means of optimizing utilization of starch by companion animals. Although the RS fraction of starch typically decreases by extrusion, retrogradation can result in increased concentrations of this fraction. Limited research exists regarding the effects of RS in companion animal nutrition and gastrointestinal health. Existing in vitro and in vivo research indicates that certain RS sources are readily fermented in the large bowel, producing short-chain fatty acids, whereas others are less fermentable, resulting in excellent laxation properties. Feeding dogs a diet high in RS may result in an increase in fecal bulk due to an increased excretion of microbial matter in those cases where RS is highly fermentable, or to indigestibility of the RS source in other cases. RS has a role to play as a potential proxy for dietary fiber, especially for those companion animals fed diets high in protein and fat and devoid of traditional dietary fiber.

Descriptors: companion animal diets, cereal grains, resistant starch (RS), animal care, nutrition, dietary fiber, gastrointestinal health.

Weber, M.P., D. Hernot, P.G. Nguyen, V.C. Biourge, and H.J. Dumon (2004). **Effect of size on electrolyte apparent absorption rates and fermentative activity in dogs.** *Journal of Animal Physiology and Animal Nutrition* 88(9-10): 356-365. ISSN: 0931-2439.

NAL Call Number: 389.78 Z3

Abstract: The objectives of the study were to assess overall electrolyte absorption capacity as well as fermentative activity in dogs varying in body size in order to verify whether these parameters can explain the poor faecal quality in large dogs. Four breeds of dogs were used: six Miniature Poodles (MP), six Standard Schnauzers (SS), six Giant Schnauzers (GS) and six Great Danes (GD). Net absorption rates of electrolytes were assessed by calculating the apparent digestibility of sodium and potassium and measuring their content in stool. Fermentative activity was calculated by measuring faecal concentrations of lactic acid and short-chain fatty acids. The results showed higher faecal concentrations of fermentation products and electrolytes as well as poorer digestibility of electrolytes in Giant Schnauzers and Great Danes. Strong positive correlations were found between these different parameters and stool quality (scores and moisture). Lower overall electrolyte absorption and higher fermentative activity could thus be factors capable of explaining poorer faecal quality in these two large dog breeds.

Descriptors: animal care, digestive system, ingestion and assimilation, body size absorption relationship, fecal quality, fermentation products.

Wedekind, K.J., S. Yu, and G.F. Combs (2004). **The selenium requirement of the puppy.** *Journal of Animal Physiology and Animal Nutrition* 88(9-10): 340-347. ISSN: 0931-2439.

NAL Call Number: 389.78 Z3

Abstract: Current selenium (Se) recommendations for the puppy are based on extrapolation from other species (0.11 mg Se/kg diet). The purpose of this study was to experimentally determine the Se requirement in puppies. Thirty beagle puppies (average = 8.8 weeks old) were utilized in a randomized complete block design with age, litter and gender used as blocking criteria. Puppies were fed a low Se (0.04 mg Se/kg diet) torula yeast-based diet for 14 days (pre-test period) after which this same diet was supplemented with five levels of Na₂SeO₃ for 21 days (experimental period) to construct a response curve (0, 0.13, 0.26, 0.39 or 0.52 mg Se/kg diet). Response variables included Se concentrations and Se-dependent glutathione peroxidase activities (GSHpx) in serum as well as serum total triiodothyronine (TT3), serum total thyroxine (TT4) and serum free T₄ (FT₄). No significant changes in food intake and body weight gain occurred, and no clinical signs of Se deficiency were observed. A breakpoint for serum GSHpx could not be determined in our study due to analytical difficulties. A broken-line, two-slope response in serum Se occurred with a breakpoint at 0.17 mg Se/kg diet. When Se from the basal diet was added to this estimate, the breakpoint for serum Se equated to 0.21 mg Se/kg diet. TT3 increased linearly with increasing Se intake, whereas TT4 was unchanged. However, the ratio of TT₄ : TT₃ decreased linearly in response to supplemental Se. In summary, although we estimated the selenium requirement for the puppy based on serum Se, our 0.21 mg Se/kg diet estimate is higher than that seen for adult dogs, kittens, rats or poultry (0.13, 0.15, 0.15 and 0.15 mg Se/kg diet respectively). This difference may be due to the fact that GSHpx was used as the biomarker of Se status.

Descriptors: animal care, nutrition, body weight, diet regimen, food intake.

Yaissle, J.E., C. Holloway, and C.A.T. Buffington (2004). **Evaluation of owner education as a component of obesity treatment programs for dogs.** *Journal of the American Veterinary Medical Association* 224(12): 1932-1935. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: Objective-To compare results of a conventional obesity treatment program with those of an obesity treatment program that included education of owners of obese dogs. Design-Nonblinded prospective clinical trial. Animals-60 obese dogs with a body condition score (BCS) of 8/9 or 9/9. Procedure-Dogs were randomly assigned to control or owner education (EDU) treatment groups. A 6-month weight loss period was followed by an 18-month weight maintenance period. Daily caloric intake to induce loss of 1 % of body weight/wk was calculated for each dog after assessment of prior diet history. The daily caloric intake for weight maintenance was estimated to be 20% greater than that calculated for weight loss with adjustments of

+/- 5% as required. Weight and BCS were recorded monthly for each dog. Owners of dogs in the EDU group were required to attend monthly classes that addressed nutrition-related topics during the 6-month weight loss period. Results-Dogs in both treatment groups had significantly lower weight at the end of the weight loss period, compared with initial weight. Mean weight loss at 6 months was 14.7% in the control group and 15% in the EDU group; this difference was not significant. During the weight maintenance period, percentage weight loss was maintained in both treatment groups. Mean changes in BCS at 6 months (relative to time 0) were -1.5 in the control group and -1.7 in the EDU group. At 24 months, mean changes in BCS (relative to time 0) were -2.1 in the control group and -2.2 in the EDU group. No significant differences in BCS were identified between treatment groups at either 6 or 24 months. Conclusions and Clinical Relevance-Mean decrease in BCS of 2 and mean weight loss of 15% were achieved and maintained in all dogs. An obesity treatment program that included dietary changes and monthly weight checks during the weight loss and weight maintenance periods was sufficient to achieve these results. **Descriptors:** animal care, education, nutrition, veterinary medicine, obesity, nutritional disease, prevention and control, therapy, body condition score, diagnostic techniques, caloric intake, diet history, owner education, treatment program, weight loss, weight maintenance.

Yamka, R.M., S.E. Kitts, A.D. True, and D.L. Harmon (2004). **Evaluation of maize gluten meal as a protein source in canine foods.** *Animal Feed Science and Technology* 116(3-4): 239-248. ISSN: 0377-8401.

NAL Call Number: SF95.A55

Descriptors: dog foods, apparent digestibility, apparent digestibility, maize gluten meal (mgm), feeding value, grain product, poultry product.

General

Askew, H.R. (2002). *Treatment Behaviour for Problems in Dogs & Cats: A Guide for the Small Animal Veterinarian*. 2nd edition, Blackwell Science: Oxford , UK, 400 p. ISBN: 1405106204.

NAL Call Number: SF433 .A85 2002

Descriptors: dogs, cats, behavior therapy, problem behavior.

Baker, R. and C. Broadhead (2000). **Should cats and dogs be used as laboratory animals?** In: *Progress in the Reduction, Refinement and Replacement of Animal Experimentation: Proceedings of the 3rd World Congress on Alternatives and Animal Use in the Life Sciences , August 29 -September 2, 1999, Bologna, Italy*, p. 1725-1730.

Descriptors: animal experiments, animal welfare, laboratory animals, research, teaching, testing, cats, dogs.

Beaver, B.V. (1999). *Canine Behavior: A Guide for Veterinarians*, W.B. Saunders Co. Philadelphia, PA, 355 p. ISBN: 0721659659.

NAL Call Number: SF433.B4-1999

Abstract: This book is a companion to “Feline behaviour: a guide for veterinarians” by the same author (1992).

Descriptors: dog behavior, sensory communication, social behavior, sexual behavior, eliminative behavior, grooming behavior, literature review.

Braastad, B.O. and M. Bakken (2002). **Behaviour of dogs and cats**. In: P. Jensen (Editor), *The Ethology of Domestic Animals: An Introductory Text*, CABI Publishing: New York, NY, p. 173-192. ISBN: 08519960.

NAL Call Number: SF756.7 .E838 2002

Descriptors: behavior, behavioral problem, aggression, animal welfare, development, domestication, ethology, mating behavior, parental behavior, play, predatory behavior, social behavior, communication between animals.

Fogle, B. (1999). *Natural Dog Care*, 1st edition, DK Publishing: New York, NY, 160 p. ISBN: 0789441241.

NAL Call Number: SF427 .F6155 1999

Descriptors: health, diseases, alternative treatment.

Fogle, B. (2006). *ASPCA Complete Dog Care Manual.*, DK Publishing: New York, NY, 192 p. ISBN: 075661743X.

NAL Call Number: SF427 .F615 2006

Descriptors: care, feeding, grooming, handling, training, husbandry, breeds.
Notes: Complete dog care manual Dog care manual. Includes bibliographical references (p. 187).

Hoffman, M. and L.J. Ackerman (1998). *Dogs: The Ultimate Care Guide: Good Health, Loving Care, Maximum Longevity*, Rodale Press: Emmaus, PA, 450 p. ISBN: 0875965326 .

NAL Call Number: SF427.D57 1998

Descriptors: care, health, husbandry.

King, L. and R. Hammond (1999). *Manual of Canine and Feline Emergency and Critical Care.*, British Small Animal Veterinary Association: Cheltenham, UK, 300 p. ISBN: 0905214404.

NAL Call Number: SF778 .B73 1999

Descriptors: veterinary emergencies, critical care, wounds and injuries, treatment, dogs, cats.

Kreger, M.D. (1997). *Housing, Husbandry, and Welfare of the Dog: January 1993-June 1997.*, Quick bibliography series; 97-08., USDA, NAL, Animal Welfare Information Center: Beltsville, MD ,

Online: <http://www.nal.usda.gov/awic/pubs/oldbib/qb9708.htm>

NAL Call Number: aZ5071.N3 no.97 08

Descriptors: diseases, housing, animal welfare, bibliography.

Larkin, P. and M. Stockman (1997). *The Complete Dog Book: A Comprehensive, Practical Care and Training Manual and a Definitive Encyclopedia of World Breeds.*, Lorenz Books: New York, NY , 256 p. ISBN: 1859673260.

NAL Call Number: SF426.L37 1997

Descriptors: breeds, history, care, training, husbandry.

Lindsay, S.R. (2000). *Handbook of Applied Dog Behavior and Training.* 1st edition, Iowa State University Press: Ames, Iowa , 410 p. ISBN: 0813807549 .

NAL Call Number: SF433 .L56 2000

Descriptors: behavior, training, adaptation, learning, domestication, neurobiology, development, assesment of behavior problems, treatment options.

Nichol, J. (2001). *A Lifetime Guide to Practical Pet Care: Better Health and Happier Homes for Dogs and Cats.*, Prentice Hall: Paramus, NJ , 467 p. ISBN: 0130430692.

NAL Call Number: SF427 .N533 2001

Descriptors: dogs, cats, disease, health, pet care, veterinary medicine.

- Schlegl Koffler, K. (1998). *Dogs: How to Care for Them, Feed Them, and Understand Them.*, Family pet., Barron's Educational Series: New York, NY, 127 p. ISBN: 0764150855.
NAL Call Number: SF426 .S3413 1998
Descriptors: care, husbandry, feeding, training.
Notes: Translation of: Der Hund.
- Stafford, K.J. (2006). *The Welfare of Dogs.*, Animal Welfare, Springer: Dordrecht, Netherlands, 280 p. ISBN: 1402043619; 1402043627.
NAL Call Number: HV4746 .S73 2006
Descriptors: welfare, population control programs, urban animal humanagment, battered pets, unwanted pets, electric training collars, pain, recognition, alleviation, docking, laboratory dogs, behavior, disease, nutrition, breeds.
Notes: SERIES TITLE: Animal welfare; v. 4. Includes bibliographical references (p. 237-274) and index.
- Von der Leyen, K. (2001). *Puppies: Selection and Character, Training and Games, Feeding and Care, Heath*, Barron's : Hauppauge, NY , 159 p. ISBN: 0764116010.
NAL Call Number: SF427 .V5913 2001
Descriptors: puppies, selection, care, training, health, husbandry.
- Yarnall, C. (1998). *Natural Dog Care: A Complete Guide to Holistic Health Care for Dogs*, 1st edition, Journey Editions: Boston, MA, 412 p. ISBN: 1885203470.
NAL Call Number: SF426.Y37 1998
Descriptors: dogs, health, diseases , alternative treatment, holistic veterinary medicine.
Notes: Includes bibliographical references (p. 368-378) and index.

Health

American Kennel Club (1998). **National parent club canine health conference of the American Kennel Club and the AKC Canine Health Foundation (St. Louis, Missouri, USA; October 31-November 3, 1997).** *Canine Practice* 23(1): 11-28. ISSN: 1057-6622.

NAL Call Number: SF991.A1C3

Abstract: This meeting contains abstracts of 28 papers, written in English, covering nutrition, genetics, eye diseases, endocrine disorders, and kidney disease in dogs.

Descriptors: endocrine disorders, endocrine disease, eye disease, kidney disease, urologic disease, genetics, nutrition, meeting summary.

Anderson, G.S. and N.R. Huitson (2004). **Myiasis in pet animals in British Columbia: the potential of forensic entomology for determining duration of possible neglect.** *Canadian Veterinary Journal* 45(12): 993-998. ISSN: 0008-5286.

NAL Call Number: 41.8 R3224

Abstract: Results of a survey of veterinarians in British Columbia included 25 past cases of myiasis and 10 active cases. Most respondents received at least 5 to 10 cases per year, with some as high as 30 per year. This study revealed some advantages and disadvantages of using forensic entomology in living animals.

Descriptors: neglect, forensic entomology, myiasis.

Battersby, I., K. Murphy, S. Tasker, and K. Papasouliotis (2006). **Retrospective study of fever in dogs: laboratory testing, diagnoses and influence of prior treatment.** *Journal of Small Animal Practice* 47(7): 370-376. ISSN: 0022-4510.

NAL Call Number: 41.8 J8292

Abstract: Objectives: To analyse the demographic information of dogs referred for investigation of fever, to determine the usefulness of various diagnostic investigations and to assess the effect of treatment before referral on the presence of fever at referral, the duration of the investigation and the ability to reach a final diagnosis. Methods: The clinical records of 66 dogs, in which fever was part of the clinical signs documented by the referring veterinary surgeon, were reviewed. The effects of treatment 24 hours before referral on temperature at initial consultation and on time to diagnosis were evaluated. The effect of body temperature at initial consultation on cost and on time to diagnosis was also determined. The effect of insurance on costs incurred was assessed. The utility of different diagnostic investigations was recorded, and cases were classified according to the final diagnosis. Results: Only 34.8 per cent of dogs were diagnosed with immune-mediated disease, with most frequent

diagnoses being steroid-responsive meningitis and polyarthritis. Treatment 24 hours before referral significantly increased the time to diagnosis ($P=0.004$) and affected the presence of fever at referral ($P=0.006$). Insurance status did not significantly affect cost incurred by the owner. Clinical Significance: This study documents a high incidence of immune-mediated disease in dogs referred for investigation of fever. It also documents a higher incidence of inflammatory central nervous system disease in febrile dogs than that reported previously. Of the diagnostic modalities employed in the majority of cases, radiography, cytology and bacteriological and fungal cultures (fluids/tissues) were the most useful. It is suggested that treatment is withdrawn or withheld before commencing diagnostic investigation of fever.

Descriptors: animal health, central nervous system, cytology, diagnosis, fever, immunological diseases, laboratory diagnosis, laboratory tests, medical treatment, radiography, small animal practice, veterinarians, dogs.

Benetka, V., J. Kolodziejek, K. Walk, M. Rennhofer, and K. Mostl (2006). **M gene analysis of atypical strains of feline and canine coronavirus circulating in an Austrian animal shelter.** *Veterinary Record* 159(6): 170-174. ISSN: 0042-4900.

NAL Call Number: 41.8 V641

Abstract: Coronavirus-positive samples of faeces collected in an Austrian animal shelter from 12 cats and 10 dogs were analysed by reverse transcriptase-pcr with primers amplifying a segment of the M protein gene, and by sequence analysis. In addition, the samples were subjected to S gene typing, using primers that differentiated between feline coronavirus (fcov) types I and II. A phylogenetic analysis of the M gene sequences revealed not only clearly segregating canine coronavirus (ccov) in the dogs, typical ccov sequences and the recently described fcov-like ccov, but also at least two genetic clusters of fcov in the cats, one species-specific, the other more closely related to fcov-like ccov. The M gene sequences of these new feline strains had at most 88 per cent identity with the fcov-like ccov strain 259/01 and only up to 85 per cent with any fcov sequence available in GenBank. In the phylogenetic tree they occupy an intermediate position between feline and canine coronaviruses.

Descriptors: coronavirus, animal shelters, Austria, dogs, cats, genetic techniques, M gene sequences.

Benjamin, S.A., A.C. Lee, and W.J. Saunders (1999). **Classification and behavior of canine mammary epithelial neoplasms based on life-span observations in Beagles.** *Veterinary Pathology* 36(5): 423-436. ISSN: 0300-9858.

NAL Call Number: 41.8 P27

Abstract: As part of a study of the effects of low-level radiation, 1343 Beagles, including 671 males and 672 females, were evaluated over their full lifetime for the occurrence of mammary neoplasia; there were 139 control males and 138 control females and 532 irradiated males and 534 irradiated females. All nodules found in

surgical specimens or at necropsy were evaluated histologically. The overall incidence, metastasis and recurrence rates, and contribution to mortality of mammary neoplasms were determined. A histogenetically based reclassification of epithelial mammary tumours is proposed. Of the 672 female dogs, 70.8% (476) had at least one mammary neoplasm; 60.7% (408) had more than one. Two male dogs had mammary neoplasms. Of 1639 mammary carcinomas in the 672 females, 18.7% (307) were classified as ductular carcinomas (arising from the small interlobular or intralobular ductules), whereas 80.7% (1,322) were classified as adenocarcinomas of other histogenetic origin. Of 73 fatal carcinomas, ductular carcinomas accounted for 48 fatalities (65.8%), whereas other adenocarcinomas accounted for only 20 fatalities (27.4%). Radiation had no effect on this ratio. Ductular carcinomas also had a higher rate of metastasis than did adenocarcinomas. It is concluded that existing classifications of mammary carcinomas do not recognize the characteristic morphological features, the degree of malignancy, and the prognostic importance of these ductular carcinomas. Metastasis rates did not differ between simple and complex carcinomas or between those lesions and adenocarcinomas in mixed tumours. True carcinosarcomas metastasized more frequently (100%, or 5/5) than did adenocarcinomas in mixed tumours (34.4%, or 22/64), emphasizing the importance of not lumping these tumours under the classification of malignant mixed tumours.

Descriptors: neoplasms, adenocarcinoma, carcinoma, classification, lesions, malignant course, metastasis, mortality, radiation, mammary gland diseases, mammary glands, adenoma.

Bensignor, E. and D.N. Carlotti (2002). **Sensitivity patterns to house dust mites and forage mites in atopic dogs: 150 cases.** *Veterinary Dermatology* 13(1): 37-42. ISSN: 0959-4493.

NAL Call Number: SF901.V47

Abstract: This study investigated intradermal test reactions to extracts of six species of mites in 150 dogs with atopic dermatitis. At least one positive reaction was seen in 120 animals (80%). *Dermatophagoides farinae* attracted the highest number of positive reactions (108 dogs, 90% of dogs and 72% of atopic dogs showing positive reactions). Positive reactions to other mites were not uncommon, with many dogs testing positive for *Dermatophagoides pteronyssinus* (32% of dogs tested), *Acarus siro* (35%), *Tyrophagus putrescentiae* (30%), *Glycyphagus domesticus* (27%) and *Lepidoglyphus destructor* (23%). Sensitivity to *D. farinae* alone occurred commonly (57% of cases), but multiple sensitivities were seen frequently with the other mites. Cases of sensitivity to only one mite were also seen: *D. pteronyssinus* (five cases), *T. putrescentiae* (one case) and *G. domesticus* (one case). Further studies are needed to appreciate more clearly the precise role played by the different species of mite in canine atopic dermatitis.

Descriptors: case reports, diagnosis, house dust mites, skin tests, *Acarus siro*, *Dermatophagoides farinae*, *Dermatophagoides pteronyssinus*, dogs, *Glycyphagus domesticus*, *Lepidoglyphus destructor*, mites, *Tyrophagus putrescentiae*.

Language of Text: English, Summaries in German, Spanish and French.

Bhopale, V.M., E.K. Kupprion, F.T. Ashton, R. Boston, and G.A. Schad (2001). **Ancylostoma caninum: the finger cell neurons mediate thermotactic behavior by infective larvae of the dog hookworm.** *Experimental Parasitology* 97(2): 70-76. ISSN: 0014-4894 .

NAL Call Number: 436.8 Ex7

Descriptors: ancylostoma caninum, neurons, ultrastructure, host seeking behavior, nematode larvae.

Brodzki, A., W. Lopuszynski, R. Komsta, M. Orzelski, and I. Balicki (2004). **Die beurteilung der ergebnisse in der therapie und analyse des therapieverlaufs von malignen tumoren der zehen beim hund. [Analyses of the treatment of malignant digital neoplasia of dogs: Clinical, radiological and histological evaluation.]** *Tierarztliche Umschau* 59(10): 594-596, 599-600. ISSN: 0049-3864.

NAL Call Number: 41.8 T445

Descriptors: malignant digital neoplasia, malignant melanoma, neoplastic disease, mortality, surgery, pulmonary metastases, squamous cell carcinoma, clinical examination, histological examination, subungual squamous cell carcinoma, dogs.

Language of Text: German.

Day, T.K. (2003). **Current development and use of hemoglobin-based oxygen-carrying (HBOC) solutions.** *Journal of Veterinary Emergency and Critical Care* 13(2): 77-93. ISSN: 1534-6935.

NAL Call Number: SF778.J68

Descriptors: blood, hemoglobin, morbidity, oxygen, product development, literature reviews, hemoglobin-based oxygen-carrying solutions.

de Oliveira Mendes C, Paraguai de Souza E, Borja-Cabrera GP, Maria Melo Batista L, Aparecida dos Santos M, Ellner Parra L, Menz I, Palatnik M, and Palatnik de Sousa CB (2003). **IgG1/IgG2 antibody dichotomy in sera of vaccinated or naturally infected dogs with visceral leishmaniosis.** *Vaccine* 21(19-20): 2589-2597. ISSN: 0264-410X.

NAL Call Number: QR189.V32

Abstract: Canine antibody IgG, IgG1 and IgG2 anti-FML responses were investigated in dogs vaccinated with the fucose-mannose ligand (FML)-vaccine of *Leishmania donovani* and in dogs with naturally acquired visceral leishmaniosis. While similar levels of total IgG antibodies were seen in the seropositive naturally infected dogs and in vaccinees, significant differences between the groups were found

regarding their IgG1/IgG2 anti-FML antibody composition ($P < 0.005$). Higher IgG1 absorbencies were seen in infected dogs, while the IgG2 subtype was predominant in pre-immune sera, and in vaccinated animals, both after the first and the third dose ($P < 0.005$). The average ratio between IgG1/IgG2 was then 1.124 for infected animals and 0.733 for FML-vaccinees. Also, a significant increase in IgG2 antibodies was observed from the first to the third vaccine injection ($P < 0.005$). In the infected dogs, a high correlation between their IgG absorbance (Abs) values and the number of symptoms ($P = 0.017$) was disclosed. Thus, the analysis of IgG subclasses disclosed a dichotomous response to visceral leishmaniasis: IgG1 associated to natural infection and IgG2 associated to a humoral response subsequent to the FML-vaccine treatment. An IgG1/IgG2 ratio > 1 would characterize the sera of visceral leishmaniasis infected animals evolving towards the overt disease while ratios < 1 would characterize the sera response of vaccinated protected dogs.

Descriptors: immune system, parasitology, visceral leishmaniasis, parasitic disease, immunoglobulin G1, immunoglobulin G2, antibody dichotomy.

Decaro, N., A. Pratelli, A. Tinelli, V. Martella, M. Camero, D. Buonavoglia, M. Tempesta, A.M. Caroli, and C. Buonavoglia (2004). **Fecal immunoglobulin a antibodies in dogs infected or vaccinated with canine coronavirus.** *Clinical and Diagnostic Laboratory Immunology* 11(1): 102-105. ISSN: 1071-412X.

Abstract: Fecal secretory immunoglobulin A (IgA) antibodies in dogs infected or vaccinated with canine coronavirus (CCV) were evaluated by an enzyme-linked immunosorbent assay. The study was carried out with 32 fecal samples collected just before inoculation and at 28 days postinoculation. Five groups were studied: naturally infected dogs, experimentally infected dogs, dogs inoculated with a modified live (ML) CCV vaccine by the intramuscular route, dogs inoculated with an ML CCV vaccine by the oronasal route, and dogs given an inactivated CCV vaccine. Both the naturally and the experimentally infected dogs developed high levels of fecal IgAs. Interestingly, dogs inoculated with the ML CCV vaccine by the oronasal route developed levels of fecal IgA that were higher than those observed in the dogs inoculated with the same CCV vaccine by the intramuscular route or those observed in dogs inoculated with the inactivated vaccine. A relationship between the level of fecal IgAs to CCV and the degree of protection against CCV infection was observed.

Descriptors: immune system infection, ELISA, immunologic techniques, laboratory techniques.

Edwards, D.S., W.E. Henley, E.R. Ely, and J.L.N. Wood (2004). **Vaccination and ill-health in dogs: a lack of temporal association and evidence of equivalence.** *Vaccine* 22(25-26): 3270-3273. ISSN: 0264-410X.

NAL Call Number: QR189.V32

Descriptors: immune system, infection, pharmacology, immunization, vaccination,

canine health, evaluation, canine pathologies, ill health, equivalence evidence, temporal associations, field studies, methodology, questionnaire results, vaccination adverse events, vaccine safety studies.

Feldman, E.C., B. Hoar, R. Pollard, and R.W. Nelson (2005). **Pretreatment clinical and laboratory findings in dogs with primary hyperparathyroidism: 210 cases (1987-2004).** *Journal of the American Veterinary Medical Association* 227(5): 756-761. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: OBJECTIVE: To evaluate pretreatment clinical and laboratory findings in dogs with naturally occurring primary hyperparathyroidism. DESIGN: Retrospective study. ANIMALS: 210 dogs with primary hyperparathyroidism and 200 randomly selected, age-matched control dogs that did not have primary hyperparathyroidism. PROCEDURE: Medical records for dogs with primary hyperparathyroidism were reviewed for signalment; clinical features; and results of clinicopathologic testing, serum parathyroid hormone assays, and diagnostic imaging. RESULTS: Mean age of the dogs with primary hyperparathyroidism was 11.2 years (range, 6 to 17 years). The most common clinical signs were attributable to urolithiasis or urinary tract infection (ie, straining to urinate, increased frequency of urination, and hematuria). Most dogs (149 [71%]) did not have any observable abnormalities on physical examination. All dogs had hypercalcemia, and most (136 [65%]) had hypophosphatemia. Overall, 200 of the 210 (95%) dogs had BUN and serum creatinine concentrations within or less than the reference range, and serum parathyroid hormone concentration was within reference limits in 135 of 185 (73%) dogs in which it was measured. Urolithiasis was identified in 65 (31 %) dogs, and urinary tract infection was diagnosed in 61 (29%). Mean serum total calcium concentration for the control dogs was significantly lower than mean concentration for the dogs with primary hyperparathyroidism, but mean BUN and serum creatinine concentrations for the control dogs were both significantly higher than concentrations for the dogs with primary hyperparathyroidism. CONCLUSIONS AND CLINICAL RELEVANCE: Results suggest that urolithiasis and urinary tract infection may be associated with hypercalcemia in dogs with primary hyperparathyroidism, but that development of renal insufficiency is uncommon.

Descriptors: urinary tract infections, blood, dog diseases, urine, hypercalcemia, hyperparathyroidism, hypophosphatemia, retrospective studies, risk factors, urinalysis.

Foster, A.P., T.G. Knowles, A.H. Moore, P.D.G. Cousins, M.J. Day, and E.J. Hall (2003). **Serum IgE and IgG responses to food antigens in normal and atopic dogs, and dogs with gastrointestinal disease.** *Veterinary Immunology and Immunopathology* 92(3-4): 113-124. ISSN: 0165-2427.

NAL Call Number: SF757.2.V38

Abstract: In human food allergy, with or without concurrent atopy, there may be significant increases in serum allergen-specific IgE. Serological methods have been tried but are not currently recommended for diagnosis of suspected food allergy in dogs. The aim of this study was to investigate humoral immune responses to food antigens in dogs. Serum IgG and IgE antibodies specific for food antigens were measured by enzyme linked immunosorbent assay (ELISA) using polyclonal anti-dog IgG and IgE reagents. Antigens tested were beef, chicken, pork, lamb, chicken, turkey, white fish, whole egg, wheat, soybean, barley, rice, maize corn, potato, yeast and cow's milk. Three groups were examined: normal dogs, dogs with atopic dermatitis (AD); and dogs with one of four types of gastrointestinal (GI) disease: small intestinal bacterial overgrowth (SIBO), inflammatory bowel disease (IBD), food-responsive disease, and infectious diarrhoea. Statistically significant differences in food-specific antibodies were not detected between the GI subgroups. There were statistically significant differences in the IgE concentration between the normal dogs, and dogs with atopic or GI disease, for all of the antigens tested. There were statistically significant differences in the average IgG concentrations between the normal dogs, and dogs with atopic or GI disease, for all of the antigens tested, except egg and yeast. The relationship of antigen responses for pooled data was analysed using principle component analysis and cluster plots. Some clustering of variables was apparent for both IgE and IgG. For example, all dogs (normal and diseased) made a similar IgG antibody response to chicken and turkey. Compared with other groups, atopic dogs had more food allergen-specific IgE and this would be consistent with a Th2 humoral response to food antigens. Dogs with GI disease had more food allergen-specific IgG compared with the other groups. This may reflect increased antigen exposure due to increased mucosal permeability which is a recognised feature of canine intestinal disease.

Descriptors: atopic dermatitis, food allergy, infectious diarrhea, inflammatory bowel disease, humoral immune responses, food antigens, canines, serum IgG antibodies, serum IgE antibodies, beef, meat products, chicken, egg, poultry products, cow's milk, dairy products, lamb, pork, maize corn, grain products, barley, wheat, potato, vegetable, rice, soybean, turkey, white fish, seafood, yeast.

Foster, A.P., J.D. Littlewood, P. Webb, J.L.N. Wood, K. Rogers, and S.E. Shaw (2003).

Comparison of intradermal and serum testing for allergen-specific ige using a fcepsilonrialpha-based assay in atopic dogs in the uk. *Veterinary Immunology and Immunopathology* 93(1-2): 51-60. ISSN: 0165-2427.

NAL Call Number: SF757.2.V38

Abstract: Atopic dermatitis in dogs is a common allergic skin disease that affects substantial numbers of dogs in the UK. The purpose of this study was to compare the results of an intradermal test (IDT) and an in vitro test in a large cohort of dogs.

Dogs were intradermal tested with Greer allergens (Greer Labs Inc, Lenoir, NC, USA) using standard techniques. At the same time blood samples were drawn and submitted for evaluation by ELISA using the ALLERCEPT™ Definitive Allergen Panels for allergen-specific IgE, a commercial assay that uses a biotinylated recombinant extracellular domain of the high affinity Fc-epsilon receptor alpha chain protein (FcepsilonRIalpha). The allergens used in the two tests included grass, tree and weed pollens, moulds, flea saliva/whole flea extract and house dust mite species. The optical density readings from the ELISA for each allergen were compared with the results of the IDT for 265 dogs. The prevalence of positive reactions in the ELISA was equal to or greater than the results of the IDT in the case of almost all of the allergens, but two notable exceptions were the house dust mites *Dermatophagoides farinae* and *Dermatophagoides pteronyssinus*. These two allergens were the most common positive reactions by IDT (prevalence *D. farinae* 78.9%, *D. pteronyssinus* 66.4%). The results of the two tests were significantly different (McNemar's test, $P < 0.05$) for 16 of the 22 allergens. The sensitivities of the ELISA compared to the IDT (where there were more than 3 dogs with positive reactions in both tests) varied between 19.3 and 77.1% (*D. pteronyssinus* 19.3% and *D. farinae* 67.9%) and the specificities varied between 64.2 and 96.6% (*D. pteronyssinus* 96.6% and *D. farinae* 89.3%).

Descriptors: immune system, veterinary medicine, atopic dermatitis, genetic disease, immune system disease, integumentary system disease, elisa, immunologic techniques, laboratory techniques, definitive allergen panel, allercept, bioassay techniques, intradermal test, serum testing, allergen hypersensitivity.

Ghisleni, G. and F. Caretto (1999). **Alcune piante d'appartamento tossiche per il cane e il gatto. [Some house plants poisonous for cats and dogs.]**. *Veterinaria Cremona* 13(3): 65-73. ISSN: 0394-3151.

Descriptors: pets, reviews, poisonous plants, therapy, treatment, poisoning, toxic substances, *Gloriosa superba*, *Helleborus niger*.

Language of Text: Italian, Summary in English.

Ghorbel, A., S. Zrelli, S. Haddad, A. Ghram, A. Chabchoub, F. Landoulsi, and M.B. Ayed (2000). **Profils serologique et hematologique de l'ehrlichiose canine et humaine dans les chenils de Tunis et Bizerte (Tunisie). [Serological and haematological survey of canine and human ehrlichiosis in the kennels of Tunis and Bizerte (Tunisia).]**. *Revue De Medecine Veterinaire* 151(5): 429-436.

NAL Call Number: SF604.R48

Abstract: In a survey of 153 dogs and 195 dog owners in Tunisia, the seroprevalence of ehrlichiosis (*Ehrlichia canis* or *E. chaffeensis*) was 68.62% in dogs and 4.1% in owners. In the seropositive dogs, thrombocytopenia was the most frequently observed abnormality (63.3%).

Descriptors: seroprevalence, thrombocytopenia, surveys, dogs.

Language of Text: French, Summary in English.

Gieger, T.L., A.P. Theon, J.A. Werner, M.C. McEntee, K.M. Rassnick, and H.E.V. DeCock (2003). **Biologic behavior and prognostic factors for mast cell tumors of the canine muzzle: 24 cases (1990-2001).** *Journal of Veterinary Internal Medicine* 17(5): 687-692. ISSN: 0891-6640.

NAL Call Number: SF601.J65

Abstract: The medical records of 24 dogs with histologically confirmed mast cell tumours (MCT) of the muzzle were retrospectively evaluated to determine their biologic behaviour and prognostic factors. Information on signalment, tumour grade and stage, treatment methods, and pattern of and time to failure and death was obtained from the medical record. Twenty-three dogs were treated with combinations of radiotherapy, surgery, and chemotherapy; 1 dog received no treatment. There were 2 Grade I, 15 Grade II, and 7 Grade III tumours. Tumours were stage 0 (n=8), stage 1 (5), stage 2 (6), stage 3(4), and stage 4 (1). Mean and median survival times of treated dogs were 36 and 30 months, respectively. Prognostic factors affecting survival time included tumour grade and presence of metastasis at diagnosis. Dogs with Grade I and II tumours survived longer than dogs with Grade III tumours. Variables, including sex, age, gross versus microscopic disease, and treatment type were not found to affect survival. Local control rate was 75% at 1 year and 50% at 3 years. Tumour grade was the only variable found to affect local control. Dogs with Grade I tumours had longer disease-free intervals than those with Grade II tumours, and dogs with Grade II tumours had longer disease-free intervals than dogs with Grade III tumours. Eight of 9 dogs dying of MCT had local or regional disease progression. Muzzle MCT are biologically aggressive tumours with higher regional metastatic rates than previously reported for MCT in other sites.

Descriptors: case reports, clinical aspects, disease course, mast cells, metastasis, neoplasms, nose, pathogenesis, prognosis, reviews, skin diseases, therapy, dogs.

Giroux, P. (1998). **Chiropractic care of sporting dogs.** *Proceedings of the North American Veterinary Conference* 12: 690-691.

NAL Call Number: SF605.N672

Descriptors: medicine, spine, chiropractic medicine.

Notes: Meeting Information: Meeting held on January 10-14, 1998, Orlando, Florida.

Glass, E.V., R.A. Reid, A. Hillier, and G.R. Needham (2003). **Use of an amplified ELISA technique for detection of a house dust mite allergen (Der f 1) in skin and coat dust samples from dogs.** *American Journal of Veterinary Research* 64(2): 162-165. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: Objective: to use an amplified ELISA technique to document the presence and quantify the concentration of the house dust mite allergen, Der f 1, in skin and coat dust samples collected from dogs. Animals: 29 pet dogs of various breeds. Procedure: dogs were weighed, and body surface area in square meters was determined. Skin and coat dust samples were obtained by vacuuming dogs. Collected dust was analysed by use of standard and amplified ELISA techniques. Results: by use of the standard ELISA technique, Der f 1 was detected in skin and coat dust samples from 6 of 29 (21%) dogs. Mean concentration of Der f 1 in the 6 samples with positive assay results was 16.16 ng/ml (range, 5.61 to 31.24 ng/ml). Samples with negative assay results were retested for dust mite allergen by use of an amplified ELISA technique; an additional 14 dogs had positive assay results. Mean concentration of allergen was 0.36 ng/ml (range, 0.19 to 2.20 ng/ml). Combining both techniques, 20 of 29 (69%) dogs had positive assay results for Der f 1. Conclusions and Clinical Relevance: results of our study indicate that house dust mite allergens are present on the skin and in the coat of dogs, and this source of allergen may act as a reservoir for allergen exposure in hypersensitive dogs. Use of an amplified ELISA technique to determine environmental concentrations of house dust mite allergens in homes and on dogs will help to identify the relationship between immunologic findings and environmental exposures in dogs with atopic dermatitis.

Descriptors: allergens, coat, ELISA, house dust mites, skin, Dermatophagoides, dogs, mites.

Gmeiner, H., A. Zaisser, and K.J. Saers (2001). **Chirurgische Versorgung von malignen, rippenassoziierten Brustwandtumoren beim Hund. [Surgical treatment of malignant, rib cage associated tumors in dogs.]** *Praktische Tierarzt* 82(3): 166-172. ISSN: 0032-681X.

NAL Call Number: 41.8 P882

Abstract: The article describes a surgical treatment of malignant, rib cage associated tumors in the dog. After a description of clinical signs and pathology of the two most common neoplasia in this localization (osteosarcoma and chondrosarcoma) an overview of literature of this rarely performed operation is given. A combination of diaphragma transposition and abdominal flap was used. The results of these operations are shown and analysed in 10 cases. As a potential form of analgesia the intercostal nerve block was used. It was possible to verify a relatively positive prognosis for the treatment of chondrosarcoma.

Descriptors: abdomen, neoplasms, reviews, ribs, surgery, surgical operations, dogs.

Language of Text: German, Summary in English.

Goossens, H.A.T., J.H.J. Maes, and A.E.J.M. Van Den Bogaard (2003). **The prevalence of antibodies against b. Burgdorferi, an indicator for lyme borreliosis in dogs? A comparison of serological tests.** *Tijdschrift Voor Diergeneeskunde* 128(21): 650-657.

ISSN: 0040-7453.

NAL Call Number: 41.8 T431

Abstract: Five serological tests for the detection of IgM and IgG antibodies to *Borrelia burgdorferi*, the causative micro-organism of Lyme borreliosis (LB), were compared in 1177 sera from Dutch dogs: 401 healthy working hunting dogs, 100 healthy city pet dogs, 629 city dogs suspected of having LB with various clinical symptoms, and 47 hunting dogs with intermittent lameness. The results of the in-house species-independent enzyme immunoassay (i.e. an EIA which can be used to test serum samples from different animal species) showed a strong agreement (κ : 0.78-0.81) with those of an experimental and a commercially available EIA (Genzyme VirotechTM, Ruesselsheim, Germany) for the detection of canine IgG antibodies to *B. burgdorferi*. Furthermore, the sensitivity of the in-house EIAs for the detection of antibodies to *B. burgdorferi* was independent of the antigenic heterogeneity, as demonstrated by the results of sera from dogs suspected of LB with various clinical symptoms: lameness (n=60), and neurological (n=60) and skin disorders (n=52). Because of its high sensitivity for IgM antibodies, the indirect assay (DiagastTM, Pessac, France) proved to be an interesting tool for the detection of an acute Lyme infection in dogs. However, in this study a positive serological result could not be linked to any clinical symptom that has been related to LB in dogs. Results showed no difference in seroprevalence between dogs considered at high or at low risk of a *B. burgdorferi* infection. It was concluded that LB is an uncommon disease in the Dutch dog population despite the fact that many of Dutch dogs are infected with *B. burgdorferi*. Because of this low prevalence, the use of any immunoassay to support the clinical diagnosis of LB in dogs might be of limited value. Nevertheless, the species-independent EIA could be valuable in seroepidemiological studies when sera of several different animal species need to be tested.

Descriptors: infection, veterinary medicine, *Lyme borreliosis*, bacterial disease, diagnosis, symptom, diagast enzyme immunoassay, immunologic techniques, laboratory techniques, genzyme virotech enzyme immunoassay, in house species independent enzyme immunoassay, antigenic heterogeneity, method comparison, method sensitivity.

Goy Thollot, I., C. Pouzot, M. Chambon, and J.M. Bonnet (2005). **Regulation de la natremie et desequilibres hydrosodes chez le chien et le chat en soins intensifs.** [Natriemia regulation and hydro-electrolytic disequilibriums in dogs and cats in intensive care.]. *Revue De Medecine Veterinaire* 156(11): 556-568. ISSN: 0035-1555.

NAL Call Number: SF604.R48

Abstract: Sodium ion is the major component of the extra-cellular fluid. As an osmotic solute, he plays a key role in water movements between intra- and extracellular compartments, and in electrolytes homeostasis. Patients with hyponatremia

may have decreased, normal, or increased plasma osmolarity, whereas hypernatremia always induces increased plasma osmolarity. Hypoosmotic hyponatremia, called true hyponatremia, can be associated to normal, decreased or increased extracellular volume. Hypernatremia develops most often because of loss of pure water or hypotonic solutes from the animal, but in rare cases it results from gain of sodium. Hyponatremia induces a cellular edema and hypernatremia leads to an intracellular dehydration. Cerebral cells are particularly sensitive to water movements. Nervous symptoms are most likely associated with sodium disorders: confusion, seizures, coma or death. The clinical signs are more related to the rapidity of the onset than to the severity of the associated osmolarity variations. The main goals of treatment are to normalize plasma osmolarity and sodium concentration as well as to manage the underlying disease. Because of cerebral cells adaptations mechanisms, all corrections have to be progressive to avoid irreversible cerebral injury..

Descriptors: animal welfare, brain, cerebral cortex, extracellular fluids, hypernatremia, hyponatremia, intensive care, ions, osmolarity, sodium, cats, dogs.

Green, S.L., D.M. Bouley, M.J. Pinter, L.C. Cork, and G.T. Vatassery (2001). **Canine motor neuron disease: Clinicopathologic features and selected indicators of oxidative stress.** *Journal of Veterinary Internal Medicine* 15(2): 112-119. ISSN: 0891-6640.

NAL Call Number: SF601.J65

Descriptors: dog breeds, hereditary diseases, peripheral nerves, dominant lethals, neuromuscular diseases, atrophy, histopathology, blood chemistry, vitamin E, stress, creatine kinase, superoxide dismutase, glutathione peroxidase, enzyme activity, Brittany spaniels.

Guglielmo, A.A., A. Estrada Pena, A.J. Mangold, D.M. Barros Battesti, M.B. Labruna, J.R. Martins, J.M. Venzal, M. Arzua, and J.E. Keirans (2003). **Amblyomma aureolatum (pallas, 1772) and amblyomma ovale koch, 1844 (acari: ixodidae): hosts, distribution and 16s rdna sequences.** *Veterinary Parasitology* 113(3-4): 273-288. ISSN: 0304-4017.

NAL Call Number: SF810.V4

Abstract: DNA sequences of *Amblyomma aureolatum* (Pallas, 1772) and *Amblyomma ovale* Koch, 1844 were obtained to determine genetic differences between these tick species. Collections of these species are discussed in relation to distribution and hosts. Seven ticks collections (four from Brazil, one from Argentina, one from Uruguay and one from USA) house a total of 1272 *A. aureolatum* (224 males, 251 females, 223 nymphs and 574 larvae) and 1164 *A. ovale* (535 males, 556 females, 66 nymphs and 7 larvae). The length of the sequenced mitochondrial 16S rRNA gene fragment for *A. aureolatum* was 370 bp and for *A. ovale* was 373 bp. The DNA sequence analysis showed a 13.1% difference between the two species. Apart from

one male *A. ovale* found on a toad, all adult ticks were found on mammals. The majority of adult specimens of both tick species were removed from Carnivora (96.1 and 84.3% of *A. aureolatum* and *A. ovale*, respectively), especially from dogs (53.1% of *A. aureolatum*, and 46.4% of *A. ovale*). Collections on wild Canidae were higher for *A. aureolatum* (23.3%) than for *A. ovale* (7.1%). On the other hand, collections of *A. ovale* adults on wild Felidae were higher (18.3%) than findings of *A. aureolatum* (9.2%). The contribution of other mammalian orders as hosts for adults of *A. aureolatum* and *A. ovale* was irrelevant, with the exception of Perissodactyla because Tapiridae contributed with 13.0% of the total number of *A. ovale* adults. Adults of both tick species have been found occasionally on domestic hosts (apart of the dog) and humans. Most immature stages of *A. aureolatum* were found on Passeriformes birds, while rodents and carnivores were the most common hosts for nymphs and larvae of *A. ovale*. *A. aureolatum* has been found restricted to the Neotropical region, covering the eastern area of South America from Uruguay to Surinam, including northeastern Argentina, eastern Paraguay, southeastern Brazil and French Guiana. *A. ovale* showed a distribution that covers the Neotropical region from central-northern Argentina throughout the Neotropics into the Nearctic region of Mexico with a few records from the USA, also with collection sites in Paraguay, Bolivia, most Brazilian states, Peru, Ecuador, French Guiana, Surinam, Guyana, Trinidad & Tobago, Venezuela, Colombia, Panama, Costa Rica, Nicaragua, Belize, Guatemala and several states of Mexico.

Descriptors: biogeography, population studies, molecular genetics, parasitology, DNA sequence analysis, genetic techniques, laboratory techniques, genetic differences, host preferences, species distribution.

Gunnarsson, L., G. Zakrisson, D. Christensson, and A. Uggla (2003). **Transmission of the canine nasal mite, *Pneumonyssoides caninum*.** *Acta Parasitologica* 48(1): 64-67. ISSN: 1230-2821.

NAL Call Number: QL757.A27

Abstract: Three Beagle bitches were experimentally inoculated with between 28 and 36 *Pneumonyssoides caninum* mites. The bitches were housed together with a male Beagle for up to 33 weeks and mated when were in heat. The aim of the experiment was to study if transmission of *P. caninum* from the bitches to the puppies took place. Whelping occurred between 10 and 34 weeks post inoculation (p.i.). Two bitches were kept isolated with their litters until the puppies were 8 weeks old. Then they were euthanized and necropsies performed. The 3rd bitch had only one puppy born alive which died after one week. At that point, the bitch was euthanized and necropsies were performed. Two to 4 *P. caninum* mites were found in the inoculated bitches 18 to 42 weeks p.i. but no mites were found in their offspring. Thus, the transmission of *P. caninum* infection is still unknown.

Descriptors: Beagle, bitches, disease transmission, experimental infection, laboratory animals, *Pneumonyssoides caninum*.

Gwaltney Brant, S.M., J.C. Albretsen, and S.A. Khan (2000). **5-Hydroxytryptophan toxicosis in dogs: 21 cases (1989-1999)**. *Journal of the American Veterinary Medical Association*. 216(12): 1937-1940. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: To determine epidemiological characteristics, clinical findings, and treatment outcome of 5-hydroxytryptophan (5-HTP) toxicosis in dogs, the cases of 21 dogs with evidence of accidental 5-HTP ingestion were examined. Information was retrieved from the National Animal Poison Control Center database. Records of dogs ingesting 5-HTP between January 1989 and February 1999 were reviewed for information on signalment, dose ingested, clinical signs (onset, severity, duration), treatments administered, and outcome. Clinical signs of toxicosis developed in 19 of 21 (90%) dogs. Neurological signs included seizures (9 dogs), depression (6), tremors (5), hyperaesthesia (5), and ataxia (4). Gastrointestinal tract signs included vomiting or diarrhoea (12 dogs), signs of abdominal pain (3), and hypersalivation (2). Other clinical signs were hyperthermia (7 dogs) and transient blindness (3). Three dogs died. No important clinical laboratory or PM findings were reported. The doses of 5-HTP ingested ranged from 2.5 to 573 mg/kg (1.1 to 260 mg/lb) of body weight; the minimum toxic dose reported in the study was 23.6 mg/kg (10.7 mg/lb), and the minimum lethal dose was 128 mg/kg (58.1 mg/lb). Onset of signs ranged from 10 minutes to 4 hours after ingestion, and signs lasted up to 36 hours. Of 17 dogs with clinical signs of toxicosis that received treatment, 16 recovered; treatment consisted of decontamination, seizure control, thermoregulation, fluid therapy, and supportive care. It is concluded that ingestion of 5-HTP in dogs can result in a potentially life-threatening syndrome resembling serotonin syndrome in humans, which requires prompt and aggressive care.

Descriptors: poisoning, ataxia, blindness, diarrhoea, fluid therapy, hyperthermia, ingestion, vomiting, drug toxicity, adverse effects.

Halliwell, R.E.W., S.M. Gilbert, and M. Tan (1998). **Induced and spontaneous IgE antibodies to *Dermatophagoides farinae* in dogs and cats: evidence of functional heterogeneity of IgE**. *Veterinary Dermatology* 9(3): 179-184. ISSN: 0959-4493.

NAL Call Number: SF901.V47

Abstract: Sixty-five atopic dogs and 10 atopic cats from the UK were examined for *D. farinae*-specific IgE using intradermal skin tests and ELISA. 24 healthy dogs and 5 laboratory dogs, and 15 healthy cats and 10 laboratory cats were controls. There were no significant differences in IgE levels in atopic and in healthy animals. However, IgE levels in laboratory dogs and cats, presumably unexposed to house dust mites, were very low or undetectable. IgE antibodies were induced in 10 laboratory-reared cats

using low-dose antigenic stimulation in aluminium hydroxide. All cats developed detectable IgE, but not all developed positive skin tests. However, serum from those cats with positive skin tests gave positive Prausnitz-Kustner tests. It is suggested that the distinction between atopic and healthy dogs may result from a heterogeneity of either IgE or of the high-affinity mast cell receptor. The feline data indicated the existence of a heterogeneity of IgE.

Descriptors: IgE, ELISA, antibodies, heterogeneity, diagnosis, skin tests, skin diseases, blood serum, house dust mites, dermatitis, *Dermatophagoides farinae*, dogs, cats, Arachnida, Acari.

Language of Text: English, Summaries in French, Spanish and German.

Hansen, B.D. (2003). **Assessment of pain in dogs: veterinary clinical studies.** *ILAR Journal* 44(3): 197-205. ISSN: 1084-2020.

NAL Call Number: QL55.A1143

Abstract: Hundreds of thousands of animals are presented to US veterinarians annually for surgery or for evaluation of painful disease. This large population offers the opportunity for clinical research of both acute and chronic pain syndromes. Although there is growing interest by veterinary clinical specialists to explore the nature of animal pain and how best to treat it, this resource is relatively unknown to the pain research community. Computer-assisted collection of behavioral data has created new opportunities for characterizing the pain experience in animal species for the benefit of both animals and humans. This review describes the current state of veterinary clinical pain studies in dogs and an application of computer-assisted behavioral analysis.

Descriptors: surgery, disease, pain, assessment, chronic, acute, surgery, behavioral parameters, behavioral analysis.

Hart, R.C., R.M. Jerram, and K.S. Schulz (2000). **Il trattamento postoperatorio nei cani sottoposti a interventi di chirurgia spinale: Parte II.** [Postoperative care for dogs after spinal surgery. II.]. *Veterinaria Cremona* 14(2 Suppl.): 5-15. ISSN: 0394-3151.

Abstract: Postoperative complications are discussed.

Descriptors: postoperative care, spinal surgery, recovery, dogs.

Language of Text: Italian.

Harvey, J.W. (2006). **Pathogenesis, laboratory diagnosis, and clinical implications of erythrocyte enzyme deficiencies in dogs, cats, and horses.** *Veterinary Clinical Pathology* 35(2): 144-156. ISSN: 0275-6382.

NAL Call Number: SF601.A54

Abstract: Deficiencies of enzymes involved in erythrocyte metabolism can have significant effects on erythrocyte function and survival. Animals with pyruvate kinase (PK) or phosphofructokinase (PFK) deficiencies have shortened erythrocyte life spans and regenerative anemia. PK-deficient dogs (but not PK-deficient cats) develop pro-

gressive myelofibrosis and osteosclerosis of bone marrow and hemochromatosis and cirrhosis of the liver. PFK-deficient dogs have sporadic episodes of hyperventilation-induced intravascular hemolysis and hemoglobinuria. Cytochrome b5 reductase (Cb5R) deficiency in dogs and cats results in persistent methemoglobinemia and cyanotic mucous membranes. Severe deficiency of glucose-6-phosphate dehydrogenase, the rate-controlling enzyme in the pentose phosphate pathway, resulted in anemia with eccentrocytosis in an American saddlebred colt. Horses with erythrocyte flavin adenine dinucleotide (FAD) deficiency have both eccentrocytosis (attributable to severe deficiency in glutathione reductase activity) and methemoglobinemia (attributable to Cb5R deficiency); the dual enzyme deficiency occurs because FAD is a required cofactor for both enzymes. Erythrocyte enzyme deficiencies do not usually shorten life expectancy, except for PK-deficient dogs and potentially PFK-deficient dogs during a hemolytic crisis. Although enzyme deficiencies are rare causes of anemia and methemoglobinemia, the ability to diagnose deficient animals allows for the possibility of eliminating these undesirable traits in future breeding. DNA-based assays are available for PK and PFK deficiencies; whereas, biochemical tests of enzyme activity are required for other deficiencies. Continued research is needed to document additional enzyme deficiencies that likely occur and to develop additional DNA-based assays to detect heterozygous animals.

Descriptors: anemia, bone marrow, cirrhosis, clinical aspects, enzyme activity, enzymes, erythrocytes, glucose 6 phosphatase, hemochromatosis, hemoglobinuria, laboratory diagnosis, metabolic disorders, methemoglobinaemia, pathogenesis, phosphofructokinase, pyruvate kinase, cats, dogs, horses.

Hayashiya, S., K. Tani, T. Iwanaga, and Y. Taura (2001). **Hyposensitization therapy using a house dust-mite antigen on canine atopic dermatitis.** *Journal of the Japan Veterinary Medical Association* 54(3): 204-207 . ISSN: 0446-6454.

NAL Call Number: 41.9 J275

Abstract: Hyposensitization therapy using dust mite allergens was performed on 16 dogs with atopic dermatitis [Japan]. Efficacy evaluations conducted 6 months after initial hyposensitization therapy showed that 4 dogs (25.0%) demonstrated an excellent response, 7 dogs (43.8%) a good response, and 5 dogs (31.3%) a poor response. Overall, the therapy was considered successful in the cases of 11 dogs (68.8%), most of which improved within one or 2 months. In short, hyposensitization therapy using house dust mite allergens are effective in treating dogs with atopic dermatitis.

Descriptors: allergens, dermatitis, house dust mites, immune desensitization, atopy, arthropod allergies, skin diseases, dogs, Dermatophagoides.

Language of Text: Japanese, Summary in English.

Hillier, A., L.K. Cole, K.W. Kwochka, and C. McCall (2002). **Late-phase reactions to intradermal testing with dermatophagoides farinae in healthy dogs and dogs with house dust mite-induced atopic dermatitis.** *American Journal of Veterinary Research* 63(1): 69-73. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: Objective: To determine the prevalence of late-phase reactions to intradermal testing with *Dermatophagoides farinae* in healthy dogs and dogs with atopic dermatitis and an immediate reaction to *D farinae*. Animals: 6 healthy dogs and 20 dogs with atopic dermatitis and immediate reactions to *D farinae*. Procedure: Intradermal tests were performed with *D farinae* at 1:1,000 wt/vol and 1:50,000 wt/vol concentrations, and skin reactivity was evaluated after 0.25, 6, and 24 hours. Serum *D farinae*-specific IgE antibodies were assayed. Extent of lesions (atopy index) and pruritus (visual analogue scale) were evaluated in dogs with atopic dermatitis. Results: Late-phase reactions were observed in healthy dogs at 6 hours (n=2 dogs) and 24 hours (1) with the 1:1,000 wt/vol concentration, and at 6 hours (1) and 24 hours (1) with the 1:50,000 wt/vol concentration of allergen. Late-phase reactions in healthy dogs were only observed in dogs with an immediate reaction to *D farinae*. Late-phase reactions were observed in 11 of 20 dogs with atopic dermatitis at 6 and 24 hours with the 1:1,000 wt/vol concentration and in 10 of 20 at 6 and 24 hours with the 1:50,000 wt/vol concentration of allergen. There was no difference in mean atopy index, mean visual analogue scale of pruritus, or mean serum *D farinae*-specific IgE concentration of dogs with a late-phase reaction, compared to dogs without a late-phase reaction. Conclusions and Clinical Relevance: Late-phase reactions may be observed after an immediate reaction to intradermal skin testing in healthy and allergic dogs but are more commonly observed in dogs with atopic dermatitis.

Descriptors: *Dermatophagoides farinae*, house dust mites, atopy, dermatitis, skin tests, allergic reactions, allergens, dosage, clinical aspects, IgE, immune system, integumentary system, veterinary medicine, house dust mite induced atopic dermatitis, genetic disease, immune system disease, integumentary system disease, lesion, injury, pruritus, atopy index, evaluation method, intradermal testing, detection method, visual analogue scale, evaluation method, late phase reactions.

Hillier, A., K.W. Kwochka, and L.R. Pinchbeck (2000). **Reactivity to intradermal injection of extracts of dermatophagoides farinae, dermatophagoides pteronyssinus, house dust mite mix, and house dust in dogs suspected to have atopic dermatitis: 115 cases (1996-1998).** *Journal of the American Veterinary Medical Association* 217(4): 536-540. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: Objective: To compare reactivities to intradermal injection of extracts of *Dermatophagoides farinae*, *Dermatophagoides pteronyssinus*, house dust mite mix, and house dust in dogs suspected to have atopic dermatitis. Design: Retrospective

study. Animals: 115 dogs. Procedures: Records of all dogs suspected to have atopic dermatitis that underwent intradermal testing between October 1996 and July 1998 were reviewed. Reactivities to intradermal injection of crude mixed house dust mite (1:25,000 wt/vol) and crude house dust (25 PNU/ml) extracts were compared with reactivities to intradermal injection of individual extracts of *D farinae* and *D pteronyssinus* (1:50,000 wt/vol). Results: Ninety dogs were confirmed to have atopic dermatitis including 61 of the 69 dogs with positive reactions to either or both of the individual house dust mite extracts. Intradermal testing with the mixed house dust mite extract had sensitivity of 75%, specificity of 96%, and accuracy of 83%. Intradermal testing with the house dust extract had sensitivity of 30%, specificity of 93%, and accuracy of 56%. Conclusions and Clinical Relevance: Results suggest that use of crude mixed house dust mite and crude house dust extracts for intradermal testing in dogs is not as accurate a method of determining house dust mite hypersensitivity as is the use of individual *D farinae* and *D pteronyssinus* extracts mainly because of the high percentage of false-negative results. Extracts of individual house dust mites are recommended for intradermal testing of dogs suspected to have atopic dermatitis.

Descriptors: skin tests, *Dermatophagoides farinae*, *Dermatophagoides pteronyssinus*, house dust mites, house dust, atopy, dermatitis, accuracy, immune system, veterinary medicine.

Hirose, M., S. Chiba, and K.R. Laurita (2003). **Pacap causes triggered activity in isolated canine left atria.** *Journal of Pharmacological Sciences* 91 (Supl.): 98P. ISSN: 1347-8613.

Descriptors: atrial fibrillation, heart disease, action potentials, left atria, pacap.

Notes: Meeting Information: 76th Annual Meeting of the Japanese Pharmacological Society, Fukuoka, Japan; March 24-26, 2003.

Hoffman, M. and L.J. Ackerman (1998). **Dogs: The Ultimate Care Guide: Good Health, Loving Care, Maximum Longevity**, Rodale Press: Emmaus, PA, 450 p. ISBN: 0875965326 .

NAL Call Number: SF427.D57 1998

Descriptors: care, health, husbandry.

Holloway, S.A. (1998). **Stress- and performance-related illness in sporting dogs.** In: M.S. Bloomberg, J.F. Dee and R.A. Taylor (Editors), *Canine Sports Medicine and Surgery*, Saunders: Philadelphia, PA, p. 28-34. ISBN: 0721650228.

NAL Call Number: SF991.6.C36 1998

Descriptors: dogs, stress, athletic performance, disease control, physiology, racing animals, pathogenesis, diagnosis, treatment, prevention, greyhound, symptoms, literature reviews.

Holm, J.L., D.L. Chan, and E.A. Rozanski (2003). **Acute pancreatitis in dogs.** *Journal of Veterinary Emergency and Critical Care* 13(4): 201-213 . ISSN: 1534-6935.

NAL Call Number: SF778.J68

Descriptors: diagnostic techniques, drug therapy, necrosis, pancreatitis, physiopathology, prognosis, surgical operations, dogs.

Holton, L., J. Reid, E.M. Scott, P. Pawson, and A. Nolan (2001). **Development of a behaviour-based scale to measure acute pain in dogs.** *Veterinary Record* 148(17): 525-531. ISSN: 0042-4900.

NAL Call Number: 41.8 V641

Abstract: A composite scale for assessing pain in dogs in a hospital setting has been developed on the basis of observations of their behaviour. Initially, 279 words and expressions suggested by 69 veterinary surgeons were reduced into 47 words and expressions which were allocated into 7 behaviour categories: demeanour and response to people, posture, mobility, activity, response to touch, attention to painful area and vocalization. Three statistical methods, hierarchical agglomerative cluster analysis, Cronbach's alpha coefficient, and analysis of variance with multiple comparisons and empirical cumulative distributions, were used to validate these procedures, and a questionnaire accompanied by a list of definitions was designed around the expressions. The new composite scale is more detailed than previously reported scales for assessing pain in dogs on the basis of their behaviour, and the methods used in its development are based on sound scientific principles.

Descriptors: analytical methods, animal behavior, pain, posture, vocalization.

Horak, I.G. and S. Matthee (2003). **Parasites of domestic and wild animals in South Africa. Xliii. Ixodid ticks of domestic dogs and cats in the Western Cape province.** *Onderstepoort Journal of Veterinary Research* 70(3): 187-195. ISSN: 0030-2465.

NAL Call Number: 41.8 On1

Abstract: Ticks were collected at monthly intervals for 16 consecutive months from individual dogs by their owners in or close to the town of Stellenbosch, Western Cape Province. They were also collected for 27 consecutive months from dogs presented for a variety of reasons at three veterinary clinics in Stellenbosch, and from dogs upon admission to an animal welfare shelter. At one of the veterinary clinics ticks were also collected from cats. Dog owners collected six ixodid species from their pets and the most numerous of these were *Haemaphysalis leachi* and *Rhipicephalus gertrudae*. Twelve ixodid tick species and the argasid tick, *Otobius megnini* were collected from dogs at veterinary clinics and the animal shelter, and *H. leachi*, *R. gertrudae* and *Rhipicephalus sanguineus* were the most numerous. A total of nine dogs were infested with the Karoo paralysis tick, *Ixodes rubicundus*. No clear pattern of seasonality was evident for *H. leachi*, which was present throughout the year. The largest numbers of adult *R. gertrudae* were generally present from August to October, while adult *R.*

sanguineus were collected during October 2000, February and March 2001, from January to April 2002 and during October 2002. Five ixodid tick species, of which *H. leachi* was the most numerous and prevalent, were collected from cats.

Descriptors: epidemiology, population studies, parasitology, veterinary medicine, tick infestation, parasitic disease, seasonality.

Horwitz, D., D.S. Mills and S. Heath (2002). ***BSAVA Manual of Canine and Feline Behavioural Medicine.***, British Small Animal Veterinary Association: Quedgeley, Gloucester, 288 p. ISBN: 0905214595.

NAL Call Number: SF433 .B79 2002

Descriptors: dogs, cats, behavior, behavior therapy.

Hoskins, J.D. and C.E. Swiderski (2006). **Neonatal care of puppy, kitten, and foal.**

In: D.M. McCurnin and J.M. Bassett (Editors), *Clinical Textbook for Veterinary Technicians.*, 6th edition, Elsevier Saunders: St. Louis, MO, p. 382-399. ISBN: 0721606121.

NAL Call Number: SF745 .C625 2006

Descriptors: newborn animals, puppies, kittens, young animals, foals, husbandry, dogs, cats, horses.

Hunter, T.L. (2001). **Acute respiratory distress syndrome in a 10-year-old dog.** *Canadian Veterinary Journal* 42(9): 727-729. ISSN: 0008-5286.

NAL Call Number: 41.8 R3224

Descriptors: diagnosis, hematology, histopathology, postmortem examinations, respiratory diseases, acute respiratory distress syndrome.

Language of Text: English, Summary in French.

Inokuma, H., S. Yamamoto, and C. Morita (1998). **Survey of tick-borne diseases in dog infested with *Rhipicephalus sanguineus* at a kennel in Okayama prefecture, Japan.** *Journal of Veterinary Medical Science* 60(6): 761-763. ISSN: 0916-7250.

NAL Call Number: SF604.J342

Abstract: Serological tests were performed to investigate extent of tick-borne diseases in dogs infested with *Rhipicephalus sanguineus* at a kennel in Okayama Prefecture. Three of 22 dogs (13.6%) were positive for *Ehrlichia canis*. Two of 19 dogs (10.5%) were positive for *Rickettsia japonica*. Three of 22 dogs (13.6%) were positive for *Babesia gibsoni*. None of these animals were positive for *Coxiella burnetii* or *Hepatozoon canis*. A microfilaria was detected in a drop smear of hemolymph from an engorged female tick, however species was not determined. It is possible that these ticks can transmit pathogens to domestic dogs which are rare in Japan.

Descriptors: infection, parasitology, vector biology, veterinary medicine, tick borne bacterial diseases, bacterial disease, tick borne parasitic diseases, parasitic disease.

Inoue, S., Y. Motoi, T. Kashimura, K. Ono, and A. Yamada (2003). **Safe and easy monitoring of anti-rabies antibody in dogs using his-tagged recombinant n-protein.** *Japanese Journal of Infectious Diseases* 56(4): 158-160. ISSN: 1344-6304.

Abstract: The virus neutralization (VN) test is a reliable indicator of adequate vaccination in animals. However, the VN test is tedious and complicated to perform. Enzyme-linked immunosorbent assay (ELISA), though rapid and simple compared to the VN test, is complicated and hazardous during preparation of the viral antigen. In an effort to overcome the disadvantage of ELISA, the recombinant His-tagged nucleoprotein (His-rNP) expressed in *Escherichia coli* was used as a safe antigen for ELISA (i.e., live virus was not used). Antirabies antibody levels were determined by fluorescent ELISA (FELISA) using His-rNP as an antigen. The presence of anti-rabies VN antibody was determined by the rapid fluorescent focus inhibition test (RFFIT). The VN titers by RFFIT were found to correlate well with the FITC-signal determined by the FELISA ($r=0.616$). The sensitivity and specificity of the FELISA were 91.7 and 100%, respectively. This study showed that the His-rNP could be useful as an antigen of ELISA to test for anti-rabies antibody in vaccinated dogs. Several studies in Japan have investigated the antibody level in the sera of vaccinated dogs. A safe and convenient test using His-rNP would contribute to our understanding of the status of herd immunity among not only domestic dogs but also stray dogs in Japan.

Descriptors: immune system, fluorescent ELISA, immunologic techniques, laboratory techniques, virus neutralization test, herd immunity status.

Itoh, N., N. Muraoka, M. Aoki, and T. Itagaki (2003). **Prevalence of *Strongyloides* spp. infection in household dogs.** *Kansenshogaku Zasshi* 77(6): 430-435. ISSN: 0387-5911.

Abstract: A total of 1,505 household dogs were investigated for the prevalence of *Strongyloides* spp. infection by fecal examination in relation to their fecal conditions, rearing environments, origins, age, sex and breed. *Strongyloides* spp. infection was demonstrated in 29 of 1,505 (1.93%) dogs. *Strongyloides stercoralis* was detected in 28 dogs, and *Strongyloides planiceps* was detected in one dog. The rate of *Strongyloides* spp. infection was higher in dogs reared indoors, originated from pet shops/breeding kennels and aged 1-6 months. The infected rate was higher in dogs excreting soft feces. No significant sex-related difference was observed in *Strongyloides* spp. infection. The rate was high in Pomeranians and low in mongrels. The detection of *S. stercoralis* in dogs reared indoors will involve a serious problem in public health, because the parasite has zoonotic potential. It suggests that a positive sanitary instruction against a dog's owner and a worker in pet shops/breeding kennels seems necessary for prevention of transmission from dogs to humans. Furthermore, the reliable treatment for dogs infected with *S. stercoralis* seems to be important.

Descriptors: household dogs, *Strongyloidiasis*, fecal examination, isolation, purification, zoonoses.

Jogeland, M., H. Raue, and U. Petersson (2002). **Inventering av invarteparasiter hos hundar i Skane 1999-2000.** [Inventory of internal parasites in dogs in Skane 1999-2000.]. *Svensk Veterinartidning* 54(13): 635-637. ISSN: 0346-2250.

NAL Call Number: 41.8 N813

Abstract: Samples were taken from 230 dogs living in Skane, the southern part of Sweden. The dog owners were supplied with sampling material and took care of the sampling themselves. Three faecal samples on three consecutive days were taken from each dog. These three samples were thereafter sent by post to a laboratory where they were carefully mixed into one collecting sample. This collecting sample was analysed by a NaCl-flotation method and Telemanns sedimentation method. Of the 230 sampled dogs 15 (6,5%) were positive, one dog with coccidia and 14 with *T. canis*. One of the dogs with *T. canis* also shed eggs from *Alaria alata*.

Descriptors: feces, infestation, *Alaria alata*, dogs, *Toxocara canis*, Sweden.

Language of Text: Swedish, Summary in English.

Junot, S., C. Decosne Junot, and E. Troncy (2002). **Diagnostic du coup de chaleur chez le chien et chez le chat.** [Diagnosis of heat stress in dogs and cats.]. *Point Veterinaire* 33(227): 38-40. ISSN: 0335-4997.

NAL Call Number: SF602.P6

Descriptors: clinical aspects, diagnosis, differential diagnosis, heat stress, physiopathology, cats, dogs.

Language of Text: French.

Junot, S., C. Decosne Junot, and E. Troncy (2002). **Traitement du coup de chaleur chez le chien et chez le chat.** [Treatment of heat stress in dogs and cats.]. *Point Veterinaire* 33(228): 38-40. ISSN: 0335-4997.

NAL Call Number: SF602.P6

Descriptors: body temperature, clinical aspects, diagnosis, heat stress, hyperthermia, cats, dogs.

Language of Text: French.

Kaenkangploo, D., P. Kamonrat, M. Kalpravidh, K. Duangdaun, K. Phiwipha, and K. Marissak (2002). **Radiographic evaluation of coxofemoral joint laxity in dogs. Part II: Comparison of stress-radiographic positioning techniques in dogs with hip dysplasia.** *Thai Journal of Veterinary Medicine* 32(3): 61-69. ISSN: 0125-6491.

NAL Call Number: SF604.T43

Abstract: Two stress-radiographic positioning techniques for evaluation of coxofemoral joint laxity in dogs with hip dysplasia were compared with the standard technique. Forty, healthy, large breed dogs were divided into two groups of 20 dogs. Group 1 had normal hips. Group 2 were dogs with mild to moderate grade of hip dysplasia according to the Orthopaedic Foundation for Animals (OFA) standard. Dogs were anesthetized and placed in dorsal recumbency before 3 radiographic tech-

niques, standard hip-extended, 60° and 90° stress techniques, were taken. For the 60° stress technique, hind legs were extended in parallel to each other at 60° to the table top and femoral heads were manually pushed craniodorsally during exposure. For the 90° stress technique, femurs were positioned perpendicular to the table top; stifles were 90° flexed and adducted and femoral heads were manually pushed in a craniodorsal direction during exposure. Subluxation index (SI) and dorsolateral subluxation score (DLS score) of coxofemoral joints were assessed from radiographs. The SI of normal dogs from standard, 60°, and 90° stress techniques were 0.15, 0.20, and 0.23, and of dysplastic dogs were 0.34, 0.40, and 0.41, respectively. The degrees of subluxation assessed from the two stress technique radiographs were significantly greater ($p < 0.05$) than those shown on the standard technique radiographs in both groups of dogs. DLS scores of normal dogs from standard, 60° and 90° stress techniques were 65.1%, 64.3%, and 61.0%, and of dysplastic dogs were 55.4%, 53.6%, and 47.6%, respectively. Mean of DLS scores assessed from the 90° radiographs was significantly lower ($p < 0.05$) than those assessed from radiographs of other two techniques in both groups of dogs. The findings suggested that the 90° stress technique is more efficient than the standard and 60° stress techniques for radiographic evaluation of coxofemoral joint laxity in dogs with mild hip dysplasia and early detection of hip dysplasia in dogs that show no clinical signs.

Descriptors: femur, hip dysplasia, hips, joints animal, radiography, dogs.

Language of Text: Thai, Summary in English.

Kakoma, I., A. Sainz, M. Tesouro, I. Amusatogui, C. Kim, J. Biggerstaff, J. McPeak, and M.G. Levy (2000). **Standardization of the diagnostic criteria for canine ehrlichiosis. Towards a universal case definition.** *Annals of the New York Academy of Sciences*. 916: 396-403. ISSN: 0077-8923.

Abstract: Canine ehrlichiosis is a highly variable syndrome presenting a significant differential diagnostic difficulty. It imitates many metabolic and infectious diseases and lacks standardized diagnostic criteria, common reagents, and database resources. A clinical diagnosis of canine ehrlichiosis may be based on the manifestation of fever, thrombocytopenia, anorexia, nasolacrimal discharge, epistaxis, and exclusion of autoimmune and common canine vector borne diseases. These parameters are not invariably observed especially in the atypical form of the disease often caused by species other than *Ehrlichia canis*. A definitive diagnosis is based on the presence of specific antibodies to ehrlichial agent(s), the demonstration of the aetiological agent(s) itself, or specific amplicons by a strigently quality controlled PCR protocol. The relationship of the various clinical and laboratory parameters, the status of the currently available tests, and their real or presumed predictive value are discussed in the context of stimulating an effort to formulate an international standard for the diagnosis of this and related diseases of man and animals.

Descriptors: anorexia, antibodies, autoimmune diseases , case definitions, thrombo-

cytopenia, *Ehrlichia canis*.

Notes: Meeting Information: 5th Biennial Conference of the Society for Tropical Veterinary Medicine, Key West, Florida, USA; June 12-16, 1999.

Kamonrat, P., D. Kaenkangploo, K. Phiwipha, and K. Duangdaun (2002). **Radiographic evaluation of coxofemoral joint laxity in dogs. Part I: New stress-radiographic positioning techniques.** *Thai Journal of Veterinary Medicine* 32(3): 47-59. ISSN: 0125-6491.

NAL Call Number: SF604.T43

Abstract: Two new stress-radiographic positioning techniques, namely 60° and 90° stress techniques, were introduced for quantifying hip joint laxity in dogs. The comparative characteristics and efficiency of these new techniques with angled hindlimbs were evaluated relative to the standard hip-extended radiographic technique. Forty, healthy, mongrel dogs with normal hip joint conformation were anesthetized and placed in dorsal recumbency before 3 radiographs of the standard, 60°, and 90° stress techniques were taken. For the 60° stress technique, hindlimbs were extended in parallel to each other at 60° angled to the table top and stifles were slightly rotated inward; femoral heads were manually pushed in a craniodorsal direction during exposure. For the 90° stress technique, femurs were positioned perpendicular to the table top; stifles were 90° flexed and adducted and femoral heads were manually pushed in a craniodorsal direction during exposure. The subluxation index (SI) and dorsolateral subluxation score (DLS score) were calculated from 3 radiographic views for both hip joints to quantitate the relative degree of joint laxity. Results of the study indicated that the 60° (SI=0.20±0.045; DLS score=62.5±7.96%) and 90° (SI=0.23±0.044; DLS score=61.2±9.47%) stress-radiographs yielded significantly ($p < 0.001$) higher degree of hip joint laxity than the standard technique (SI=0.17±0.035; DLS score=66.9±8.09%). The 90° stress technique is the most sensitive technique for measurement of the hip joint laxity as the SI values of the 90° stress technique were significantly ($p < 0.001$) higher than those of the 60° technique. The findings suggested that the 60° and 90° stress-radiographic positioning techniques, oriented similarly to those of a standing dog are more practical and efficient than the standard hip-extended technique for demonstrating maximal coxofemoral joint laxity in dogs with normal hip joint conformation. Both new techniques may prove useful in studies of hip joint laxity or subluxation related to canine hip dysplasia in more susceptible dogs.

Descriptors: diagnosis, femur, hip dysplasia, hips, joints animal, radiography, surgery, dogs.

Language of Text: Thai, Summary in English.

Kang, S., C. Lee, O. Park, J. Leem, H. Yoon, O. Kweon, S.M. Kang, C.H. Lee, O.J. Park, J.H. Leem, H.J. Yoon, and O.K. Kweon (2002). **Efficacy of fipronil-applied canine hair against house dust mites.** *Journal of Veterinary Clinics* 19(2): 215-218. ISSN: 1598-298X.

Abstract: It is known that house dust mites which settle on sofa, carpet, and dust in the house ignite asthma and allergic rhinitis. *Dermatophagoides farinae* and *D. pteronyssinus* are distributed widely and densely in Korea. This study was conducted to evaluate the efficacy of shed hair of dogs which were applied topically with fipronil (Frontline) against house dust mites. House dust mites were cocultured with fipronil-applied hair of dog for 12 h. The death rate of mites in the coculture was compared with that of mites cultured without hair. The larger amount of hair, the more mites were killed. The death rate of mites was significantly higher than control until 2 weeks after Frontline application. Hair which had been shed at 3 days after Frontline application always killed the smaller number of mites than those not shed. It is suggested that the use of Frontline in pets controls house dust mites effectively.

Descriptors: disease control, hair, mortality, *Dermatophagoides farinae*, *Dermatophagoides pteronyssinus*, dogs.

Language of Text: Korean, Summary in English.

Kayali, U., R. Mindekem, N. Yemadji, A. Oussiguere, S. Naissengar, A.G. Ndoutamia, and J. Zinsstag (2003). **Incidence of canine rabies in n'djamena, chad.** *Preventive Veterinary Medicine* 61(3): 227-233. ISSN: 0167-5877.

NAL Call Number: SF601.P7

Abstract: This work describes for the first time the incidence risk of passively reported canine rabies, and quantifies reported human exposure in N'Djamena (the capital of Chad). To diagnose rabies, we used a direct immunofluorescent-antibody test (IFAT). From January 2001 to March 2002, we were brought 34 rabies cases in dogs and three cases in cats. Canine cases were geographically clustered. The annual incidence risk of canine rabies was 1.4 (95% CI: 1.2, 1.7) per 1000 unvaccinated dogs. Most of the rabid dogs were owned-although free-roaming and not vaccinated against rabies. Most showed increased aggressiveness and attacked people without being provoked. Eighty-one persons were exposed to rabid dogs and four persons to rabid cats (mostly children < 15 years old). Most of the exposed persons were neighbours or family members of the animal owner. Most exposures were transdermal bites, but nearly half of all exposed persons did not apply any first wound care or only applied a traditional treatment. In N'Djamena, humans are often exposed to canine rabies but do not use the full-course post-exposure treatment and wound care is insufficient. Most rabid dogs would be accessible to parenteral vaccination. Pilot vaccination campaigns are needed to determine the success of dog mass vaccination in N'Djamena as a way to prevent animal and human rabies.

Descriptors: epidemiology, population studies, infection, public health, allied

veterinary medicine, rabies, viral disease, epidemiology, prevention and control, transmission, direct immunofluorescent antibody test, ifat, diagnostic techniques, immunologic techniques, laboratory techniques, vaccination.

Kayali, U., R. Mindekem, N. Yemadji, P. Vounatsou, Y. Kanninga, A.G. Ndoutamia, and J. Zinsstag (2003). **Coverage of pilot parenteral vaccination campaign against canine rabies in n'djamena, chad.** *Bulletin of the World Health Organization* 81(10): 739-744. ISSN: 0042-9686.

NAL Call Number: 449.9 W892B

Abstract: Canine rabies, and thus human exposure to rabies, can be controlled through mass vaccination of the animal reservoir if dog owners are willing to cooperate. Inaccessible, ownerless dogs, however, reduce the vaccination coverage achieved in parenteral campaigns. This study aimed to estimate the vaccination coverage in dogs in three study zones of N'Djamena, Chad, after a pilot free parenteral mass vaccination campaign against rabies. We used a capture-mark-recapture approach for population estimates, with a Bayesian, Markov chain, Monte Carlo method to estimate the total number of owned dogs, and the ratio of ownerless to owned dogs to calculate vaccination coverage. When we took into account ownerless dogs, the vaccination coverage in the dog populations was 87% (95% confidence interval (CI), 84-89%) in study zone I, 71% (95% CI, 64-76%) in zone II, and 64% (95% CI, 58-71%) in zone III. The proportions of ownerless dogs to owned dogs were 1.1% (95% CI, 0-3.1%), 7.6% (95% CI, 0.7-16.5%), and 10.6% (95% CI, 1.6-19.1%) in the three study zones, respectively. Vaccination coverage in the three populations of owned dogs was 88% (95% CI, 84-92%) in zone I, 76% (95% CI, 71-81%) in zone II, and 70% (95% CI, 66-76%) in zone III, Participation of dog owners in the free campaign was high, and the number of inaccessible ownerless dogs was low. High levels of vaccination coverage could be achieved with parenteral mass vaccination, Regular parenteral vaccination campaigns to cover all of N'Djamena should be considered as an ethical way of preventing human rabies when post-exposure treatment is of limited availability and high in cost.

Descriptors: immune system, infection, veterinary medicine, canine rabies, viral disease, pilot parenteral vaccination campaign, canine rabies immunization, coverage

Kelly, P.J., G.N. Eoghain, and D. Raoult (2004). **Antibodies reactive with bartonella henselae and ehrlichia canis in dogs from the communal lands of Zimbabwe.** *Journal of the South African Veterinary Association* 75(3): 116-120. ISSN: 1019-9128.

NAL Call Number: 41.8 So8

Abstract: The prevalences of antibodies against Bartonella henselae and Ehrlichia canis were determined in sera from 228 dogs in 5 communal lands of Zimbabwe, areas where traditional subsistence agro-pastoralism is practised. The sera were col-

lected from apparently healthy dogs during routine rabies vaccination programmes and tested with indirect fluorescent antibody assays using *B. henselae* (Houston-I) and *E. canis* (Oklahoma) as antigens. We found reactive antibodies (1:80) against *B. henselae* in 14 % of the dogs tested. Seropositive animals were found in Bikita (41 %; 17/42), Omay (13 %; 6/48), Chinamora (5 %; 2/38) and Matusadona (15 %; 7/48). No seropositive dogs were found in Chiredzi (0 %; 0/52). Antibodies reactive with *E. canis* (1:80) were found in 34 % of the dogs tested, from Bikita (88 %; 37/42), Chiredzi (31 %; 16/52), Omay (17 %; 8/48), Chinamora (26 %; 10/38) and Matusadona (15 %; 7/48). Our survey shows dogs in the communal lands of Zimbabwe are frequently exposed to *E. canis* and *B. henselae* or closely related species. Further studies are indicated to determine the pathogenicity of the organisms infecting these dogs and their clinical significance.

Descriptors: immune system, infection, pharmacology, bartonella infection, immunology, ehrlichiosis, bacterial disease, rabies, viral disease, drug therapy, prevention and control, fluorescent antibody assay, laboratory techniques.

Kemming, G.I., J.B. Messick, G. Enders, M. Boros, B. Lorenz, S. Muenzing, H. Kisch Wedel, W. Mueller, A. Hahmann Mueller, K. Messmer, and E. Thein (2004). **Mycoplasma haemocanis infection: A kennel disease?** *Comparative Medicine* 54(4): 404-409. ISSN: 1532-0820.

NAL Call Number: SF77 .C65

Abstract: *Mycoplasma haemocanis* (formerly *Haemobartonella canis*) is a red blood cell parasite that causes disease mainly in immunosuppressed and splenectomized dogs. Clinical outbreak of the disease resulted in failure of a large experimental project. We aimed to identify whether *M. haemocanis* has increased prevalence in kennel-raised dogs. In a prospective study, we compared the prevalence of *M. haemocanis* in whole blood (anti-coagulated by use of EDTA) collected from pet dogs (University of Illinois, Urbana Champaign, Ill.; n = 60) with that in blood from dogs raised in three distinct kennels in western Europe (WE; n = 23), eastern Europe (EE; n = 20), and North America (NA, n = 20). Screening included antibody testing and microscopy of blood smears. The presence of *M. haemocanis* was identified using a polymerase chain reaction (PCR) assay for specific DNA of the organism. None of the pet dogs (0%) was test positive for *M. haemocanis* DNA. *Mycoplasma haemocanis* was found in dogs tested at all of the kennels. Infection rate in the three kennels was 30,35, and 87%, respectively (all P 0.001 versus control, chi2-test). Latent infection with *M. haemocanis* was not a single observation in kennel-raised dogs. Prevalence may be higher than that in a pet dog population. The potential exists for these latent infections to adversely affect or confound research results.

Descriptors: animal care, blood and lymphatics, transport and circulation, epidemiology, population studies, immune system, infection, molecular genetics, veterinary medicine, PCR assay, diagnostic techniques, genetic techniques, laboratory

techniques, dog kennel site, immunosuppressed state, infection rate, veterinary epidemiology.

Khatlani, T.S., Z. Ma, M. Okuda, H. Inokuma, and T. Onishi (2003). **Autoantibodies against t-cell costimulatory molecules are produced in canine autoimmune diseases.** *Journal of Immunotherapy* 26(1): 12-20. ISSN: 1524-9557.

Abstract: Autoantibodies to surface molecules on lymphocytes have already been described in various immune conditions, such as, autoimmune diseases, infections, and blood transfusions. Because T-cell costimulatory molecules play a central role in the immune response of T-cells, we investigated the presence of autoantibodies against T-cell costimulatory molecules in canine autoimmune diseases. In this study, we prepared recombinant proteins of CTLA-4 (CD152) and CD28 and investigated the presence of autoantibodies against them in serum samples obtained from dogs with various autoimmune diseases and from healthy dogs as controls, using the recombinant GST fusion proteins by ELISA. Anti-CTLA-4 antibodies were found in 31.8% of patients with rheumatoid arthritis, 20% of patients with systemic lupus erythematosus, 12.5% of patients with pemphigus, 0% of patients with immune-mediated hemolytic anemia, and 0% of healthy donors. Anti-CD28 antibodies were not found in any of the patients or healthy donors. The ELISA results were further confirmed by immunoblotting. The presence of anti CTLA-4 antibodies suggests the existence of a CTLA-4-specific immune response. The autoantibodies against CTLA-4, demonstrated here for the first time in canine autoimmune diseases, may modulate the immune response in dogs with autoimmune diseases.

Descriptors: immune system, autoimmune disease, immune system disease, immune mediated hemolytic anemia, blood and lymphatic disease, pemphigus, integumentary system disease, rheumatoid arthritis, connective tissue disease, joint disease, systemic lupus erythematosus, elisa, immunologic techniques, laboratory techniques, immune response.

Kikuzaki, T., K. Suzuki, and T. Ajito (1999). **Abnormal behaviour in a dog with brain metastasis of adenocarcinoma.** *Journal of the Japan Veterinary Medical Association* 52(1): 23-26. ISSN: 0446-6454.

NAL Call Number: 41.9 J275

Descriptors: neoplasms, adenocarcinoma, brain, metastasis, brain diseases, histopathology, abnormal behavior.

Language of Text: Japanese, Summary in English.

Kim, J., Y. Lee, R. Tak, J.W. Kim, Y.J. Lee, and R.B. Tak (2003). **Occurrence of canine brucellosis in large kennels and characterization of *Brucella canis* isolates by PCR-RFLP.** *Korean Journal of Veterinary Research* 43(1): 67-75. ISSN: 1225-0198.

NAL Call Number: 41.9 T12

Abstract: A total of 260 dogs were randomly selected from two different breed

kennels, the first was with a history of brucellosis (group 1, n=126 dogs) and the second was a randomly selected breed kennel (group 2, n=134 dogs), and monitored for *Brucella canis* by 2-mercaptoethanol rapid agglutination test (2ME-RSAT) and bacterial culture method. For differentiation, PCR-RFLP using omp-31, wbkA and per genes were used for 52 *B. canis* strains (strain I) isolated in this study and 3 *B. canis* strains (strain II) isolated in 1994 in Korea. 2ME-RSAT revealed that 63/126 (50.0%) and 12/134 dogs (9.0%) were positive in group I and group II, respectively. Bacterial culture revealed that 47/126 (37.3%) and 5/134 dogs (3.7%) were positive in groups I and II, respectively. As a result of PCR-RFLP, omp-31 was amplified from all *Brucella* sp., except *B. abortus*. All *B. canis* isolates showed unique PCR-RFLP pattern following digestion with BmeI8I. However, all *Brucella* sp. showed the same PCR-RFLP pattern following digestion with SalI. PCR-RFLP analysis of wbkA analysis of per revealed that *B. abortus* 544 and *B. melitensis* 63/9 showed the same pattern, but different from *B. suis* and *B. canis* following digestion with HindIII.

Descriptors: brucellosis, diagnosis, diagnostic techniques, genes, polymerase chain reaction, restriction fragment length polymorphism, *Brucella abortus*, *Brucella melitensis*, dogs.

Language of Text: Korean, Summary in English.

King, L.G., J.S. Wohl, A.M. Manning, S.G. Hackner, M.R. Raffe, and G. Maislin (2001).

Evaluation of the survival prediction index as a model of risk stratification for clinical research in dogs admitted to intensive care units at four locations. *American Journal of Veterinary Research* 62 (6): 948-954. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Descriptors: dogs, survival, prediction, indexes, accuracy, animal hospitals, probability, calculation.

King, L. and R. Hammond (1999). ***Manual of Canine and Feline Emergency and Critical Care.***, British Small Animal Veterinary Association: Cheltenham, UK, 300 p. ISBN: 0905214404.

NAL Call Number: SF778 .B73 1999

Descriptors: veterinary emergencies, critical care, wounds and injuries, treatment, dogs, cats.

Klomp, A.E.M., B. Van De Sluis, L.W.J. Klomp, and C. Wijmenga (2003). **The ubiquitously expressed murr1 protein is absent in canine copper toxicosis.** *Journal of Hepatology* 39(5): 703-709. ISSN: 0168-8278.

NAL Call Number: RC845

Abstract: Background/Aims: Copper toxicosis (CT) in Bedlington terriers is an autosomal recessive disorder characterized by massive lysosomal copper accumulation in livers of affected dogs, and a defect in the biliary excretion of this metal. We

propose that MURR1, the gene defective in canine CT, has a role in the regulation of copper excretion into bile during copper overload. Methods: Polyclonal antibodies raised against full-length recombinant human MURR1 were used for immunoblot analysis and indirect immunofluorescence studies. Results: Using Western blot analysis, these antibodies abundantly detected MURR1 as a 23 kDa protein in liver extracts of mice and dogs, but MURR1 was undetectable in the livers of affected Bedlington terriers. MURR1 was also detected in different tissues and cell lines; in cell lines the protein was found both in cytosol and membrane preparations. Consistent with this observation, indirect immunofluorescence staining revealed that in some cells MURR1 was associated with a vesicular compartment diffusely localized throughout the cell. Conclusions: The genomic deletion in MURR1 results in complete absence of MURR1 protein. Based on the unanticipated subcellular localization, our results suggest a role for MURR1 in the regulation of vesicular copper sequestration during copper overload.

Descriptors: digestive system, ingestion and assimilation, metabolism, molecular genetics, toxicology, canine copper toxicosis, digestive system disease, genetic disease, metabolic disease, northern blot, genetic techniques, laboratory techniques, confocal immunofluorescence microscopy, imaging and microscopy techniques, immunologic techniques.

Komiya, T., K. Sadamasu, H. Toriniwa, K. Kato, Y. Arashima, H. Fukushi, K. Hirai, and Y. Arakawa (2003). **Epidemiological survey on the route of coxiella burnetii infection in an animal hospital.** *Journal of Infection and Chemotherapy* 9(2): 151-155. ISSN: 1341-321X.

Abstract: The source of Q fever infection, was investigated by serological and polymerase chain reaction (PCR) analysis of specimens from humans and pets in an animal hospital. Two animal health technicians showed a positive serological reaction against *Coxiella burnetii* at the start. One of the two positive subjects remained PCR-positive for about 1 year and the other converted to PCR-negative, but the IgG antibody titer remained at 1:128 after minocycline treatment. Among animals housed in the hospital, two dogs were PCR-positive at the start, and the infection was transmitted to three cats about 5 months later. All these animals became negative for *C. burnetii* DNA after minocycline treatment. Furthermore, *C. burnetii* was isolated from the sera of the two humans and two dogs. *C. burnetii* isolates from the humans and dogs were analyzed, and it was found that the sequence homology of the com1 region was high, 99.9%, and the QpH1 plasmid was detected. These results suggest that these isolates were the same type, and it was considered that the infection was derived from the dogs, though the time of infection could not be confirmed.

Descriptors: infection, pharmacology, Q fever, bacterial disease, epidemiological survey, applied and field techniques, polymerase chain reaction, genetic techniques, laboratory techniques.

Koo, K.T., G. Polimeni, J.M. Albandar, and U.M. Wikesjo (2004). **Periodontal repair in dogs: analysis of histometric assessments in the supraalveolar periodontal defect model.** *Journal of Periodontology* 75(12): 1688-1693. ISSN: 0022-3492.

Abstract: BACKGROUND: Traditionally, the mean value from histometric assessments of several histologic sections from the same site has been, used for the histometric characterization of the site. The histometric analysis of the supraalveolar periodontal defect model uses observations from buccal and lingual sites in three step-serial sections representing the central aspect of the mesial and distal root for the third and fourth mandibular premolar teeth. The objectives of this study were to investigate the correlations and determine whether there are significant differences in the measurement values of various histometric parameters between the three step-serial sections and to test the hypothesis that, in this animal model, histometric assessments using the most central section of each root are comparable to the mathematical means of corresponding assessments of the site using the three step-serial sections. METHODS: Histometric analysis using light microscopy, an attached digital camera system, and a personal computer-based image analysis system including a custom program for the supraalveolar periodontal defect model was performed on histologic sections acquired from one jaw quadrant in each of 12 dogs. The animals had received a protocol including placement of a coral biomaterial and guided tissue regeneration (GTR) membranes, and were evaluated following a 4-week healing interval. Twelve parameters were assessed using three central step-serial sections from each root. For each parameter, pair-wise comparisons were performed using the mixed models analysis of variance, and the correlations between measurements were assessed by the intraclass correlation coefficient (ICC). RESULTS: For all parameters assessed, there were no significant differences ($P > 0.05$) among the three sections. The differences between the central section and the means of the three step-serial sections were small and not statistically significant. Parameters that could be assessed on most or all specimens, such as defect height and area, membrane height, and bone regeneration area, showed high correlations among the three step-serial sections (intraclass coefficient [ICC] approximately 0.91 to 0.98), and between each of the three sections and the mean for the three step-serial sections ($ICC > \text{or} = 0.95$). The most central section had somewhat higher correlation with the mean than measurements made on the lateral sections. CONCLUSION: The results suggest that using the supraalveolar periodontal defect model representative histometric data can be obtained evaluating only the central section from each defect site.

Descriptors: periodontal defect model, histometric data, histologic sections, jaw quadrant.

Ksiazek, T.G., D. Erdman, and C.S. Goldsmith (2003). **A novel coronavirus associated with severe acute respiratory syndrome.** *New England Journal of Medicine* 348(20): 1953-1966. ISSN: 0028-4793.

NAL Call Number: 448.8 N442

Abstract: BACKGROUND: A worldwide outbreak of severe acute respiratory syndrome (SARS) has been associated with exposures originating from a single ill health care worker from Guangdong Province, China. We conducted studies to identify the etiologic agent of this outbreak. METHODS: We received clinical specimens from patients in seven countries and tested them, using virus-isolation techniques, electron-microscopical and histologic studies, and molecular and serologic assays, in an attempt to identify a wide range of potential pathogens. RESULTS: None of the previously described respiratory pathogens were consistently identified. However, a novel coronavirus was isolated from patients who met the case definition of SARS. Cytopathological features were noted in Vero E6 cells inoculated with a throatswab specimen. Electron-microscopical examination revealed ultrastructural features characteristic of coronaviruses. Immunohistochemical and immunofluorescence staining revealed reactivity with group I coronavirus polyclonal antibodies. Consensus coronavirus primers designed to amplify a fragment of the polymerase gene by reverse transcription-polymerase chain reaction (RT-PCR) were used to obtain a sequence that clearly identified the isolate as a unique coronavirus only distantly related to previously sequenced coronaviruses. With specific diagnostic RT-PCR primers we identified several identical nucleotide sequences in 12 patients from several locations, a finding consistent with a point-source outbreak. Indirect fluorescence antibody tests and enzyme-linked immunosorbent assays made with the new isolate have been used to demonstrate a virus-specific serologic response. This virus may never before have circulated in the U.S. population. CONCLUSIONS: A novel coronavirus is associated with this outbreak, and the evidence indicates that this virus has an etiologic role in SARS. Because of the death of Dr. Carlo Urbani, we propose that our first isolate be named the Urbani strain of SARS-associated coronavirus.

Descriptors: infection, severe acute respiratory syndrome, etiology, immunologic techniques, reverse transcriptase polymerase chain reaction, electron microscopy, serologic assay.

Kube, S., T. Owen, and S. Hanson (2003). **Severe respiratory compromise secondary to cervical disk herniation in two dogs.** *Journal of the American Animal Hospital Association* 39(6): 513-517. ISSN: 0587-2871.

NAL Call Number: SF601.A5

Abstract: Two dogs presented with acute tetraparesis, hypoventilation, and bradycardia with a second-degree atrioventricular heart block. Neurological examination localized both lesions to the cervical spine. Diagnostic imaging revealed a ventral extradural compression at the second to third cervical (C2-C3) region in one dog and at the third to fourth cervical (C3-C4) region in the other. Following surgical correction of the extruded disk, the hypoventilation and bradycardia resolved. Cervical disk extrusions are a common cause of acute tetraparesis in the dog. This report shows

that respiratory and cardiac complications may occur concurrently. The authors recommend screening dogs with cervical myelopathies for respiratory and cardiac dysfunctions and treating appropriately. Prompt surgical intervention and supportive care can improve the prognosis.

Descriptors: acute tetraparesis, hypoventilation, bradycardia, atrioventricular heart block, neurology, spine, imaging, cervical myelopathies, respiratory and cardiac dysfunctions, treatment options, surgical intervention.

Kuffer, M., K. Hartmann, and W. Kraft (1997). **Canine Parvovirose: Aspekte zu Epidemiologie, Klinik, Laborbefunden, Therapie und Impfung. [Canine parvoviral infection. Observations on epidemiology, symptoms, laboratory findings, treatment and vaccination.]**. *Tierärztliche Praxis* 25(5): 518-524.

NAL Call Number: SF603.V433

Abstract: Features of 82 cases of parvoviral infection seen at Munich during 1994 and 1995 were summarized. Ten dogs died from acute infection. Ten of the survivors required intensive care with fluid therapy and parenteral nutrition.

Descriptors: epidemiology, symptoms, treatment, intensive care, canine parvovirus.

Language of Text: German, Summary in English.

Kukekova, A.V., W. Wang, J.K. Lowe, E.A. Ostrander, G.D. Aguirre, and G.M. Acland (2003). **Exclusion of GNGT1 gene as a positional candidate for canine rcd2 disease**. In: *Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO) - Annual Meeting Abstract Search and Program Planner, May 4-8, 2003, Fort Lauderdale, FL, USA*, p. Abstract No. 2325.

Descriptors: rod cone dysplasia type 2 (rcd2), canine progressive retinal atrophy (PRA), dogs, molecular genetics, eye disease, genetic diseases, laboratory techniques.

Langova, V., A.J. Mutsaers, B. Phillips, and R. Straw (2004). **Treatment of eight dogs with nasal tumours with a alternating doses of doxorubicin and carboplatin in conjunction with oral piroxicam**. *Australian Veterinary Journal* 82(11): 676-680. ISSN: 0005-0423.

NAL Call Number: 41.8 Au72

Abstract: Objective To determine the efficacy and toxicity of chemotherapy in the treatment of canine nasal tumours. Design Retrospective clinical study Procedure Eight dogs with histologically confirmed nasal tumours were staged by means of complete blood count, serum biochemical analysis, cytological analysis of fine needle aspirate of the regional lymph nodes, thoracic radiographs and computed tomography scan of the nasal cavity. All dogs were treated with alternating doses of doxorubicin, carboplatin and oral piroxicam. All dogs were monitored for side effects of chemotherapy and evaluated for response to treatment by computed tomography scan of the nasal cavity after the first four treatments. Results Complete remission was achieved in four dogs, partial remission occurred in two dogs and two had stable

disease on the basis of computed tomography evaluation. There was resolution of clinical signs after one to two doses of chemotherapy in all dogs. Conclusions This chemotherapy protocol was efficacious and well tolerated in this series of eight cases of canine nasal tumours.

Descriptors: pharmacology, toxicology, tumor biology, nasal tumor, neoplastic disease, respiratory system disease, therapy, chemotherapy, complete blood count, diagnostic techniques, computed tomography scan, imaging and microscopy techniques, laboratory techniques, cytological analysis, serum biochemical analysis, thoracic radiography.

Larson, L.J. and R.D. Schultz (2006). **Effect of vaccination with recombinant canine distemper virus vaccine immediately before exposure under shelter-like conditions.** *Veterinary Therapeutics: Research in Applied Veterinary Medicine* 7(2): 113-118. ISSN: 1528-3593.

NAL Call Number: SF601 .V4745

Abstract: Vaccination with modified-live virus (MLV) canine distemper virus (CDV) vaccine has historically been recommended for animals in high-risk environments because of the rapid onset of immunity following vaccination. Recombinant CDV (rCDV) vaccine was deemed a suitable alternative to MLV-CDV vaccination in pet dogs, but insufficient data precluded its use where CDV was a serious threat to puppies, such as in shelters, kennels, and pet stores. In this study, dogs experimentally challenged hours after a single dose of rCDV or MLV vaccine became sick but recovered, whereas unvaccinated dogs became sick and died. Dogs vaccinated with a single dose of rCDV or MLV vaccine 1 week before being experimentally challenged remained healthy and showed no clinical signs. Dogs given one dose of rCDV vaccine hours before being placed in a CDV-contaminated environment did not become sick. These findings support the hypothesis that rCDV vaccine has a similar time-to-immunity as MLV-CDV vaccines and can likewise protect dogs in high-risk environments after one dose.

Descriptors: distemper virus, canine immunology, dogs, housing, animal classification, random allocation, risk factors, time factors, vaccines.

Larsson, C.E., M. Otsuka, N.S. Michalany, P.S.M. Barros, W. Gambale, and A.M.V. Safatle (2003). **Cryptococose canina: relato de caso. [Canine ocular cryptococcosis: A case report.]** *Arquivo Brasileiro De Medicina Veterinaria e Zootecnia* 55(5): 533-538. ISSN: 0102-0935.

NAL Call Number: SF604 .A76

Abstract: A case of cryptococcosis with ocular and cutaneous involvement is reported by the first time in Brazil in a dog. A two-year-old female German Shepherd living in a hold house with other five healthy dogs was infected through the contact with pigeon (*Columba livia*) feces. The illness started 90 days previously with

cutaneous and bone involvement resulting in characteristic clinical signs and lesions, in addition to a initially unilateral asymptomatic chorioretinitis. The diagnosis was established based on anamnesis, physical and dermatologic examinations and complementary exams (radiographs, skin biopsy and histopathology) and the isolation of a *Cryptococcus neoformans* var. *neoformans* strain was accomplished. There was a complete resolution of the disease after nine months of therapy using itraconazole (9mg/kg, q24h, PO) and no side effect was observed.

Descriptors: infection, integumentary system, sense organs, sensory reception, veterinary medicine, chorioretinitis, eye disease, cryptococcosis, fungal disease, histopathology, histology and cytology techniques, laboratory techniques, radiography, diagnostic techniques, skin biopsy, diagnostic techniques.

Language of Text: Portuguese.

Laszlo, M., P. Schawalter, G. Scholtysik, C. Bernasconi, and J. Schulze (1999). **Untersuchungen an Hunden uber das Verhalten von Vitamin C bei Stress und Schmerz. [Studies on the behaviour of vitamin C under stress and pain conditions in dog.]** *Kleintierpraxis* 44(4): 241, 262. ISSN: 0023-2076.

Abstract: Blood samples were obtained from 54 dogs of 4 breeds (German Shepherd, 10; Greyhound, 15; Labrador, 17; mongrels, 12) 2.5-9.25 years of age to determine reference values for vitamin C. From statistical analysis of the results, the dogs could be classified into 2 groups. Group A, the larger, heavier breeds German Shepherd and Labrador, had significantly higher plasma vitamin C contents (7.02 mg/litre) than lighter breeds (Greyhound and mongrel) in group B (4.91 mg/litre). Age and sex had no significant influence on plasma vitamin C. 30 dogs, 2.5 months to 14 years of age and of various breeds, with acute pain (18), sub-acute or chronic pain (9) or which had been castrated (3) were also examined. Vitamin C contents in plasma decreased in all dogs during periods dominated by pain and/or stress. After eliminating the causes of pain, vitamin C contents returned to normal several days later. Even stress had a negative effect on vitamin C. It is concluded that the hypothesis that hypertrophic osteodystrophy is due to low blood vitamin C cannot be sustained.

Descriptors: dog breeds, German Shepherd, Labrador Retriever, Greyhound, blood chemistry, ascorbic acid, pain, stress, bone diseases, fractures, rupture, tendons, ligaments, osteodystrophy, dogs.

Language of Text: German, Summary in English.

Leitner, M., J.E. Aurich, G. Galabova, C. Aurich, and I. Walter (2003). **Lectin binding patterns in normal canine endometrium and in bitches with pyometra and cystic endometrial hyperplasia.** *Histology and Histopathology* 18(3): 787-795. ISSN: 0213-3911.

Abstract: Cystic endometrial hyperplasia (CEH) and pyometra in the bitch are

dioestral syndromes, supposed to be caused by hormonal disturbances and changes in endometrial steroid hormone receptor levels. Histologically, the endometria show cystic dilated glands and, if bacteria succeed in invading the uterus, pyometra may develop in the following metoestrus. In this study, lectin histochemistry was performed on paraffin sections to compare carbohydrate expression of uterine glands and surface epithelium in healthy dogs and in dogs with CEH and pyometra. Lectin binding is a useful tool to identify glycoconjugates, especially of the glycocalyx, which has essential functions in the endometrium during reproduction. Uterine tissue was obtained from 18 healthy bitches in metoestrus or anoestrus and 18 bitches with a clinical diagnosis of CEH or pyometra. Normal endometria showed cycle-dependent changes in SBA, PNA, HPA and UEA binding during metoestrus and anoestrus. LCA did not show cycle-dependent changes and WGA bound to Golgi regions in the apical parts of surface epithelial cells only in metoestrous. Endometria with inflammatory alterations lost cycle-specific lectin binding patterns and, with increasing severity of pathological changes, showed a marked decrease in binding intensity to the glandular and surface epithelial glycocalyx and secretions. In dogs with CEH, unaltered glands with generally strong lectin binding to the glycocalyx and Golgi regions were found adjacent to altered glands. The decrease of lectin binding in pyometra cases is supposed to be a result of glandular exhaustion after cystic hyperplasia. In addition, bacterial adhesion to sugar residues on the uterine surface epithelium might impede lectin binding.

Descriptors: reproduction, cystic endometrial hyperplasia, pyometra, reproductive system disease.

Liska, W.D. and B.A. Poteet (2003). **Pulmonary embolism associated with canine total hip replacement.** *Veterinary Surgery* 32(2): 178-186. ISSN: 0161-3499.

NAL Call Number: SF911.V43

Abstract: Objective-To determine by pulmonary perfusion scans and ultrasonography if embolemia occurs during total hip replacement (THR) surgery in dogs. Study Design-Prospective clinical study. Animals-Forty client-owned dogs that had THR surgery. Methods-Thoracic radiographs were taken immediately after THR and immediately after completion of 99mTc-MAA lung scans. Scintigraphy was performed in 28 dogs, 48 hours after THR. Intraoperative ultrasonography (intercostal or transesophageal) was performed in another 12 dogs that had THR. The right atrium and ventricle and pulmonary outflow tract were observed during and for 5 to 8 minutes after femoral component insertion into medullary canals prepared by reaming, and lavage and aspiration of debris before filling with polymethylmethacrylate in dough stage. A modified Prospective Investigation of Pulmonary Embolism Diagnosis (PIOPED) classification system was used to evaluate lung scans. Results-No pulmonary radiographic abnormalities were identified. Segmental and subsegmental perfusion defects occurred in 23 (82%) dogs and were classified as

severe in 9 (32%) dogs, moderate in 11, and mild in 3. There was no particular lobe predilection. Patchy mulberry-appearing defects, indicative of fat embolism, were most common. Embolism was observed by ultrasound in 10 dogs. Variable-sized particles occurred in 8 dogs, particles and bubbles in 2 dogs, and no emboli were observed in 2 dogs. Embolism was observed within 10 seconds after femoral stem insertion and lasted < 1 minute. Pneumoemboli remained in the right atrium for > 8 minutes before dislodgement. Conclusion-Embolism of either air, particles, or both occurs in most dogs during THR surgery. Clinical Relevance-Most dogs seemingly spontaneously recover from pulmonary embolism that occurs during THR. The risk of clinical complications from this pulmonary embolism should be taken seriously, even though the exact morbidity and mortality rates are unknown.

Descriptors: hip replacement, pulmonary embolism, vascular disease, lung perfusion scintigraphy, pulmonary perfusion scan, radiography, right heart ultrasonography, total hip replacement, prospective investigation of pulmonary embolism diagnosis classification system.

Lord, L.K. and M. Podell (1999). **Owner perception of the care of long-term phenobarbital-treated epileptic dogs.** *Journal of Small Animal Practice* 40(1): 11-15. ISSN: 0022-4510.

NAL Call Number: 41.8 J8292

Abstract: A study was undertaken to evaluate owners' perception of the effect that epilepsy and long-term phenobarbital therapy had on the quality of pet and owner lifestyle. Selected owners in the Columbus (Ohio, USA) area who participated in a prospective, longitudinal clinical epilepsy study between July 1990 and July 1992 were sent a questionnaire at the end of the study. Inclusion criteria were dogs with a history of seizures without previous medical attention or therapy by any veterinarian before enrolment, subsequent determination of seizure aetiology using a standardized diagnostic protocol and treatment with phenobarbital for a minimum period of 6 months. Of the 22 questionnaires mailed, 19 were completed and returned. 10 dogs (53%) were classified with primary epileptic seizures and 9 (47%) were classified with secondary epileptic seizures. The majority of owners agreed that they would choose to treat their epileptic pet again rather than opt for other alternatives. Most owners disagreed that their pet was leading a poor quality of life after the start of phenobarbital therapy. A significant negative correlation existed between an owner's perception of the pet's quality of life and the amount of work required to care for the pet during the study period. It is concluded that many owners are willing to care for epileptic dogs on long-term phenobarbital treatment, regardless of the underlying cause.

Descriptors: phenobarbital, epileptiform attacks, drug therapy, treatment, quality of life, epilepsy.

Machon, R. (1999). **The recovery period care for cats and dogs recovering from general anaesthesia.** *Veterinary Continuing Education* 190: 211-216. ISSN: 0112-9643.

Descriptors: anesthesia, recovery, cats, dogs.

Madany, J., S. Winiarczyk, J.L. Gundach, W. opuszynski, and Z. Gradzki (2004). **Podkliniczna postac leishmaniozy psow: Obserwacje wasne. [Canine subclinical leishmaniasis: A study report .].** *Medycyna Weterynaryjna* 60(10): 1071-1074.

ISSN: 0025-8628.

NAL Call Number: 41.8 M463

Abstract: Leishmaniasis is a chronic, parasitical disease occurring both in humans and animals with varying symptoms. In Europe the disease most frequently occurs in the Mediterranean area. The aim of this study was to determine the health status of 7 Polish dogs that spent 3 months in the endemic area of Turkey. After the return of the dogs to Poland clinical signs and laboratory findings revealed changes in the skin, liver and kidneys. Anomalies of the skin varied but had no connection with leishmaniasis. Subclinical signs of hepatic and kidney diseases could have originated from infection by *Leishmania* sp. Serological analyses assessed by IFAT and ELISA revealed the presence of *Leishmania* antibodies in the dogs; the level of measured antibodies was low. Diagnosis of subclinical leishmaniasis was established. Because of the lack of clinical signs, no typical treatment was applied and special care to protect the immune system was taken instead. The protection program resulted in a recovery of clinical symptoms and a receded level of antibodies after 15 months.

Descriptors: antibodies, asymptomatic infections, case reports, clinical aspects, diagnosis, leishmaniasis, serology, zoonoses.

Language of Text: Polish, Summary in English.

Madany, J., S. Winiarczyk, J.L. Gundlach, W. Lopuszynski, and Z. Gradzki (2004). **Podkliniczna postac leishmaniozy psow - obserwacje wlasne. [Canine subclinical leishmaniosis - a study report].** *Medycyna Weterynaryjna* 60(10): 1071-1074. ISSN: 0025-8628.

NAL Call Number: 41.8 M463

Descriptors: Leishmaniosis, parasitic diseases, Poland, Turkey, subclinical signs, hepatic and kidney disease, serological assessments, treatment options, protection program.

Language of Text: Polish.

Maiti, S.K., S.K. Hore, and S. Roy (1999). **Effect of immobilization stress on some haematobiochemical parameters in dogs.** *Indian Journal of Veterinary Medicine* 19(2): 111-112. ISSN: 0970-051X.

NAL Call Number: SF703.I54

Descriptors: blood chemistry, hematology, immobilization, stress, dogs.

Manuel, M.F., J.H.A. Abalos, and C.D. Solis (2002). **Some acute behavioural and physiological effects observed in local Philippine dogs voluntarily fed with monosodium glutamate (MSG) in the diet.** *Philippine Journal of Veterinary Medicine* 39(1): 50-51. ISSN: 0031-7705.

NAL Call Number: 41.8 P53

Abstract: Twelve 4- to 7-month-old Philippine nondescript dogs of both sexes were fed monosodium glutamate (MSG) in the diet in quantities varying from 0, 5 and 10% of the amount of food given, using the Latin square design. Both physiological and behavioural parameters were examined in all animals an hour before and after feeding. Doses of MSG as high as 10% did not induce any noticeable change in the behaviour of the dogs. On the other hand, some temporary physiological changes such as tachycardia, vomiting and excretion of dark-coloured faeces were observed in 10 of the dogs.

Descriptors: adverse effects, monosodium glutamate, poisoning, toxicity, dogs.

Maruyama, H., T. Miura, M. Sakai, H. Koie, Y. Yamaya, H. Shibuya, T. Sato, T. Watari, A. Takeuchi, M. Tokuriki, and A. Hasegawa (2004). **The incidence of disseminated intravascular coagulation in dogs with malignant tumour.** *Journal of Veterinary Medical Science* 66(5): 573-575. ISSN: 0916-7250.

NAL Call Number: SF604.J342

Abstract: The incidence of disseminated intravascular coagulation (DIC) in 208 dogs with a malignant tumour was evaluated. The incidence of DIC was 9.6% in dogs with malignant tumour. In 164 dogs with a malignant solid tumour, the incidence of DIC was 12.2%. The incidence of DIC in dogs with haemangiosarcoma, mammary gland carcinoma and adenocarcinoma of the lungs were significantly higher than that in dogs with other malignant tumours. These results suggested that special care should be taken in DIC dogs with malignant solid tumour.

Descriptors: blood coagulation disorders, disseminated intravascular coagulation, epidemiology, mammary glands, neoplasms.

McCall, C., S. Hunter, K. Stedman, E. Weber, A. Hillier, C. Bozic, B. Rivoire, and T. Olivry (2001). **Characterization and cloning of a major high molecular weight house dust mite allergen (Der f 15) for dogs.** *Veterinary Immunology and Immunopathology* 78(3/4): 231-247. ISSN: 0165-2427.

NAL Call Number: SF757.2.V38

Abstract: Although house dust mites (HDM(s)) are important elicitors of canine allergy, the low molecular weight molecules defined as major allergens for humans do not appear to be major allergens for dogs. Western blotting of *Dermatophagoides farinae* (*D. farinae*) extracts with sera from sensitized dogs showed that the majority of animals had IgE antibodies specific for two proteins of apparent molecular weights of 98 and 109 kDa (98/109 kDa). The N-terminal sequences of these two

proteins were identical, suggesting they were very closely related, and sequencing of internal peptides showed the protein(s) to have homology with insect chitinases. A purified preparation of 98/109 kDa proteins elicited positive intradermal skin tests (IDST(s)) in a group of well-characterized atopic dogs sensitized to *D. farinae*, but not in normal dogs. A rabbit polyclonal antiserum raised against the purified proteins was used to immunoscreen a *D. farinae* cDNA library. The mature coding region of the isolated chitinase cDNA predicts a protein of 63.2 kDa; sequence analysis and glycan detection blotting suggest that the molecule is extensively O-glycosylated. Monoclonal antibodies made against the purified native protein were used to localize the chitinase in sections of whole *D. farinae* mites. The protein displayed an intracellular distribution in the proventriculus and intestine of the mite, suggesting that it has a digestive, rather than a moulting-related, function. The high prevalence of IgE antibodies to this antigen in canine atopic dermatitis makes it a major HDM allergen for dogs, and the protein has been formally designated Der f 15.

Descriptors: *Dermatophagoides farinae*, allergens, characterization, cloning, IgE, chitinase, atopy, nucleotide sequences, amino acid sequences, complementary DNA, molecular sequence data.

McEntee, K., H. Amory, C. Clercx, D. Soyeur, C. Michaux, O. Vanhaeverbeek, O. Jacqmot, and M. Henroteaux (1998). **Physiologic response to dobutamine infusion during cardiac stress testing of dogs.** *American Journal of Veterinary Research* 59(9): 1160-1165. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: The cardiovascular effects of increasing doses of dobutamine was investigated in 8 healthy conscious crossbred dogs, using standardized dobutamine stress echocardiography (DSE) twice on each dog within 24 h. Dobutamine was infused at 12.5 to 42.5 µg/kg/min, using increasing increments of 10 µg/kg/min. Doppler sphygmomanometry, electrocardiography, and echocardiography were performed. Left ventricular size, global ventricular performance, and left ventricular systolic myocardial function were measured by echocardiography. At the highest dose, dobutamine induced an increase of $20 \pm 3\%$ and $109 \pm 12\%$ in systolic blood pressure and cardiac index, respectively. Cardiac index was associated with a significant increase in heart rate and stroke index. Fractional shortening of the left ventricle, fractional thickening of the left ventricular free wall and interventricular septum, ejection fraction, and mean velocity of fibre shortening had a progressive and significant increase during dobutamine infusion. Pre-ejection period and left ventricular ejection time showed a progressive and significant decrease during the stress test. The technique used was simple, safe, and repeatable in healthy conscious dogs. Control values for these healthy dogs might be useful when comparing dogs with known or suspected cardiovascular disease.

Descriptors: heart diseases, stress, diagnostic techniques, echocardiography, cardiovascular agents, blood pressure, dogs.

McEntee, K., C. Clercx, H. Amory, C. Michaux, J.J. Dardenne, D. Soyeur, and M. Henroteaux (1999). **Doppler echocardiographic study of left and right ventricular function during dobutamine stress testing in conscious healthy dogs.** *American Journal of Veterinary Research* 60(7): 865-871 . ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Descriptors: dogs, stress, testing, cardiovascular agents, echocardiography, heart, heart valves, hemodynamics.

Millanta, F., F. Fratini, M. Corazza, M. Castagnaro, V. Zappulli, and A. Poli (2002). **Proliferation activity in oral and cutaneous canine melanocytic tumours: correlation with histological parameters, location, and clinical behaviour.** *Research in Veterinary Science* 73(1): 45-51. ISSN: 0034-5288.

Abstract: A total of 62 canine melanocytic tumours (10 melanocytomas and 52 primary malignant melanomas) were investigated to compare the accuracy of prognosis provided by MIB-1 proliferation index (MIB-1-PI) with classical histological criteria and location. MIB-1-PI was assessed by means of quantitative image analysis of sections immunostained with MIB-1 monoclonal antibody. Tumour location, histological cell type, stromal or lymphatic vessel invasion, maximum tumour thickness, and presence of inflammation or necrosis were recorded for each case. Thirty-eight dogs were submitted to a 1-year follow-up and the clinical outcome of the disease determined. MIB-1-PI in melanocytomas differed significantly from that detected in primary malignant melanomas ($P=0.0001$). A significant difference in MIB-1-PI was revealed between oral and cutaneous malignant melanomas ($P=0.015$), and between presence and absence of lymphatic vessel invasion ($P=0.05$). MIB-1-PI was not correlated with the other parameters. In univariate analysis, only tumour location (oral vs cutaneous), presence of lymphatic vessel invasion, and MIB-1-PI were associated with decreased overall survival ($P=0.0001$, $P=0.0144$, and $P=0.0489$, respectively). In conclusion, the results of our study confirm that the assessment of the MIB-1-PI may be of additional prognostic value for dogs with primary malignant melanomas.

Descriptors: disease course, immunohistochemistry, melanoma, neoplasms, prognosis, techniques, dogs.

Milovancev, M. and S.C. Ralphs (2004). **Radius/ulna fracture repair.** *Clinical Techniques in Small Animal Practice* 19(3): 128-133 . ISSN: 1096-2867.

NAL Call Number: SF911.S45

Descriptors: animal care, skeletal system, diaphyseal fracture, bone disease, injury, therapy, bone plate, medical equipment, external coaptation, external fixator, medical equipment.

Minors, S.L. and M.R. O' Grady (1998). **Resting and dobutamine stress echocardiographic factors associated with the development of occult dilated cardiomyopathy in healthy Doberman Pinscher dogs.** *Journal of Veterinary Internal Medicine* 12(5): 369-380. ISSN: 0891-6640.

NAL Call Number: SF601.J65

Abstract: In 29 healthy Doberman Pinschers, echocardiographic parameters evaluating systolic and diastolic function were examined prospectively at rest and during dobutamine constant rate infusion (5 µg/kg/minute) to determine if any parameters were associated with the development of occult dilated cardiomyopathy (DCM). A resting echocardiogram was repeated 1 year later to determine which dogs had met the criteria for occult DCM. Six dogs developed occult DCM during the follow-up period. Univariate logistic regression analysis showed that at rest, an increased left ventricular internal dimension in systole (LVID-S) (P = .02), preejection period (PEP) (P = .03), ratio of PEP to left ventricular ejection time (P = .02), and isovolumic relaxation time (P = .02) were significantly associated with the development of occult DCM. During dobutamine stress echocardiography (DSE), high LVID-S (P = .02) and systolic wall stress index (P = .04) and reduced fractional shortening (P = .02) and ratio of peak early to late diastolic mitral filling velocity (E/A) (P = .05) were associated with the development of occult DCM. Multiple logistic regression showed that LVID-S (P = .002) and E/A (P = .002) measured during dobutamine infusion also were associated with the development of occult DCM. Reclassification based on the DSE data was not significantly different than reclassification based on the resting echocardiographic data. Resting echocardiography and DSE have the potential to be clinically applicable screening tests for very early systolic and diastolic dysfunction in Doberman Pinschers, heralding the onset of occult DCM as it is currently defined.

Descriptors: cardiomyopathy, Doberman Pinscher, stress, echocardiography, follow up, screening, heart diseases, diagnosis.

Miolo, A. and C.M. Mortellaro (2003). **Artrosi del cane e stress ossidativo-infiammatorio: dalla clinica al meccanismo. [Canine osteoarthritis and oxidative-inflammatory stress: from clinical aspects to pathogenetic mechanisms.]** *Veterinaria Cremona* 17(1): 17-33. ISSN: 0391-3151.

Descriptors: bone resorption, chondrocytes, clinical aspects, free radicals, osteoarthritis, pathogenesis, synovial fluid, dogs.

Language of Text: Italian, Summary in English.

Mobasheri, A., I. Evans, P. Martin Vasallo, and C.S. Foster (2003). **Expression and cellular localization of na,k-atpase isoforms in dog prostate in health and disease.** *Structure, Function, and Regulatory Mechanisms* 986: 708-710. ISSN: 0077-8923.

Descriptors: enzymology, reproduction, tumor biology, benign prostatic hyperplasia, urologic disease, prostatic adenocarcinoma, neoplasms, reproductive system

disease, male.

Notes: Meeting Information: 10th International Conference on Na,K-ATPase and Related Cation Pumps, Elsinore, Denmark; August 8-14, 2002.

Moon, J., G. Oh, I. Park, B. Kang, C. Lee, S. Jung, Y. Park, S. Shin, J.S. Moon, G.S. Oh, I.C. Park, B.K. Kang, C.Y. Lee, S.C. Jung, Y.H. Park, and S.J. Shin (1999). **Occurrence of canine brucellosis in a large kennel in Chonnam area.** *Korean Journal of Veterinary Research* 39(6): 1099-1105. ISSN: 1225-0198.

NAL Call Number: 41.9 T12

Abstract: Reproductive failures, such as abortions were observed among dogs in a large kennel in Chonnam area, Korea Republic in April 1994. There was no significant difference in sex, age and breed of affected animals. Abortions occurred in late pregnancy. After an initial positive result to *Brucella canis* on 5 serum samples using 2 mercapto-ethyl rapid slide agglutination test (2ME-RSAT), additional specimens from all dogs in the population were tested using blood culture and 3 serological tests (2ME-RSAT, TAT and AGID). 33 of 62 dogs were seropositive. 20 blood samples were cultured, and all isolates were identified as *B. canis*.

Descriptors: brucellosis, abortion, pregnancy, diagnosis, outbreaks, disease prevalence, immunodiagnosis, reproductive disorders, bacterial diseases, *Brucella canis*, dogs.

Language of Text: Korean, Summary in English.

Moore, G.E., M.P. Ward, J. Dhariwal, C.C. Wu, N.W. Glickman, H.B. Lewis, and L.T. Glickman (2004). **Use of a primary care veterinary medical database for surveillance of syndromes and diseases in dogs and cats.** *Journal of Veterinary Internal Medicine* 18(3): 386. ISSN: 0891-6640.

NAL Call Number: SF601.J65

Descriptors: veterinary medicine, heartworm, heart disease, parasitic disease, ELISA, computer software, disease surveillance, medical records, primary care veterinary medical database.

Notes: Meeting Information: 22nd Annual American College of Veterinary Internal Medicine (ACVIM) Forum, Minneapolis, MN, USA; June 9-12, 2004.

Morgan, M.K., D.M. Stout, and N.K. Wilson (2001). **Feasibility study of the potential for human exposure to pet-borne diazinon residues following lawn applications.** *Bulletin of Environmental Contamination and Toxicology* 66(3): 295-300. ISSN: 0007-4861.

NAL Call Number: RA1270.P35A1

Descriptors: toxicity, lawn care chemicals, diazinon, human-pet transfer, health risk.

Nakamura, M., K. Nakamura, T. Miyazawa, Y. Tohya, M. Mochizuki, and H. Akashi (2003).

Monoclonal antibodies that distinguish antigenic variants of canine parvovirus.

Clinical and Diagnostic Laboratory Immunology 10(6): 1085-1089. ISSN: 1071-412X.

Abstract: Canine parvovirus (CPV) is classified as a member of the feline parvovirus (FPV) subgroup. CPV isolates are divided into three antigenic types: CPV type 2 (CPV-2), CPV-2a, and CPV-2b. Recently, new antigenic types of CPV were isolated from Vietnamese leopard cats and designated CPV-2c(a) or CPV-2c(b). CPV-2c viruses were distinguished from the other antigenic types of the FPV subgroup by the absence of reactivity with several monoclonal antibodies (NAbs). To characterize the antigenicity of CPV-2c, a panel of MAbs against CPV-2c was generated and epitopes recognized by these MAbs were examined by selection of escape mutants. Four MAbs were established and classified into three groups on the basis of their reactivities: MAbs which recognize CPV-2a, CPV-2b, and CPV-2c (MAbs 2G5 and 20G4); an MAb which reacts with only CPV-2b and CPV-2c(b) (MAb 21C3); and an MAb which recognizes all types of the FPV subgroup viruses (MAb 19D7). The reactivity of MAb 20G4 with CPV-2c was higher than its reactivities with CPV-2a and CPV-2b. These types of specificities of MAbs have not been reported previously. A mapping study by analysis of neutralization-resistant mutants showed that epitopes recognized by MAbs 21C3 and 19D7 belonged to antigenic site A. Substitution of the residues in site B and the other antigenic site influenced the epitope recognized by MAb 2G5. It was suggested that the epitope recognized by MAb 20G4 was related to antigenic site B. These MAbs are expected to be useful for the detection and classification of FPV subgroup isolates.

Descriptors: canine parvovirus (CPV), infection, mapping study, MAbs, detection of feline parvovirus isolates.

Nap, R.C. (1999). **Voeding van hond en kat in intensive care. [Feeding of dogs and cats kept in intensive care.]**. *Vlaams Diergeneeskundig Tijdschrift* 68(5): 246-248. ISSN: 0303-9021.

NAL Call Number: 41.8 V84

Descriptors: intensive care, animal feeding, cats, dogs.

Language of Text: Dutch.

Nemeth, E., A. Sterczer, A. Mathe, K. Voros, V. Sztojokov, and I. Biksi (2003). **Botulismus klinikai megallapitasa harom kutyaban. [Botulism in three dogs.]**. *Magyar Allatorvosok Lapja* 125(10): 608-616. ISSN: 0025-004X.

NAL Call Number: 41.8 V644

Abstract: Botulismus is an intoxication caused by the neurotoxin of *Clostridium botulinum*. Clinical signs are characterized by progressive, symmetric, generalized LMN (lower motor neuron) dysfunction. The severity of the illness depends on the amount of neurotoxin in the circulation and on the susceptibility of the animal.

The incubation period may vary from a few hours to 6 days, and the course may last about 14-24 days. In case of recovery, muscle weakness dissolves in a descending way, starting from the muscle of the head, through the front legs, and the trunk to the hind legs. The diagnosis of botulismus can be based on the detection of the toxin in serum, faeces, vomitus or contaminated feed. The most widespread method is the toxin isolation and neutralization test performed in mice. In their 3 patients, ataxia beginning with the weakness of the hind legs occurred one day before hospitalization. The three foxterriers came from the same household, thus all the circumstances: nutrition, environment were the same. Flaccid tetraplegia developed within five hours after admission, following an ascending route, including the paralysis of the neck and head muscles, as well as the eyelids. Anamnesis and the results of the clinical examination arose the suspect of botulism, whilst no characteristic alterations of the blood count, blood chemistry and acid-base analysis were found. Toxin isolation from the serum using mice inoculation toxin-neutralization test confirmed the diagnosis, and revealed Type C toxin. List of differentials included polyradiculoneuritis, tick paralysis, monensin toxicosis, and traumatic spinal cord lesions. No antitoxin preparation was available to provide adequate serum therapy. Supportive treatment consisted of parenteral nutrition and parenteral amoxicilline-clavulanic acid therapy to reduce any potential intestinal population of *C. botulinum*. Besides placing a permanent urinary catheter to ensure urination, soft bedding was provided, and the animals were turned regularly to prevent haemostasis in the lungs. One dog died on the 4th and an other on the 8th hospitalization day, but the third one left the hospital in improving status due to intensive therapy on day 18th.

Descriptors: infection, toxicology, veterinary medicine, botulism, bacterial disease, toxicity, diagnosis, pathology, histopathology, symptom, therapy, clinical examination, diagnostic techniques, mice inoculation toxin neutralization test, bioassay techniques, laboratory techniques, parenteral nutrition, muscle weakness.

Language of Text: Hungarian.

Neumann, S. (2005). **Epidemiologic, clinical and laboratory diagnostic findings in dogs with hepatopathies** [Epidemiologische, klinische und labordiagnostische Befunde bei Hunden mit Hepatopathien. *Kleintierpraxis* 50(11): 695-707. ISSN: 0023-2076.

Abstract: The knowledge about the epidemiology of an illness is important for the diagnostic procedure, the course and the prognosis of the disease. Studies about the epidemiology of liver diseases in dogs are rare in veterinary literature. The goal of our investigation was to obtain epidemiological data and compared it with veterinary and human literature. 100 dogs in Germany with hepatopathy were investigated in this study [date not given]. The hepatopathies were diagnosed histologically. In our study, liver degeneration appeared most frequently, followed by liver tumours and hepatitis. A vascular liver disease was found only in one case. We could not find any breed

predisposition. The patients with degenerative liver disease, neoplasia and hepatitis were older than 9-10 years. Only the patient with the vascular liver disease, a porto-systemic shunt, was younger (3 years). We also could not find any sex predisposition. Predominant symptoms of our patients included a disturbed general state of health and inappetence, diarrhoea, vomiting and polyuria/polydipsia. Abdominal distension and pain we observed more in cases of neoplasia and hepatitis. Icterus, pruritus and haemorrhage were rare symptoms of hepatopathy in our study. The statistical analysis of our laboratory parameters showed significant increase of alanine aminotransferase (ALT) activity in dogs with hepatitis. Dogs with liver degeneration have significant increased aspartate aminotransferase (AST) activities. Glutamate dehydrogenase (GLDH) was higher in dogs with hepatitis. Bile acids were significant increased, while albumin was significant decreased in dogs with neoplasia. Most of our cases had a moderate to poor prognosis. Dogs with liver degeneration died frequently based on the primary disease. The patient with a portosystemic shunt recovered after operation. Our data were predominantly comparable to those in the veterinary literature..

Descriptors: etiology, alanine aminotransferase, aspartate aminotransferase, bile acids, blood chemistry, clinical aspects, degeneration, diagnosis, disease prevalence, enzyme activity, epidemiology, glutamate dehydrogenase, hepatitis, laboratory diagnosis, liver, liver diseases, neoplasms, prognosis, serum albumin, dogs.

Nicholas, B.L., F.R. Brennan, W.D.O. Hamilton, and D. Wakelin (2003). **Effect of priming/booster immunisation protocols on immune response to canine parvovirus peptide induced by vaccination with a chimaeric plant virus construct.** *Vaccine* 21(19-20): 2441-2447. ISSN: 0264-410X.

NAL Call Number: QR189.V32

Abstract: Expression of a 17-mer peptide sequence from canine parvovirus expressed on cowpea mosaic virus (CPMV) to form chimaeric virus particles (CVPs) creates vaccine antigens that elicit strong anti-peptide immune responses in mice. Systemic (subcutaneous, s.c.) immunisation and boosting with such CVP constructs produces IgG2a serum antibody responses, while mucosal (intranasal, i.n.) immunisation and boosting elicits intestinal IgA responses. Combinations of systemic and mucosal routes for priming and boosting immunisations were used to examine their influence on the level, type and location of immune response generated to one of these constructs (CVP-1). In all cases, s.c. administration, whether for immunisation or boosting, generated a Th1-biased response, reflected in a predominantly IgG2a serum antibody isotype and secretion of IFN-gamma from in vitro-stimulated lymphocytes. Serum antibody responses were greatest in animals primed and boosted subcutaneously, and least in mucosally vaccinated mice. The i.n. exposure also led to IFN-gamma release from in vitro-stimulated cells, but serum IgG2a was significantly elevated only in mice primed intranasally and boosted subcutaneously. Peptide-and

wild-type CPMV-specific IgA responses in gut lavage fluid were greatest in animals exposed mucosally and least in those primed and boosted subcutaneously or primed subcutaneously and boosted orally. Lymphocytes from immunised mice proliferated in response to in vitro stimulation with CPMV but not with peptide. The predominant secretion of IFN-gamma from all immunising/boosting combinations indicates that the route of vaccination and challenge does not alter the Th1 bias of the response to CVP constructs. However, optimal serum and intestinal antibody responses were achieved by combining s.c. and i.n. administration.

Descriptors: immune system, priming, booster immunization protocols, immune challenge, immune response, mucosal immunity, serum antibody responses.

Nobling, A., A.C. Rodrigues, and R. de Menezes (2002). **Prevalencia de Cystoisospora Frenkel, 1977 (Apicomplexa: Cystoisosporinae) em caes provenientes de canis do Estado do Rio de Janeiro. [Prevalence of the Cystoisospora Frenkel, 1977 (Apicomplexa: Cystoisosporinae) in dogs proceeding from kennels in the State of Rio de Janeiro.]**. *Revista Brasileira De Medicina Veterinaria* 24(1): 43-44. ISSN: 0100-2430.

NAL Call Number: QP251.R48

Abstract: The incidence of Cystoisospora in dog breeding kennels of Rio de Janeiro State, Brazil, was studied. Faecal samples were collected from dogs of different breeds, ages, and sexes. The presence of Cystoisospora was confirmed. Other enteric parasites were not associated with coccidiosis. The parasite principally affected pups and bitches with litters aged between 14-40 days.

Descriptors: bitches, disease prevalence, kennels, puppies, dogs, Isospora.

Language of Text: Portuguese, Summary in English.

Noli, C. (1998). **Specific aspects of house dust mite allergy in dogs.** *Pratique Medicale and Chirurgicale De L'Animal De Compagnie* 33(Suppl. 3): 305-314. ISSN: 1157-6960.

Descriptors: house dust mites, atopy, hypersensitivity, allergens, arthropod allergies, literature reviews, *Dermatophagoides* spp.

Language of Text: English, Summary in French.

O'reilly, A., C. Beck, J.G. Mouatt, and V.J. Stenner (2002). **Exophthalmos due to a wooden foreign body in a dog.** *Australian Veterinary Journal* 80(5): 268-271. ISSN: 0005-0423.

NAL Call Number: 41.8 Au72

Abstract: An 8-year-old Golden Retriever dog was presented with a 10-month history of right-sided exophthalmos. Radiographs and CT demonstrated a linear density, suggestive of a foreign body, in the region of the ramus of the right mandible. A 7 cm stick, located medial to the right zygomatic arch, was removed during exploratory surgery. The dog recovered with the aid of antibiotics, however was left with a residual facial nerve paralysis.

Descriptors: dental and oral system, ingestion and assimilation, infection, neural coordination, pharmacology, sense organs, sensory reception, skeletal system, bacterial infection, bacterial disease, infectious disease, diagnosis, drug therapy, therapy, facial nerve paralysis, nervous system disease, retrobulbar mass, eye disease, right sided exophthalmos, therapy, computed tomography, diagnostic techniques, laboratory techniques, differential diagnosis, exploratory surgery, ophthalmic examination, radiography, ultrasound, imaging and microscopy techniques.

Ogeer Gyles, J., K.A. Mathews, W. Sears, J.F. Prescott, J.S. Weese, and P. Boerlin (2006).

Development of antimicrobial drug resistance in rectal *Escherichia coli* isolates from dogs hospitalized in an intensive care unit. *Journal of the American Veterinary Medical Association* 229(5): 694-699. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: OBJECTIVE: To determine whether duration of hospitalization in the intensive care unit (ICU) of a veterinary teaching hospital was associated with prevalence of antimicrobial resistance among rectal *Escherichia coli* isolates from dogs, whether antimicrobial treatment was associated with prevalence of antimicrobial resistance, and whether there were associations among antimicrobial drugs to which isolates were resistant. DESIGN: Prospective observational study. ANIMALS: 116 dogs hospitalized in an ICU for ≥ 3 days. PROCEDURES: Rectal swab specimens were obtained every 3 days and submitted for bacterial culture for *E. coli*. Isolates were tested for susceptibility to 12 antimicrobial agents by means of disk diffusion. RESULTS: For each additional day that a dog was hospitalized in the ICU, the odds of being colonized with an *E. coli* isolate resistant to 1 or more of the 12 antimicrobials tested increased by a factor of 1.5, independent of antimicrobial treatment. Dogs that were treated with enrofloxacin were 25.6 times as likely to be colonized by a quinolone-resistant *E. coli* strain as were dogs that did not receive any antimicrobials. Significant correlations were found for resistance to agents in the extended-spectrum cephalosporin group and the quinolone group. CONCLUSIONS AND CLINICAL RELEVANCE: Results suggested that the proportion of rectal *E. coli* isolates obtained from dogs housed for ≥ 3 days in a veterinary teaching hospital ICU that were resistant to antimicrobial agents increased as the duration of hospitalization in the ICU increased. Thus, ICU hospitalization time should be as short as possible to prevent development of antimicrobial resistance among rectal *E. coli* isolates.

Descriptors: bacteria, anti bacterial agents, therapeutic use, cross infection, drug therapy, drug resistance, drug effects, *escherichia coli* infections, colony count, microbiology, multiple bacterial infections, hospitalization, microbial sensitivity tests, rectum microbiology.

Orzechowski, A. (1997). **Postepowanie dietetyczne u psow i kotow po urazach i zabiegach chirurgicznych. Czesc I. Zapotrzebowanie pokarmowe.** [Dietary treatment in the postoperative care in cats and dogs. Part I. Nutrient requirements.]. *Nowa Weterynaria* 2(1): 3-8.

Descriptors: nutrition, nutrients, stress, diets, arginine, glutamine, fatty acids, electrolytes, fluids, nutrient requirements, postoperative care, cats, dogs.

Language of Text: Polish.

Orzechowski, A. (1997). **Postepowanie dietetyczne u psow i kotow po urazach i zabiegach chirurgicznych. Part II. Metody karmienia.** [Diets in the postoperative care for dogs and cats. Part II. Methods of feeding.]. *Nowa Weterynaria* 2(2): 2-11.

Descriptors: catheterization, fluid therapy, nutrient requirements, postoperative care, diets, feeding, cats, dogs.

Language of Text: Polish.

Otranto, D., P. Milillo, P. Mesto, D. De Caprariis, S. Perrucci, and G. Capelli (2004). **Otodectes cynotis (Acari: Psoroptidae): Examination of survival off-the-host under natural and laboratory conditions.** *Experimental and Applied Acarology* 32(3): 171-179. ISSN: 0168-8162.

NAL Call Number: SB940 .E9

Abstract: The biological and environmental factors affecting survival off-the-host of *Otodectes cynotis* (Acari: Psoroptidae) ear mites were investigated under natural and laboratory conditions. From November 2000 to November 2002 mites were collected monthly from cats and divided into four groups according to sex and stage. In laboratory conditions, the mites were placed in an incubator with a steady 95% relative humidity (r.h.), a 10 degrees C. All the plates were examined by stereomicroscopy every 24 h until all the mites had died. The data were analysed statistically by multiple linear regression and survival analysis. At 10 degrees C, the maximum survival time of mites was between 15 and 17 days, while at 34 degrees C, it was between 5 and 6 days. The maximum survival time of adult females was significantly longer than that of other stages. No differences were observed in maximum survival times of mites that had been offered food and those that had not, or in the time (in days) to reach 50% mortality (LT50). When exposed to environmental conditions, the maximum survival time (12 days) was observed at temperatures ranging from 12.3 to 14.2 degrees C and r.h.s between 57.6 and 82.9%. Multiple regression analysis showed that temperature alone influenced the maximum survival time and LT50 of mites, and that the rate of survival declined linearly with increasing mean temperature. This basic understanding of off-host survival suggests that, places which have been inhabited by infected animals may need to be disinfected or remain vacated for at least 12 days before occupancy by clean cats or dogs.

Descriptors: cats, dogs, *Otodectes cynotis*, ear mites, off-host survival factors, temperature, humidity.

Overgaauw, P.A.M. and J.H. Boersema (1998). **Nematode infections in dog breeding kennels in the Netherlands, with special reference to *Toxocara***. *Veterinary Quarterly* 20(1): 12-15. ISSN: 0165-2176.

NAL Call Number: SF601.V46

Abstract: Faecal samples from 286 adult dogs and 159 pups from 32 dog breeding kennels in the Netherlands, recruited at a national conference of dog breeders, were examined for nematode eggs between January 1994 and August 1995, as were soil samples from outdoor runs at the kennels and dust samples from kennels and breeders' houses. 18% of dogs shed nematode eggs; such dogs were found in 41% of the kennels. The prevalence of nematode infection in adult dogs in infected kennels was 33%. The prevalences of individual nematode species were 21% (adults) and 48% (pups) for *Toxocara canis*, 29% and 0% for *Trichuris vulpis*, and 20% and 0% for *Toxascaris leonina*. Kennels with more than 2 litters per year and with regular import of new animals had a significantly higher prevalence of *T. canis* ($P < 0.01$ and $P < 0.05$ respectively). *T. vulpis* infections in adult dogs occurred significantly more often in kennels that used deworming products other than benzimidazoles ($P < 0.05$). Embryonated *T. canis* ova were recovered from 20% of the house and kennel dust samples and from 50% (11 of 22) of the soil samples. Three soil samples also had *T. vulpis* eggs. This survey shows that the nematode infection rate in dog breeding kennels is high. Better deworming strategies should be used to improve the health status of the dogs and to reduce the risk of zoonotic infection in humans.

Descriptors: nematode infections, animal breeding, kennels, feces, soil, house dust, helminth ova, epidemiology, disease prevalence, zoonoses, toxocarasis, trichuriasis, benzimidazoles, anthelmintics, parasites, helminths, dogs, *Toxocara canis*, *Trichuris vulpis*, *Toxascaris leonina*.

Papini, R., G. Gorini, A. Spaziani, and G. Cardini (2005). **Survey on giardiasis in shelter dog populations**. *Veterinary Parasitology* 128(3-4): 333-339. ISSN: 0304-4017.

NAL Call Number: SF810.V4

Abstract: Faecal samples from 183 dogs living in three different shelters in the Rome metropolitan area were randomly collected and examined for the prevalence of giardiasis. *Giardia* infections were detected by a commercially available ELISA test (ProspecT *Giardia* Microplate Assay). Overall prevalence was 55.2%. Prevalence rates in single shelters were 74.3, 35.5, and 20.9%, respectively. Using multivariate analysis, no association was found between *Giardia* -positivity and shelter or sex, breed, or diarrhoea. *Giardia*-positive dogs were more likely to be younger than 5-year-old (odds ratio [OR] = 2.87; 95% confidence interval [95% CI]: 1.07-7.77; $p = 0.038$), living together (OR = 2.58; 95% CI: 1.12-5.93; $p = 0.026$), and fed commercial wet

food, both alone and combined with dry food (OR = 5.67; 95% CI: 1.59-20.24; $p = 0.008$). Correlation between Giardia infection and type of food has not been previously reported in dogs. Possible use of the ELISA test for detection of Giardia infection in dogs and zoonotic implications are discussed.

Descriptors: parasitology, giardia, giardiasis, antigens, helminth analysis, enzyme linked immunosorbent assay, feces, multivariate analysis, Rome.

Payne Johnson, M., T.P. Maitland, J. Sherington, D.J. Shanks, P.J.M. Clements, M.G. Murphy, A. McLoughlin, A.D. Jernigan, and T.G. Rowan (2000). **Efficacy of selamectin administered topically to pregnant and lactating female dogs in the treatment and prevention of adult roundworm (*Toxocara canis*) infections and flea (*Ctenocephalides felis felis*) infestations in the dams and their pups.** *Veterinary Parasitology* 91(3/4): 347-358. ISSN: 0304-4017.

NAL Call Number: SF810.V4

Abstract: The efficacy of selamectin in the treatment and prevention of naturally acquired *Toxocara canis* infections and experimentally induced flea (*Ctenocephalides felis felis*) infestations in beagle bitches and their suckling pups was evaluated by administering selamectin to the adults, approximately 40 and 10 days before parturition and 10 and 40 days afterwards. Unit doses of the commercial formulation of selamectin were administered to provide at least the minimum recommended dosage of 6 mg kg⁻¹ (range, 6-12 mg kg⁻¹). Dams and their pups were housed in carpeted environments able to support the flea life cycle. Flea infestations were established initially by experimental infestation before treatment and by repeated re-infestation of dams at approximately weekly intervals throughout the study, which was completed 45 days after parturition. There were no adverse reactions related to treatment with selamectin and no treatment-related mortalities. The percentage reduction in geometric mean *T. canis* faecal egg count for the selamectin-treated dams, compared with those receiving the negative-control treatment (vehicle only) was 99.7% at the end of the study ($P=0.0001$). Geometric mean faecal egg counts in pups from selamectin-treated bitches were reduced by <more or =>96% on the 24th and 34th days after birth ($P=0.0001$), and the number of adult worms recovered from the gastrointestinal tracts of pups from selamectin-treated bitches was reduced by 98.2% ($P=0.0001$), compared with pups from vehicle-treated bitches. Despite additional flea control measures in the control group, the percentage reductions in geometric mean flea counts for selamectin-treated bitches and their pups, compared with controls, were <more or =>99.8% ($P=0.0001$) and 100% ($P=0.0001$), respectively, throughout the study. Thus, selamectin administered topically at a minimum unit dosage of 6 mg kg⁻¹ to dams with naturally acquired *T. canis* infections and experimentally induced *C. felis* infestations was safe and highly effective in controlling infection in both the dams and their pups.

Descriptors: pregnancy, toxocariasis, animal parasitic nematodes, maternal trans-

mission, experimental infections, laboratory animals, ectoparasites, anthelmintics, Beagle dogs, puppies.

Penaliggon, J., D.S. Mills, S.E. Heath, and L.J. Harrington (1997). **The use of nicergoline in the reversal of behavioural changes due to ageing in dogs: A multicentre clinical field trial**. In: *Proceedings of the First International Conference on Veterinary Behavioural Medicine, April 1-2, 1997, Birmingham, UK*, 37-41 p.
Descriptors: animal behavior, drug therapy, aging, dogs.

Pereira, L., M. Larsson, E.C. Soares, S.M.d. Oliveira, and S.M. de Oliveira (2000). **Traqueobronquite infecciosa canina (Tosse dos Canis). [Canine infectious tracheobronchitis: "Kennel Cough"].** *Veterinaria Noticias* 6(1): 77-81.
NAL Call Number: SF604.V484
Abstract: Clinical data from 20 cases of canine tracheobronchitis, observed at the Cardiology Service Unit of HOVET, University of Sao Paulo, Brazil, during a period of 12 months, are described. The results obtained characterized canine infectious tracheobronchitis as a seasonal disease, more prevalent during the cold months.
Descriptors: respiratory diseases, bacterial diseases, infectious diseases, Bordetella bronchiseptica.
Language of Text: Portuguese, Summary in English.

Peters, I.R., E.L. Calvert, E.J. Hall, and M.J. Day (2004). **Measurement of immunoglobulin concentrations in the feces of healthy dogs.** *Clinical and Diagnostic Laboratory Immunology* 11(5): 841-848. ISSN: 1071-412X.
Abstract: Selective immunoglobulin A (IgA) deficiency is the most common primary immunodeficiency in humans and may be associated with chronic gastrointestinal disease. This observation has led to the suggestion that the high susceptibility of German shepherd dogs (GSD) to chronic enteropathies is related to a deficiency in mucosal IgA production. Relative deficiencies of IgA has been reported in the serum, saliva, tears, and feces of GSD both with and without alimentary disease; however, the findings of different studies are not consistent. The aim of this study was to confirm whether a relative deficiency of IgA exists in the feces of GSD. Feces were collected from healthy GSD (n = 209), Labrador retrievers (n = 96), beagles (n = 19), and miniature schnauzers (it = 32). Fecal IgA, IgM, and IgG were measured by capture enzyme-linked immunosorbent assays. Fecal IgG concentrations in the four breed groups were not significantly different. IgA concentrations were significantly greater in miniature schnauzers than in GSD (P = 0.0003) and Labradors (P = 0.0004) but not significantly different from those in beagles. IgM concentrations were significantly greater in miniature schnauzers than in GSD (P < 0.0001), Labradors (P < 0.0001), and beagles (P = 0.0098). These findings do not support the hypothesis that GSD have a relative deficiency in fecal IgA. The differences in immunoglobulin concentrations measured from a single defecation, between individuals

of the same breed and between breeds, as well as the lack of an internal control molecule, make the determination of a normal reference range for all dogs impossible. Therefore, the usefulness of fecal immunoglobulin quantification for the assessment of intestinal immunoglobulin secretion in dogs is limited.

Descriptors: breed, Beagle, German Shepherd, Labrador Retriever, analytical methods, deficiency diseases, dog feces, ELISA, IgA, IgG, IgM, techniques, digestive system, ingestion and assimilation, immune system, veterinary medicine, chronic gastrointestinal disease, digestive system disease, enzyme linked immunosorbent assay, immunologic techniques, laboratory techniques.

Petruschke, G., L. Rossi, C. Genchi, and F. Pollono (2001). **Sulle dirofilariosi canine nel Canton Ticino e in aree confinanti del Nord Italia. [Canine dirofilariosis in the canton of Ticino and in neighbouring areas in northern Italy.]**. *Schweizer Archiv Fur Tierheilkunde* 143(3): 141-147. ISSN: 0036-7281.

NAL Call Number: 41.8 SCH9

Abstract: The distribution of canine dirofilariosis in Southern Ticino (Switzerland) and in the neighboring provinces of Varese and Como (Italy) was investigated. Blood samples were collected from 308 dogs which had remained in the local area and were outdoor-housed, older than 1.5 years and had not been treated previously with preventive or microfilaricidal drugs. Microfilariae of *Dirofilaria immitis* and *D. repens* were found in 33 (10.7%) and 17 (5.5%) dogs, respectively. Ten more dogs (3.2%) tested positive for circulating antigens. Four infected dogs lived in Southern Ticino : two harboured *D. immitis*, one *D. repens* and one had a mixed infection. In addition 3887 mosquitoes were captured in five sample sites by means of dog-baited traps. *Culex pipiens*, *Aedes geniculatus* and *A. vexans* were the most abundant species. Infective stages of *D. immitis* were observed in local strains of *A. geniculatus* and *C. pipiens*, following engorgement on a microfilaraemic dog and the successive rearing in laboratory conditions.

Descriptors: dirofilariosis, disease prevalence, *Aedes geniculatus*, *Aedes vexans*, *Culex pipiens*, *Dirofilaria immitis*, *Dirofilaria repens*.

Language of Text: Italian, Summaries in German, English and French.

Pollmeier, M., G. Pengo, P. Jeannin, and M. Soll (2002). **Evaluation of the efficacy of fipronil formulations in the treatment and control of biting lice, *Trichodectes canis* (De Geer, 1778) on dogs.** *Veterinary Parasitology* 107(1-2): 127-136. ISSN: 0304-4017.

NAL Call Number: SF810.V4

Abstract: The efficacy of FRONTLINE SPRAY (0.25% (w/v) fipronil), FRONTLINE SPOT-ON FOR DOGS (10% (w/v) fipronil) and FRONTLINE PLUS FOR DOGS (10% (w/v) fipronil and 9% (S)-methoprene) against the biting louse *Trichodectes canis* on dogs was confirmed under laboratory conditions. A field study

evaluated the efficacy of a single topical application of FRONTLINE SPRAY and FRONTLINE SPOT-ON against the parasite on dogs. A total of 48 dogs of mixed breeds, both sexes, aged 2 months-7 years and weighing 1.8-37.0kg were used. The animals were either experimentally (laboratory study) or naturally (field study) infested with lice. Dogs were housed individually in order to prevent contact between animals. In the laboratory study, animals were allocated based on pre-treatment louse counts from 38 hair coat-partings per animal. Dogs were randomly assigned to the four treatment groups: (1) untreated control; (2) FRONTLINE SPRAY, at 6ml/kg; (3) FRONTLINE SPOT-ON as per label and (4) FRONTLINE PLUS as per label. Dogs in treatment groups 2-4 were treated twice topically on Days 0 and 28. The number of live lice in the 38 hair coat-partings per animal were counted on Days 2, 7 and weekly to Day 63. In addition, a whole body comb count was performed on Day 63. No live *T. canis* were found on dogs treated with FRONTLINE formulations at any post-treatment examination. The difference from controls was significant ($P < 0.01$) for each product at each examination. Based on the whole body comb count at Day 63, the efficacy of each product was determined to be 100%. In the field study, dogs were allocated in strict order of presentation. Dogs were randomly allocated to one of the three treatment groups: (1) BOLFO collar (propoxur); (2) FRONTLINE SPRAY, at 6ml/kg and (3) FRONTLINE SPOT-ON as per label. Dogs were treated once topically on Day 0. The number of live lice was determined by whole body searches on Days 0 (pre-treatment), 2, 28 and 42. Louse counts of dogs treated with either FRONTLINE SPRAY, or FRONTLINE SPOT-ON were not different than those of dogs receiving the propoxur collar. The efficacy was determined to be >98% on Day 2 and, 100% on Days 28 and 42 in all treatment groups. The results of these studies demonstrate that fipronil in topical formulations is effective for treatment and control of biting lice (*T. canis*) infestations on dogs.

Descriptors: antiparasitic agents, ectoparasites, laboratory testing, biting louse, *Trichodectes canis*, Frontline, product efficacy, fipronil, topical formulations.

Randall, A., A. Hillier, L.K. Cole, K.W. Kwochka, G. Needham, and D.L. Wassom (2003).

Quantitation of house dust mites and house dust mite allergens in the microenvironment of dogs. *American Journal of Veterinary Research* 64(12): 1580-1588.

ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: Objective: To quantitate the density of *Dermatophagoides farinae* and *D. pteronyssinus* and concentrations of house dust mite (HDM) allergens (Der f 1, Der p 1, and Group 2 allergens) in the indoor microenvironment of dogs. Sample Population: 50 homes in Columbus, Ohio. Procedures: In each home, samples of dust were collected from 3 locations in which dogs spent most time. Whenever possible, the species of mites collected was identified. Mite density (mites/g of dust) was assessed, and allergen concentrations were assayed by standardized ELISAs. Relative humidity

and temperature in each home were monitored during a 5-day period. Characteristics of homes and sample sources were evaluated. Results: Dust samples from all 50 homes contained *more-than-or-equal1 HDM allergen; Der f 1 and Der p 1 were detected in 100 and 74% of homes, respectively. Fifteen homes had HDMs; compared with *D. pteronyssinus*, *D. farinae* was found more commonly (14/15 homes) and at a higher density. Basements, homes without central air-conditioning and dog beds that were *more-than-or-equal1 year old had high HDM allergen concentrations. Homes with *more-than-or-equal2 microng of Der f 1 or Group 2 allergens/g of dust or *more-than-or-equal100 mites/g of dust were significantly more likely to have a maximum relative humidity *more-than-or-equal75%. Conclusions and Clinical Relevance: Results indicated the presence of HDMs and HDM allergens in the specific microenvironment of dogs in homes. Factors associated with high levels of exposure were identified, which may be associated with increased risk for sensitization and development of atopic diseases.

Descriptors: allergens, environment, house dust mites, *Dermatophagoides farinae*, *Dermatophagoides pteronyssinus*, dogs, mites.

Rawlings, N.G., E. Simko, T. Bechuk, S.J. Caldwell, and B. Singh (2003). **Localization of integrin alphavbeta3 and vascular endothelial growth factor receptor-2 (kdr/flk-1) in cutaneous and oral melanomas of dog.** *Histology and Histopathology* 18(3): 819-826. ISSN: 0213-3911.

Abstract: Melanomas are common neoplasms of dogs and arise from pigment-producing cells called melanocytes or melanoblasts. Melanomas of skin are often easily cured by surgical excision, but those of oral mucosa are aggressive, metastasize to the regional lymph nodes and lungs, and respond poorly to conventional therapy. Tumor growth is sustained by proliferation of microvessels via a process called angiogenesis. Integrin alphavbeta3 is expressed in proliferating but not in quiescent microvessels suggesting a role in angiogenesis. Vascular endothelial growth factor (VEGF) manifests its mitogenic and angiogenic effects mainly via VEGF receptor-2 (VEGFR-2/Flk-1). We conducted this immunocytochemical study to investigate the expression of integrin alphavbeta3 and VEGFR-2 in archival and fresh samples from cases of canine melanomas. Results show that integrin alphavbeta3 was expressed in 72% and 88% of cutaneous and oral melanomas, respectively, and the expression was restricted to and immediately around the melanocytes and endothelial cells. VEGFR-2 staining of selected cases of melanoma revealed that its expression overlapped with the alphavbeta3 integrin. Dual immuno-gold electron microscopy confirmed co-localization of integrin alphavbeta3 and VEGFR-2 in melanocytes and endothelial cells. These data demonstrate expression and co-localization of integrin alphavbeta3 and VEGFR-2 in cutaneous and oral melanomas of dogs.

Descriptors: tumor biology, cutaneous melanoma, integumentary system disease, neoplastic disease, oral melanoma, dental and oral disease, immunocytochemis-

try, immunologic techniques, laboratory techniques, immunoelectron microscopy, imaging and microscopy techniques, light microscopy.

Reading, M.J. and H.J. Field (1999). **Detection of high levels of canine herpes virus-1 neutralising antibody in kennel dogs using a novel serum neutralisation test.**

Research in Veterinary Science 66(3): 273-275 . ISSN: 0034-5288.

NAL Call Number: 41.8 R312

Abstract: It is widely held that only cells of canine origin support canine herpesvirus(-1) (CHV-1) replication and, that cytopathic effect (CPE) develops relatively slowly. Here we show that mink fetal lung cells (NBL-7 cell line) are permissive for CHV-1 and can be used to produce a sensitive test for neutralising antibody by plaque reduction in the presence of complement. The test was applied to the investigation of CHV-1 virus neutralising antibody levels in three kennel populations. The results showed that 26 out of 28 dogs were neutralising antibody positive (titre greater than or equal to 2) and, 11 out of 28 had titres of greater than or equal to 1024. The serum samples were analysed by enzyme linked immunoassay (ELISA); 27 out of 28 were graded as ELISA IgG positive (titre greater than or equal to 500) and 26 of 28 were graded as ELISA IgM positive (titre greater than or equal to 50).

Descriptors: dogs, canine herpesvirus, neutralizing antibodies, neutralization tests, antibody testing, cell lines, lungs, mink.

Rehbinder, C., P. Baneux, D. Forbes, H.v. Herck, W. Nicklas, Z. Rugaya, and G. Winkler (1998). **FELASA recommendations for the health monitoring of breeding colonies and experimental units of cats, dogs and pigs. Report of the Federation of European Laboratory Animal Science Associations (FELASA) Working Group on Animal Health.** *Laboratory Animals* 32(1): 1-17. ISSN: 0023-6772.

NAL Call Number: QL55.A1L3

Abstract: The report is in 8 parts: Introduction; Inspection of the colony; Monitoring procedures; Health monitoring report; Cat; Dog; Pig. Samples of FELASA-approved health monitoring report forms are included.

Descriptors: laboratory animals, animal welfare, cats, dogs, pigs.

Rezende, B.C.G. and M.L.Z. Dagli (2003). **Retinoides na quimioprevencao e tratamento coadjuvante de neoplasias em caes: revisao. [Retinoids in chemoprevention and treatment of cancer in dogs: a review.].** *Clinica Veterinaria.* 8(45): 44-50. ISSN: 1413-571X.

Abstract: The development of veterinary medicine in small animal care during the last twenty years allowed a significant improvement in the quality and duration of life of dogs and cats. Parallel to the increase of longevity, there is also an increase in the number of animals with neoplasia. In face of this new situation, the veterinarian has to be able to diagnose, treat and prevent cancer in domestic animals. Retinoids are included in a group of chemical substances indicated for the chemopreven-

tion or therapy of cancer. Some of them have already been tested in laboratory or domestic animals, showing great potential as cancer control agents in small animals. This review aims at presenting and discussing possible usage of this drug as a cancer chemopreventive or therapeutic agent for dogs.

Descriptors: chemoprophylaxis, disease prevention, drug therapy, neoplasms, retinoids, reviews, dogs.

Language of Text: Portuguese, Summary in English.

Rich, J.E. (2002). **Dog chew toy containing edible pet toothpaste for dental care.** *Official Gazette of the United States Patent and Trademark Office Patents* 1257(1) ISSN: 0098-1133.

Online: <http://www.uspto.gov/web/menu/patdata.html>

NAL Call Number: T223 .A21

Descriptors: edible pet toothpaste, dog chew toy, patent.

Ronsse, V., J. Versteegen, K. Onclin, F. Farnir, and H. Poulet (2004). **Risk factors and reproductive disorders associated with canine herpesvirus-1 (CHV-1).** *Theriogenology* 61(4): 619-636. ISSN: 0093-691X.

NAL Call Number: QP251.A1T5

Abstract: Canine herpesvirus-1 (CHV-1) is presumed to be enzootic in the dog population and is associated with fertility disorders and neonatal mortality. In this study we screened for risk factors affecting CHV-1 antibody titers and investigated the association between antibody titers and reproductive disorders. Therefore, serum from 545 dogs used for reproduction was analysed with an ELISA. Using a forward stepwise procedure and retaining significant risk factors ($P < 0.05$), best fitting multifactorial generalized linear model (glm) procedures were built for males and females. The effect of antibody titers on reproductive disorders was analysed with logistic regression analysis. The association between reproductive disorders and seroprevalence was analysed in chi-square analyses using contingency tables. In both sexes, kennel cough and breeding management were found to have an impact on the CHV-1 antibody titer. Also, the influence of kennel cough on the antibody titer was correlated to the hygienic status of the kennel. In females, age, kennel size and cycle stage had an effect on CHV-1 antibody titers. Furthermore, kennel size and hygiene were found to be correlated. In males, mating experience had an impact on CHV-1 antibody titers. An association was observed between serological status and a history of abortion in bitches. In conclusion, this study suggests CHV-1 antibody titers may be affected by many factors, both on an environmental and host level. Therefore, interpretation of the serological status requires precaution. Furthermore, oronasal and venereal transmission seem to play a role in the spreading of infection.

Descriptors: animal care, female, canine herpesvirus 1 infection, viral disease trans-

mission, kennel cough, breeding management, fertility, hygiene, kennel housing, mortality, venereal transmission.

Rubel, D., G. Zunino, G. Santillan, and C. Wisnivesky (2003). **Epidemiology of toxocara canis in the dog population from two areas of different socioeconomic status, greater buenos aires, argentina.** *Veterinary Parasitology* 115(3): 275-286. ISSN: 0304-4017.

NAL Call Number: SF810.V4

Abstract: Toxocara canis infection in dogs is a public health problem in most countries, although it has been poorly documented in many of them. The main objective of the present work was to investigate the epidemiology of infection in the canine populations from two areas of Buenos Aires of different socioeconomic status and urban conditions: a middle-income neighbourhood (MIN) and a low-income neighbourhood (LIN). This study evaluated the prevalence of infection in dogs by parasitological and serological techniques in both areas, and described the relationship between the infection and different epidemiological variables for each neighbourhood. A cross-sectional study was carried out after a house-to-house census was completed. During August 1999, a sample of households was selected at random (nMIN=53 and nPA=52). In each house, one dog was randomly chosen for the collection of fresh faeces and blood. The dog owners were interviewed utilising a questionnaire about dogs on sex, recent anthelmintic treatment, degree of confinement, control by the dog's owner (whether the dog goes out of the house accompanied or not, leashed or unleashed), defecation site, defecation substratum and number of dogs in the house. The diagnostic techniques were concentration-sedimentation foxmalin/ether method and ELISA test. The parasitological prevalences in dogs were 9% (5/53) in MIN and 19% (10/52) in LIN, and serological prevalences were 22% (2/9) in MIN and 40% (15/37) in LIN. In MIN, the patent infection of males was significantly higher than that of females. In LIN, puppies less than 1 year old were the most prevalent age class. Our serological results showed that the positivity of adult dogs was more frequent in LIN than in MIN. The density of puppies with patent infection was seven times higher in LIN than in MIN, when combining coprological analysis and the estimated age structure obtained by the census.

Descriptors: epidemiology, population studies, infection, parasitology, veterinary medicine, parasitic infection, infectious disease, parasitic disease, epidemiology, elisa, immunologic techniques, laboratory techniques, infection prevalence, neighborhood income level, public health, socioeconomic status, urban populations.

Rypula, K., P. Chorbinski, and K. Ploneczka (2004). **The canine parvovirus wild-type strains infections in dogs epidemiological and diagnostic aspects.** *Polish Journal of Veterinary Sciences* 7(3): 193-197. ISSN: 1505-1773.

NAL Call Number: SF604.P65

Abstract: Biological material was taken from dogs with diarrhea. Faecal samples were taken from live animals white intestinal tract fragments (i.e. small intestine, and stomach) were taken from dead animals. In total, 18 specimens were investigated from dogs housed alone or in large groups. The samples were examined for presence of viral infections and concurrent bacterial and parasitic infestations. To test for the presence of the viral infection, latex (On Site Biotech, Sweden) and direct immunofluorescence tests were performed. At the same time to the presence of CPV infection, was conducted by the PCR method with primers complementary to a conservative region of VP1/VP2. In order to identify the bacterial strain, the material was inoculated onto appropriate media and identified with API tests, whilst parasitological examinations were performed with Fulleborn's method. CPV infection was accompanied by CCV and CAV infections, as well as bacterial ones, caused mostly by *Escherichia coli*.

Descriptors: digestive system, ingestion and assimilation, infection, veterinary medicine, diarrhea, digestive system disease, parvovirus infection, viral disease, diagnosis, fulleborn's method, laboratory techniques, polymerase chain reaction, genetic techniques, laboratory techniques, direct immunofluorescence, immunologic techniques.

Rzezutka, A., J. Osek, and B. Mizak (2003). **Canine parvovirus and enterotoxigenic *Escherichia coli* causing the death of a puppy in a kennel.** *Bulletin of the Veterinary Institute in Pulawy* 47(2): 287-291. ISSN: 0042-4870.

NAL Call Number: 41.9 P962

Abstract: A dead puppy was delivered to the laboratory for anatomic-pathological, virological and bacteriological examinations. The presence of canine parvovirus (CPV) was demonstrated by PCR in internal organs of the puppy. Bacteriological examinations proved that *Escherichia coli* in pure culture was isolated from the small intestine of the dog. The isolate possessed the estI gene encoding heat-stable enterotoxin I (STI) as determined by the presence of the 166 bp PCR amplicon. The *E. coli* bacteria analysed were negative for all other virulence marker genes as well as for fimbrial antigens tested in the study. To our knowledge, this is the first report in Poland describing the death of a puppy due to mixed infection with canine parvovirus and enterotoxigenic STI-positive *E. coli* bacteria, with the characteristics of its virulence marker genes.

Descriptors: case reports, diagnosis, mixed infections, polymerase chain reaction, postmortem examinations, puppies, virulence, canine parvovirus, dogs, *Escherichia coli*.

Sauerland, D., J. Monrad, and A. Spohr (2001). **Fund af *Trichuris vulpis* (piskeorm) og *Capillaria aerophila* (harorm) blandt danske kennelhunde. [Incidence of *Trichuris vulpis* and *Capillaria aerophila* in Danish kennel dogs.]. *Dansk Veterinærtidsskrift* 84(16): 6-9. ISSN: 0106-6854.**

NAL Call Number: 41.9 D23

Abstract: Fecal samples were collected from 162 dogs housed in 19 kennels on the island of Zealand, Denmark, during the spring 2000. Of 162 dogs, 33 were puppies < 6 month of age, 26 were young dogs between 1/2-2 years of age and 103 were adult dogs older than 2 years. All faecal samples were analysed using NaCl/glucose flotation method. *Trichuris vulpis* was detected in 15.8% of the kennels and 11.7% of the dogs. *Capillaria aerophila* was detected in 5.3% of the kennels and 6.2% of the dogs were infected. *Trichuris vulpis* was detected only in dogs older than 6 month.

Descriptors: diagnosis, disease prevalence, *Capillaria aerophila*, *Trichuris vulpis*.

Language of Text: Danish, Summary in English.

Scanziani, E., F. Origgi, A.M. Giusti, G. Iacchia, A. Vasino, G. Pirovano, P. Scarpa, and S. Tagliabue (2002). **Serological survey of leptospiral infection in kennelled dogs in Italy.** *Journal of Small Animal Practice* 43(4): 154-157. ISSN: 0022-4510.

NAL Call Number: 41.8 J8292

Abstract: Two hundred and forty-five dogs were examined serologically for the presence of antibodies against different serovars of *Leptospira interrogans*. The dogs belonged to five different groups: group 1 was composed of clinically healthy pet dogs referred for a regular veterinary check-up visit or for vaccination; group 2 was composed of stray dogs; and groups 3, 4 and 5 were composed of dogs maintained in three different kennels which had varying standards of hygiene. Seventy-two out of the 245 dogs examined were seropositive for leptospirosis. In group 1, there were 3-4 per cent seropositive dogs; in group 2, 30.3 per cent; in group 3, 13.8 per cent; in group 4, 38.6 per cent; and in group 5, 49.2 per cent. This study demonstrates that leptospiral infection is common in dogs housed in kennels, despite most of them being vaccinated, and that crowding of animals into unsanitary quarters is associated with a high prevalence of infection. The most common infecting serovars found were bratislava and grippotyphosa, confirming recent observations that demonstrate a significant change in the epidemiology of canine leptospirosis.

Descriptors: epidemiology, population studies, infection, sanitation, serology, allied veterinary medicine, leptospirosis, bacterial disease, diagnosis, serodiagnosis, diagnostic techniques, serological survey, immunologic techniques, laboratory techniques, hygiene standards, kennel housing, sanitation.

Schettini, D.A., A.P. Costa Val, L.F. Souza, C. Demicheli, O.G.F. Rocha, M.N. Melo, M.S.M. Michalick, and F. Frezard (2003). **Distribution of liposome-encapsulated antimony in dogs.** *Brazilian Journal of Medical and Biological Research* 36(2): 269-272. ISSN: 0100-879X.

NAL Call Number: R850.A1B72

Abstract: The achievement of complete cure in dogs with visceral leishmaniasis is currently a great challenge, since dogs are the main reservoir for the transmission of

visceral leishmaniasis to humans and they respond poorly to conventional treatment with pentavalent antimonials. In order to improve the efficacy of treatment, we developed a novel formulation for meglumine antimoniate based on the encapsulation of this drug in freeze-dried liposomes (LMA). The aim of the present study was to evaluate the biodistribution of antimony (Sb) in dogs following a single intravenous bolus injection of LMA. Four healthy male mongrel dogs received LMA at 3.8 mg Sb/kg body weight and were sacrificed 3, 48 and 96 h and 7 days later. Antimony was determined in the blood, liver, spleen and bone marrow. In the bone marrow, the highest Sb concentration was observed at 3 h (2.8 mug/g wet weight) whereas in the liver and spleen it was demonstrated at 48 h (43.6 and 102.4 mug/g, respectively). In these organs, Sb concentrations decreased gradually and reached levels of 19.1 mug/g (liver), 28.1 mug/g (spleen) and 0.2 mug/g (bone marrow) after 7 days. Our data suggest that the critical organ for the treatment with LMA could be the bone marrow, since it has low Sb levels and, presumably, high rates of Sb elimination. A multiple dose treatment with LMA seems to be necessary for complete elimination of parasites from bone marrow in dogs with visceral leishmaniasis.

Descriptors: parasitology, pharmacology, visceral leishmaniasis, parasitic disease.

Schubach, T., A. Schubach, and T. Okamoto (2006). **Canine sporotrichosis in Rio de Janeiro, Brazil: clinical presentation, laboratory diagnosis and therapeutic response in 44 cases (1998-2003)**. *Medical Mycology* 44(1): 87-92. ISSN: 1369-3786.

NAL Call Number: RC117.A1J68

Descriptors: skin lesions, epidemiology, histopathology, respiratory symptoms, sporotrichosis, treatment, *Sporothrix schenckii*, Brazil.

Schultz, R.D. (2006). **Canine distemper virus and canine parvovirus in the "shelter environment"**. In: *Proceedings of the North American Veterinary Conference: Small Animal and Exotics, January 7-11, 2006, Orlando, Florida, Gainesville, USA*, Vol. 20, p. 1355-1356.

NAL Call Number: SF605.N672

Descriptors: animal housing, control programmes, disease control, disease resistance, immunization, shelter, vaccination, viral diseases, *Bordetella bronchiseptica*, canine adenovirus, canine parainfluenza virus, Canine parvovirus, dogs, rabies virus.

Shahar, R., L. Banks Sills, and R. Eliasy (2003). **Stress and strain distribution in the intact canine femur: finite element analysis**. *Medical Engineering and Physics* 25(5): 387-395. ISSN: 1350-4533.

Abstract: Information regarding the stresses and strains in the canine femur during various activities is important for veterinary orthopaedic surgeons, engineers designing implants for dogs, and researchers of human orthopaedics who use dogs as models. Nevertheless, such information is currently unavailable. The objective of this

study is to determine the stress and strain distribution in the canine femur during mid-stance, for two loading scenarios. Three-dimensional finite element models of the canine femur were created. Two loading cases were considered: the hip joint reaction force alone, and the hip joint reaction force with all muscle forces acting on the femur. Force directions and magnitudes were obtained from the literature. Analyses were performed with NASTRAN for Windows(R) software. When all muscle forces were considered, stresses and strains were significantly reduced, peak compressive stresses were found to occur in the medial diaphysis, and peak tensile stresses occurred in the lateral diaphysis. While the canine femur seems to be loaded primarily in bending when only the hip joint reaction force is considered, the bending moment is significantly decreased when all muscle forces are considered as well. Further in vivo and in vitro experiments are needed to validate the results of the calculations described in this paper. It is expected that future studies will be carried out, in which the stress and strain distributions in femora with different types of implants and stems will be compared to those in the normal femur.

Descriptors: radiation biology, skeletal system, computed tomography, diagnostic techniques, imaging and microscopy techniques, laboratory techniques, finite element analysis.

Shanks, D.J., T.G. Rowan, R.L. Jones, P. Watson, M.G. Murphy, D.G. Smith, and A.D. Jernigan (2000). **Efficacy of selamectin in the treatment and prevention of flea (*Ctenocephalides felis felis*) infestations on dogs and cats housed in simulated home environments.** *Veterinary Parasitology* 91(3/4): 213-222. ISSN: 0304-4017. **NAL Call Number:** SF810.V4

Abstract: The efficacy of selamectin in protecting dogs and cats against experimentally induced environmental flea (*Ctenocephalides felis felis*) infestations was evaluated in a series of controlled and masked studies. Purpose-bred shorthaired cats and Beagles were randomly allocated to treatment with either selamectin at a minimum dosage of 6 mg kg⁻¹ in the commercial formulation or the negative control treatment (vehicle only), and housed in controlled simulated home environments capable of supporting the flea life cycle. Day 0 was defined as the first day of treatment. Treatments were administered topically in a single spot on the skin at the base of the neck in front of the scapulae. In environmental challenge studies, designed to evaluate the efficacy of selamectin in the treatment and control of established flea infestations, dogs and cats were each infested with 100 fleas on days -28 and -21 and placed in carpeted rooms in order to establish high levels of active flea infestation prior to day 0. Treatments were administered monthly for 3 months from day 0. Flea comb counts were performed on days 14, 29, 44, 59, 74, and 90. Reductions in geometric mean flea comb counts for selamectin, compared with vehicle, were >99% from day 14 onwards for dogs, and >92% on day 29 and >99% on days 44, 59, 74, and 90 for cats (P=0.0001). In studies of the prevention of environmental infestation, dogs and

cats were placed in environments capable of supporting flea infestations and given monthly treatments for 2 months, commencing on day 0. Animals were infested with 100 fleas on days 1 and 7, and flea comb counts were performed on days 29, 44, and 60. Reductions in geometric mean flea comb counts for selamectin, compared with vehicle, were >99% on days 29, 44, and 60 ($P=0.0001$) for dogs and cats. In conclusion, monthly administration of selamectin to dogs and cats housed in environments highly suited to completion of the flea life cycle was highly effective in the treatment and prevention of flea infestations, without the need for supplementary environmental control measures.

Descriptors: chemical control of fleas, selamectin, pets, experimental infections, insecticides, ectoparasiticides, ectoparasites, Beagle dogs, cats.

Shaw, S.E., M.J. Kenny, S. Tasker, and R.J. Birtles (2004). **Pathogen carriage by the cat flea *Ctenocephalides felis* (bouche) in the united kingdom.** *Veterinary Microbiology* 102(3-4): 183-188. ISSN: 0378-1135.

NAL Call Number: SF601.V44

Descriptors: animal care, infection, vector biology, cat scratch disease, bacterial disease, transmission, hemolytic anemia, blood and lymphatic disease, murine typhus.

Shaw, S.E., A.I. Lerga, S. Williams, F. Beugnet, R.J. Birtles, M.J. Day, and M.J. Kenny (2003). **Review of exotic infectious diseases in small animals entering the United Kingdom from abroad diagnosed by PCR.** *Veterinary Record* 152(6): 176-177. ISSN: 0042-4900.

NAL Call Number: 41.8 V641

Abstract: In order to confirm both the presence and identity of exotic pathogens in dogs and cats entering the UK, diagnostic data from sick animals which travelled under the Pet travel Scheme (PETS) between April 2001 and July 2002 were collated and examined. Data from animals in quarantine during that period were also reviewed. EDTA blood samples were submitted as part of a diagnostic service for exotic pathogens offered at the University of Bristol veterinary school. Blood samples were tested using PCR assays for Ehrlichia, Leishmania, and Babesia species. Blood samples from 67 dogs and 3 cats were submitted for PCR testing. None of the acts was positive by PCR for the 3 pathogens, or had any other supporting diagnostic criteria for these infections. Of the dogs, 17 that entered under PETS and 7 that entered through quarantine, were positive by PCR for one or more of the target pathogens. Babesiosis was the most frequently diagnosed illness. In dogs entering under PETS, 12 had babesiosis, one had monocytic ehrlichiosis, and 5 were infected with Leishmania species. Of the quarantined dogs, 3 had babesiosis, 5 had monocytic ehrlichiosis, and one had Leishmania infection. Moreover, coinfections were observed in some animals. These data confirm the presence of exotic infectious diseases in non-

quarantined small animals that have travelled into UK from abroad.

Descriptors: babesiosis, diagnostic techniques, importation, exotic pathogens, leishmaniasis, quarantine, *Babesia canis*, cats, dogs, *Ehrlichia canis*.

Shepherd, K. (1999). **Behavioural changes following limb amputation in dogs.** *Veterinary Record* 144(7): 185-186. ISSN: 0042-4900.

NAL Call Number: 41.8 V641

Abstract: Anecdotal evidence for behavioural changes after limb amputation in dogs is presented and the reasons for the changes are discussed.

Descriptors: surgery, animal behavior, amputation, limbs, dogs.

Sherding, R.G. (1999). **Canine infectious tracheobronchitis (kennel cough complex).** In: R.G. Sherding and S.J. Birchard (Editors), *Saunders Manual of Small Animal Practice*, 2nd edition, W.B. Saunders : Philadelphia, PA, p. 103-105. ISBN: 0721670784.

Descriptors: respiratory diseases, diagnosis, treatment, drug therapy, *Bordetella bronchiseptica*, dogs, canine parainfluenza virus, canine adenovirus, canine herpesvirus, reovirus, mycoplasma, ureaplasma.

Shida, M., M. Kadoya, S.J. Park, K. Nishifuji, Y. Momoi, and T. Iwasaki (2004). **Allergen-specific immunotherapy induces th1 shift in dogs with atopic dermatitis.** *Veterinary Immunology and Immunopathology* 102(1-2): 19-31. ISSN: 0165-2427.

NAL Call Number: SF757.2.V38

Descriptors: immune system, integumentary system, population genetics, population studies, veterinary medicine, atopic dermatitis, genetic disease, immune system disease, integumentary system disease, therapy, allergen specific immunotherapy, immunologic techniques, laboratory techniques, competitive reverse transcription polymerase chain reaction, genetic techniques, immunologic mechanism.

Simpson, A.M. (2004). **Fractures of the humerus .** *Clinical Techniques in Small Animal Practice* 19(3): 120-127. ISSN: 1096-2867.

NAL Call Number: SF911.S45

Descriptors: animal care, skeletal system, humeral fracture, bone disease, injury, therapy, humeral fracture management.

Simpson, A.M., L.L. Ludwig, S.J. Newman, P.J. Bergman, H.A. Hottinger, and A.K. Patnaik (2004). **Evaluation of surgical margins required for complete excision of cutaneous mast cell tumors in dogs.** *Journal of the American Veterinary Medical Association* 224(2): 236-240. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: Objective-To determine whether neoplastic mast cells extended into tissue 1, 2, or 3 cm laterally or deeper than 1 fascial plane from the visible edge of cutaneous mast cell tumors (MCTs) in dogs. Design-Prospective study. Animals-21

client-owned dogs with gtoREQ 1 cutaneous MCT. Procedures-After preparation for surgery, each dog's skin was marked 1, 2, and 3 cm from the tumor edge at 0degree, 90degree, 180degree, and 270degree. At each 3-cm mark, deep fascia was exposed and sutured to the skin; the tumor was excised in routine fashion and fixed in formalin. Tumors were graded; margins were examined histologically for neoplastic mast cells. Results-23 cutaneous MCTs in 21 dogs were included in this study. Fifteen (65%) tumors were located on the trunk, 5 (22%) on the hind limbs, and 3 (13%) on the head and neck. There were 3 (13%) grade-I and 20 (87%) grade-II tumors. All grade-I tumors were completely excised at all margins. Seventy-five percent of the graded-II tumors were completely excised at the 1-cm margin, and 100% were completely excised at the 2-cm margin. Two grade-II MCTs located on the hind limbs of dogs were excised with a complete but close (within 1 mm) deep margin. Conclusions and Clinical Relevance-Results suggest that a 2-cm lateral margin and a deep margin of 1 fascial plane appear to be adequate for complete excision of grade-I and -II MCTs in dogs.

Descriptors: immune system, integumentary system, surgery, tumor biology, veterinary medicine, cutaneous mast cell tumor, immune system disease, integumentary system disease, neoplastic disease, histology, histology and cytology techniques, laboratory techniques, surgical tumor excision, surgical margins.

Smarick, S.D., S.C. Haskins, J. Aldrich, J.E. Foley, P.H. Kass, M. Fudge, and G.V. Ling (2004). **Incidence of catheter-associated urinary tract infection among dogs in a small animal intensive care unit.** *Journal of the American Veterinary Medical Association* 224(12): 1936-1940. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: Objective-To determine incidence of and possible risk factors for catheter-associated urinary tract infection (UTI) among dogs hospitalized in an intensive care unit and compare results of bacterial culture of urine samples with results of bacterial culture of catheter tips. Design-Prospective study. Animals-39 dogs. Procedure-A standard protocol for aseptic catheter placement and maintenance was used. Urine samples were obtained daily and submitted for bacterial culture. When possible, the urinary catheter tip was collected aseptically at the time of catheter removal and submitted for bacterial culture. Bacteria that were obtained were identified and tested for antimicrobial susceptibility. Results-4 of the 39 (10.3%) dogs developed a UTI. The probability of remaining free from UTI after 1 day in the intensive care unit was 94.9%, and the probability of remaining free from UTI after 4 days was 63.3%. Bacteria isolates were generally common urinary tract pathogens and were susceptible to most antimicrobials. Specific risk factors for catheter-associated UTI, beyond a lack of antimicrobial administration, were not identified. Positive predictive value of bacterial culture of urinary catheter tips was only 25%. Conclusions and Clinical Relevance-Results suggest that placement of an indwelling urinary catheter in dogs

is associated with a low risk of catheter-associated UTI during the first 3 days after catheter placement, provided that adequate precautions are taken for aseptic catheter placement and maintenance. Results of bacterial culture of urinary catheter tips should not be used to predict whether dogs developed catheter-associated UTI.

Descriptors: infection, urinary system, veterinary medicine, urinary tract infection, bacterial disease, urologic disease, bacterial culture, culturing techniques, laboratory techniques, catheter tip, medical equipment, catheterization, small animal intensive care unit.

Smith, J.A. and N.S. Matthews (1998). **Preanesthetic laboratory testing - a survey of client compliance rate and incidence of abnormal test results: preliminary results.** *Veterinary Surgery* 27(2): 169. ISSN: 0161-3499.

NAL Call Number: SF911.V43

Descriptors: anesthesia, preoperative care, laboratory diagnosis, surgery, dogs, cats.

Sokolow, S.H., C. Rand, S.L. Marks, N.L. Drazenovich, E.J. Kather, and J.E. Foley (2005).

Epidemiologic evaluation of diarrhea in dogs in an animal shelter. *American Journal of Veterinary Research* 66(6): 1018-1024. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: OBJECTIVES: To determine associations among infectious pathogens and diarrheal disease in dogs in an animal shelter and demonstrate the use of geographic information systems (GISs) for tracking spatial distributions of diarrheal disease within shelters. SAMPLE POPULATION: Feces from 120 dogs. PROCEDURE: Fresh fecal specimens were screened for bacteria and bacterial toxins via bacteriologic culture and ELISA, parvovirus via ELISA, canine coronavirus via nested polymerase chain reaction assay, protozoal cysts and oocysts via a direct fluorescent antibody technique, and parasite ova and larvae via microscopic examination of direct wet mounts and zinc sulfate centrifugation flotation. RESULTS: Salmonella enterica and Brachyspira spp were not common, whereas other pathogens such as canine coronavirus and Helicobacter spp were common among the dogs that were surveyed. Only intestinal parasites and Campylobacter jejuni infection were significant risk factors for diarrhea by univariate odds ratio analysis. Giardia lamblia was significantly underestimated by fecal flotation, compared with a direct fluorescent antibody technique. Spatial analysis of case specimens by use of GIS indicated that diarrhea was widespread throughout the entire shelter, and spatial statistical analysis revealed no evidence of spatial clustering of case specimens. CONCLUSIONS AND CLINICAL RELEVANCE: This study provided an epidemiologic overview of diarrhea and interacting diarrhea-associated pathogens in a densely housed, highly predisposed shelter population of dogs. Several of the approaches used in this study, such as use of a spatial representation of case specimens and considering multiple etiologies simultaneously, were novel and illustrate an integrated approach to epide-

miologic investigations in shelter populations.

Descriptors: diarrhea, housing, California, complementary genetics, enzyme linked immunosorbent assay, feces, animal shelter, dogs, geographic information systems, polymerase chain reaction (PCR).

Sozmen, M., P.J. Brown, and T.J. Whitbread (2000). **Idiopathic salivary gland enlargement (sialadenosis) in dogs: a microscopic study.** *Journal of Small Animal Practice* 41(6): 243-247. ISSN: 0022-4510.

NAL Call Number: 41.8 J8292

Abstract: A histological, histochemical and morphometric study was performed on submandibular salivary glands from 13 dogs which presented with a submandibular mass or swelling that proved to be a portion of non-inflammatory and non-neoplastic submandibular salivary gland. There were no consistent changes in lectin-binding histochemistry or immunohistochemical expression of various cell markers, and, in most cases, there was no measurable difference in acinar size in the affected gland. The possible explanation for the clinical salivary gland enlargement is therefore unclear.

Descriptors: salivary glands, histochemistry, immunohistochemistry, histology, diagnosis, salivary gland diseases, microscopy, dogs.

Steger, H., L. Gaschen, and D. Spreng (1997). **Septische Peritonitis nach rupturiertem ATOPA-Tumor: Intensivbehandlung mittels Technik der offenen Peritoneal-lavage beim Hund. [Septic peritonitis caused by a ruptured ATOPA-tumour: intensive care and treatment by open peritoneal lavage in a dog.]** *Kleintierpraxis* 42(1): 53-61. ISSN: 0023-2076.

Descriptors: castration, fluid therapy, postoperative complications, septic peritonitis, sepsis, dogs.

Language of Text: German, Summary in English.

Swinnen, C. and M. Vroom (2004). **The clinical effect of environmental control of house dust mites in 60 house dust mite-sensitive dogs.** *Veterinary Dermatology* 15(1): 31-36. ISSN: 0959-4493.

NAL Call Number: SF901.V47

Abstract: The purpose of this study was to evaluate the effects of benzyl benzoate, an acaricide for the control of house dust mites, in 60 house dust mite-sensitive dogs. All dogs showed positive reactions on intradermal skin testing for house dust mites (*Dermatophagoides farinae*, *Dermatophagoides pteronyssinus*) alone, or house dust mites with storage mites (*Acarus siro*, *Tyrophagus putrescentiae*, *Glycophagus domesticus*). House dust samples from the owners' houses were collected and sent to the clinic, where the authors performed a test (Acarex(R) test) to semiquantify the amount of guanine, a house dust mite product. Treatment with benzyl benzoate was repeated until the house dust samples were negative for house dust mite guanine. After treatment, 29 out of 60 house dust mite-sensitive dogs (48%) showed no skin lesions or

pruritus. Moderate results were achieved in 22 dogs (36%), with reduced pruritus and minimal skin lesions, but still requiring medication. In 13 dogs, this involved regular treatment (3-4 times a year) with antibiotics and antiyeast medication, and in eight dogs, immunotherapy was used. One dog was controlled with essential fatty acids as monotherapy and one dog was controlled with immunotherapy and essential fatty acids. In the remaining nine dogs (15%), the pruritus remained the same, and these dogs were controlled with oral corticosteroids. These results indicate that house dust mite elimination is a useful tool in the management of house dust mite-sensitive dogs.

Descriptors: antibiotics, benzyl benzoate, control, corticoids, disease control, drug therapy, essential fatty acids, house dust mites, immunotherapy, mite control, pruritus, skin lesions, *Acarus siro*, *Dermatophagoides farinae*, *Dermatophagoides pteronyssinus*, dogs, mites, *Tyrophagus putrescentiae*.

Language of Text: English, Summaries in German, Spanish and French.

Tams, T.R. (2001). **Intensive care management for dogs with severe viral enteritis.** *Proceedings of the North American Veterinary Conference* 15: 59-61.

NAL Call Number: SF605.N672

Descriptors: dogs, enteritis, viral diseases, canine parvovirus, fluid therapy, drug therapy, blood transfusion, anthelmintics, esophagitis, pain, parvovirus enteritis.

Notes: In the volume: Veterinary technicians and practice managers. Part of a three volume set. Meeting held January 13-17, 2001 in Orlando, Florida.

Tegzes, J.H. and B. Puschner (2002). **Amanita mushroom poisoning: Efficacy of aggressive treatment of two dogs.** *Veterinary and Human Toxicology* 44(2): 96-99. ISSN: 0145-6296.

NAL Call Number: SF601.A47

Abstract: Amatoxins, the primary toxins found in mushrooms of the genus *Amanita*, are very toxic to dogs. Acute fulminant liver failure and death can occur within a few days of ingestion. By their curious nature, dogs, especially young dogs, are prone to ingest mushrooms. Early identification of suspect mushrooms, and prompt emergency measures aimed at decreasing absorption of the toxins can improve the chance of survival. Knowing the major clinical syndromes associated with *Amanita* mushroom toxicosis can help direct the treatment and supportive care of affected animals and improve survival rates. We describe 2 cases in dogs with confirmed ingestion of *Amanita phalloides* and *Amanita ocreata* resulting in fulminant liver failure. Death occurred in 1 dog despite aggressive treatment measures including hemoperfusion, while aggressive measures resulted in a favorable outcome in the other dog.

Descriptors: amtoxins, mushrooms, *Ahumanita*, toxicity, treatment, supportive care, liver failure, death.

Tsukui, T., S. Maeda, K. Ohmori, K. Masuda, K. Ohno, M. Sakaguchi, H. Tsujimoto, and S. Iwabuchi (2004). **Expression analysis of macrophage-derived chemokine (mdc/ccl22) gene in canine atopic dermatitis.** *Journal of Allergy and Clinical Immunology* 113(2 Suppl.): S55. ISSN: 0091-6749.

NAL Call Number: 448.8 J8236

Descriptors: atopic dermatitis, genetic disease, reverse transcription polymerase chain reaction.

Notes: Meeting Information: 60th Annual Meeting of the American Academy of Allergy, Asthma and Immunology (AAAAI), San Francisco, CA, USA; March 19-23, 2004.

Unamuno, A., L.I. Barberis, M.C. Pajaro, and A.D. Espinosa (1999). **Causas organicas de cambios de comportamiento en perros: diagnostico, pronostico y tratamiento. [Use of bacteriocins as epidemiological markers of a focus of Pseudomonas aeruginosa infection in a dog breeding kennel in Rio Cuarto, Cordoba, Argentina.]** *Revista De Medicina Veterinaria Buenos Aires* 80(3): 208-212. ISSN: 0325-6391.

NAL Call Number: 41.8 B86

Abstract: A total of 15 strains of *P. aeruginosa* were isolated and their antibiotic sensitivity determined by the agar disc diffusion test. The 15 strains had the same biotype, sensitivity to antibiotics and the same sensitivity to a panel of 10 bacteriocin-producing strains of *P. aeruginosa*. It is concluded that the bacteriocin test confirmed that there was a single focus of infection in the kennel.

Descriptors: epidemiology, characterization, bacteriocins, antibiotics, bacterial diseases, dogs, *Pseudomonas aeruginosa*.

Language of Text: Spanish, Summary in English.

Urban, J.E. and A. Broce (1998). **Flies and their bacterial loads in greyhound dog kennels in Kansas.** *Current Microbiology* 36(3): 164-170. ISSN: 0343-8651.

NAL Call Number: QR1.C78

Abstract: Breeders of Greyhound dogs traditionally feed racing animals and nursing bitches raw meat, and that meat generally is obtained frozen from commercial renderers. Previous studies have shown that the rendered meat is frequently contaminated with enteric bacteria, including *Salmonella* spp., and that during thawing the rendered meat is exposed to filth flies common in dog kennels. Nursing Greyhound pups tend to experience a high morbidity and mortality from intestinal infections, and the authors attempted to determine whether enterics could be spread to pups through contaminated flies. At intervals during 1995 and 1996, flies were trapped or were net-collected from 10 dog breeding kennels in the region around Abilene, Kansas, USA. Trapped flies were identified and counted to determine population numbers, and netted flies were cultured in tetrathionate broth and streaked to

medium selecting for Salmonella sp. and other lactose-negative Gram-negative bacteria. The relative numbers of different fly species varied with the sampling method, but traps and sweep nets produced similar proportions of the different fly species. Blowflies (*Cochliomyia macellaria*, *Phormia regina*, *Phaenicia sericata* [*Lucilia sericata*] and *P. cuprina* [*L. cuprina*]) were twice as likely to be contaminated with enteric bacteria as any other fly (flesh flies [Sarcophagidae], house flies [*Musca domestica*], stable flies [*Stomoxys calcitrans*] and others). The most common enteric bacteria found were *Proteus* spp., followed by *Providencia* spp., *Pseudomonas* spp. and *Salmonella* spp. The incidence of *Salmonella* and *Proteus* spp. seemed to correlate more with accessibility of flies to dog excrement than to rendered meat. The apparent high incidence of enteric contamination of filth flies clearly implicates them as vectors of enteric diseases in kennels.

Descriptors: Greyhound dogs, kennels, dog feces, disease vectors, puppies, dog foods, bacteria, enteric diseases, *Salmonella*, *Proteus*, *Providencia*, *Pseudomonas*, *Cochliomyia macellaria*, *Phormia regina*, *Lucilia sericata*, *Lucilia cuprina*, *Musca domestica*, *Stomoxys calcitrans*, Sarcophagidae, Muscidae, Calliphoridae.

van Gucht, S., H. Nauwynck, and M. Pensaert (2001). **Prevalentie van het caniene herpesvirus in kennels en het mogelijk verband met vruchtbaarheidsproblemen en neonatale sterfte. [Prevalence of canine herpesvirus in kennels and the possible association with fertility problems and neonatal death]**. *Vlaams Diergeneeskundig Tijdschrift* 70(3): 204-211. ISSN: 0303-9021.

NAL Call Number: 41.8 V84

Abstract: The objective of this study was to determine the prevalence of canine herpesvirus 1 (CHV1) in breeding bitches in Belgian kennels and to relate this to fertility problems and/or neonatal death. By using a seroneutralization test with complement to detect anti-CHV1 antibodies, a prevalence of 49.5% was found in a population of 97 breeding bitches in 18 kennels. In nine kennels, all examined breeding bitches were negative. In the other nine kennels 2/3 to all of the examined breeding bitches were positive. In seven kennels with positive breeding bitches serious problems were observed concerning neonatal death and/or infertility, whereas only one kennel with negative breeding bitches had problems with infertility, which indicates that there is a relation between the presence of positive breeding bitches and neonatal death and/or infertility in the kennel. This relationship was also observed at the animal level. 76% of the bitches that had recently lost a litter before the age of 3 weeks and 57% of the bitches with fertility problems were positive. In contrast, only 33% of the "problem-free" bitches were positive. It was concluded that CHV1 is kennel-related and that kennels, where the virus is enzootically present, experience neonatal death and infertility more frequently.

Descriptors: bitches, female infertility, kennels, reproductive disorders, seropreva-

lence, canine herpesvirus, dogs.

Language of Text: Dutch, Summary in English.

van Vonderen, I.K.v., H.S. Kooistra, and A. Rijnberk (1998). **Influence of veterinary care on the urinary corticoid:creatinine ratio in dogs.** *Journal of Veterinary Internal Medicine* 12(6): 431-435. ISSN: 0891-6640.

NAL Call Number: SF601.J65

Abstract: The influence of a visit to a veterinary practice for vaccination, a visit to a referral clinic for orthopaedic examination, or hospitalization in a referral clinic for 1.5 days on the urinary corticoid:creatinine (C:C) ratio in pet dogs was investigated. In experiment 1, owners collected voided urine samples from 19 healthy pet dogs at specified times before and after taking the dogs to a veterinary practice for yearly vaccination. In experiment 2, 12 pet dogs were evaluated in a similar way before and after an orthopaedic examination at a referral clinic. In experiment 3, 9 healthy pet dogs were hospitalized for 1.5 days and urine samples were collected before, during and after this stay. Basal urinary C:C ratios in all experiments ranged from 0.8 to 8.3 X 10⁻⁶. In experiment 1, the urinary C:C ratio after the visit to the veterinary practice ranged from 0.9 to 22.0 X 10⁻⁶. Six dogs had a significantly increased urinary C:C ratio (responders), but in 5 of these dogs the ratio was $\leq 10 \times 10^{-6}$. In experiment 2, 8 of 12 dogs responded significantly with urinary C:C ratios ranging from 3.1 to 27.0 X 10⁻⁶. In experiment 3, 8 of 9 dogs had significantly increased urinary C:C ratios, ranging from 2.4 to 24.0 X 10⁻⁶, in some or all urine samples collected during hospitalization. In 4 dogs urinary C:C ratios 12 h after hospitalization were still significantly higher than the initial values. It is concluded that a visit to a veterinary practice, an orthopaedic examination in a referral clinic and hospitalization are stressful conditions for dogs. A large variation occurs in response, and in individual dogs the increases in urinary C:C ratios can exceed the cutoff level for the diagnosis of hyperadrenocorticism. Therefore, urine samples for measurement of the C:C ratio in the diagnosis of hyperadrenocorticism should be collected in the dog's home environment, to avoid the influence of stress on glucocorticoid secretion.

Descriptors: glucocorticoids, hydrocortisone, stress, clinical examination, diagnostic techniques, urine, adrenal gland diseases, urine, creatinine, cushing's syndrome, adrenal cortex hormones, ratios, age differences, sampling, veterinary practice, animal hospitals.

Vexenat, J.A., P.L. Olliaro, J.A.F. de Castro, R. Cavalcante, J.H.F. Campos, J.P. Tavares, and M.A. Miles (1998). **Clinical recovery and limited cure in canine visceral leishmaniasis treated with aminosidine (paromomycin).** *American Journal of Tropical Medicine and Hygiene* 58(4): 448-453. ISSN: 0002-9637.

NAL Call Number: 448.8 Am326

Abstract: A study was carried out in Teresina, Piaui State, Brazil, to investigate

clinical recovery, relapse and cure in symptomatic canine visceral leishmaniasis (VL) treated with aminosidine sulfate [paromomycin]. A total of 21 dogs divided into 3 groups (3, 6 and 12 dogs) with parasitologically proven clinical VL (*Leishmania chagasi* [*L. infantum chagasi*] infection) were treated with aminosidine i.m. at doses of 20 mg/kg/day for 15 days; 80 mg/kg/day for 20 days; and 40 mg/kg/day for 30 days, respectively. Follow-up was by parasitological examination of bone marrow and skin, serology using the indirect immunofluorescent antibody test, and clinical examination for signs of visceral leishmaniasis or adverse effects of treatment. In the animals treated with 20 mg/kg/day for 15 days, there was dramatic clinical improvement with disappearance of conjunctivitis, increase in appetite, weight gain, and recovery of normal skin condition and a healthy coat, but parasitological relapse occurred between 50 and 100 days after initiation of treatment. Adverse effects were observed in dogs treated with 80 mg/kg/day for 20 days; 3 dogs died during or just after treatment, 2 showed temporary recovery, and one showed total clinical and parasitological cure that was maintained for 4 years. Although adverse effects and relapses were seen in some dogs treated with 40 mg/kg/day for 30 days, 3 of 12 dogs showed complete parasitological and clinical cure that was sustained for at least 4 years. It is concluded that aminosidine treatment cannot be recommended as an alternative to the humane destruction of dogs for the control of canine visceral leishmaniasis because ineffective treatment may prolong carrier status or encourage development of drug resistance.

Descriptors: paromomycin, visceral leishmaniasis, antiprotozoal agents, animal diseases, clinical aspects, relapse, adverse effects, parasites, protozoal infections.

Vianna, M.L. and D.J.J. Krahwinkel (2004). **Double aortic arch in a dog.** *Journal of the American Veterinary Medical Association* 225(8): 1222-1224. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Abstract: Double aortic arch is a rare congenital heart defect resulting from improper development of the embryonic arches. Naturally occurring double aortic arches have been rarely reported, and animals with double aortic arches generally have a poor prognosis for survival. Most dogs and cats that undergo surgical correction of double aortic arches die during or a few hours after surgery.

Descriptors: cardiovascular system, transport and circulation, veterinary medicine, double aortic arch, congenital disease, heart disease, diagnosis, pathology, surgery, symptom, therapy, esophagography, diagnostic techniques, imaging and microscopy techniques, laboratory techniques, heart surgery, radiography.

Villeneuve, V., F. Beugnet, and G. Bourdoiseau (2000). **Efficacy of oxfendazole for the treatment of giardiasis in dogs. Experiments in dog breeding kennels.** *Parasite* 7(3): 221-226. ISSN: 1252-607X.

NAL Call Number: QL757.P3737

Abstract: Giardiasis is one of the most frequent parasites of dogs and cats. Since several years, the treatment is based on the use of metronidazole. A coproscopic study in four dog kennels was conducted to demonstrate, at a significant level, the efficacy of oxfendazole (Dolthene(R), Merial). At the posology of 11.3 mg/kg each day during three days (D1, D2 and D3), no dogs eliminated Giardia cysts and all dogs are clinically cured. The importance of hygienic measures is underlined. In kennels 1 and 2 where hygienic conditions were poor, dogs reexcreted cysts again after treatment. In kennels where the boxes were disinfected, no dogs, treated with 22.6 or 11.3 mg/kg, reexcreted Giardia cysts.

Descriptors: digestive system, ingestion and assimilation, parasitology, pharmacology, giardiasis, digestive system disease, parasitic disease.

Wang, Z.X., Y. Hu, J.L. Shen, K.C. Wang, H.Y. Wang, B.L. Jiang, P. Zhao, Z.C. Wang, W. Ding, F. Wang, and X.F. Xia (2003). **Longitudinal investigation and experimental studies on thelaziasis and the intermediate host of *Thelazia callipaeda* in Guanghua county of Hubei province.** *Zhonghua Liu Xing Bing Xue Za Zhi* 24(7): 588-590. ISSN: 0254-6450.

Abstract: OBJECTIVE: To verify houseflies *Musca* spp. as the intermediate host of *Thelazia callipaeda* and reveal epidemiological situation of thelaziasis in Hubei province. METHODS: Dogs eyes infected with *T. callipaeda*, 400 houseflies *Musca* and 259 fruitflies *Amiota okadai* in the city of Laohekou city (previously named as Guanghua county) of Hubei province had been investigated since September 2000. The newborn larvae of *T. callipaeda* from Laohekou suburbs were fed to houseflies *Musca* and *A. okadai*. Larvae used for the study were isolated from female *T. callipaeda* in laboratory and the susceptibility to houseflies *Musca* and *A. okadai* was observed. RESULTS: Twenty-one dogs from Laohekou, the original epidemic areas of thelaziasis were examined and 7 positive dogs in 21 (33.3%) and 11 *T. callipaeda* (9 females and 2 males) were identified. From 1975 to 2000, no thelaziasis cases were found through retrospective surveys. These 200 houseflies *Musca* and 135 *A. okadai* were dissected for examination but showed all negative with the infection. However, newborn larvae of *T. callipaeda* were used to experimentally infect 112 houseflies *Musca* and 84 *A. okadai* and all infected flies were examined on the 20th day after inoculation. As a consequence, houseflies *Musca* failed to be infected but 9 in 84 (10.7%) *A. okadai* were positive. 26 infective larvae of *T. callipaeda* were obtained and 21 of them were inoculated into right eye of one rabbit. The female worm began to produce newborn larvae in 37 days after infection and 3 adult *T. callipaeda* (two females and one male) were obtained. CONCLUSIONS: Fruitflies *A. okadai* from Hubei province were susceptible to *T. callipaeda*, which was similar to the result of experimental studies in Anhui province. This survey further confirmed that *A. okadai* was the intermediate host of *T. callipaeda* but not houseflies *Musca*. Infective resources (adult dogs, for instance) had been under controlled thus intermediate host

of *Thelazia callipaeda* had been eradicated in this rural area.

Descriptors: houseflies, intermediate host, *Thelazia callipaeda*, experimentally infected dogs, epidemiology.

Weber, E., S. Hunter, K. Stedman, S. Dreitz, T. Olivry, A. Hillier, and C. McCall (2003).

Identification, characterization, and cloning of a complementary dna encoding a 60-kd house dust mite allergen (der f 18) for human beings and dogs. *Journal of Allergy and Clinical Immunology* 112(1): 79-86 . ISSN: 0091-6749.

NAL Call Number: 448.8 J8236

Abstract: Background: House dust mites of the *Dermatophagoides* genus are the most important cause of perennial allergic disease in both humans and companion animals. Although the major mite allergens for humans are proteins of relatively low molecular weight, this is not the case for dogs. Western blotting shows that canine anti-mite IgE responses are directed primarily toward proteins in the molecular weight range of 50 to 120 kd. Objective: The objectives of this study were to characterize a *D. farinae* allergen with a molecular weight of approximately 60 kd and to isolate the cDNA coding for this allergen. Methods: A protein of apparent molecular weight of 60 kd was identified by Western blotting by using canine serum IgE from house dust mite-sensitized atopic dogs. The protein was purified from homogenized *D. farinae* mite bodies by ammonium sulfate precipitation, followed by gel filtration and cation exchange HPLC. The presence of IgE directed to the 60-kd protein in sera from humans and dogs with dust mite allergy was measured by Fcε1R1α-based ELISA. A cDNA encoding a full-length 60-kd protein was isolated from a *D. farinae* cDNA library by a combination of both PCR amplification and hybridization screening. A panel of mAbs specific for the 60-kd protein was generated and used to localize the protein in whole body sections of *D. farinae* mites. Results: ELISA showed that the purified protein bound IgE in 54% of the sera from patients with *D. farinae* allergy. In addition, the 60-kd protein was able to bind IgE in 57% to 77% of *D. farinae*-sensitized dogs. A cDNA was isolated that encoded a protein of 462 amino acids, consisting of a 25 amino acid signal sequence and a 437 amino acid mature protein. The calculated molecular weight of the mature protein is 50 kd, and the amino acid sequence contains a single N-glycosylation site. A protein database search showed homology with multiple chitinases. A mAb specific for the 60-kd chitinase recognized the allergen in the mite digestive system, but fecal pellets did not stain positively for this allergen. Conclusions: A 60-kd *D. farinae* protein (Der f 18), with homology to chitinase, is a major allergen for humans and dogs sensitive to house dust mites.

Descriptors: house dust mites, *Dermatophagoides* spp., allergens, companion animals, western blotting, canine anti-mite IgE response, chitinase, sensitivity.

Weinstein, J. and S.C. Ralphs (2004). **External coaptation.** *Clinical Techniques in Small Animal Practice* 19(3): 98-104. ISSN: 1096-2867.

NAL Call Number: SF911.S45

Descriptors: animal care, skeletal system, fracture, injury, therapy, luxation, injury, therapy, bandage, medical supplies, cast, medical supplies, external coaptation, sling, medical supplies, splint, medical equipment, postoperative swelling.

Wergin, M.C. and B. Kaser Hotz (2004). **Plasma vascular endothelial growth factor (vegf) measured in seventy dogs with spontaneously occurring tumours.** *In Vivo (Attiki)* 18(1): 15-20. ISSN: 0258-851X.

NAL Call Number: R850.A1I58

Abstract: Background: Vascular endothelial growth factor (VEGF) acts specifically on endothelial cells mediating tumour neovascularisation and initiating tumour growth and metastasis. In humans, high VEGF levels are correlated with poorer prognosis but in dogs minimal information on plasma VEGF is available. Therefore, we analysed plasma VEGF in a variety of spontaneous canine tumours. Materials and Methods: Plasma from seventy dogs with various spontaneous tumours was taken prior to radiation therapy. A human VEGF ELISA was used for analysis. Results: Mean plasma VEGF was 7.2+-7.8 pg/ml. Mean plasma VEGF level varied among different tumour types with the highest level in oral melanomas (12.4 pg/ml). In patients with sarcomas of soft tissue or bone origin, plasma VEGF levels increased significantly with decreasing haemoglobin concentration (p=0.013). Conclusion: Canine plasma VEGF levels depend on tumour histology, with higher levels found in more aggressive tumours. The negative correlation between plasma VEGF and haemoglobin (hb) is most probably due to tissue hypoxia seen in anaemic animals.

Descriptors: tumor biology, carcinoma, neoplastic disease, fibrosarcoma, connective tissue disease, neoplastic disease, malignant histiocytosis, blood and lymphatic disease, melanoma, osteosarcoma, bone disease, sarcoma, connective tissue disease, elisa, immunologic techniques, laboratory techniques.

White, S.D., R.A.W. Rosychuk, and K.V. Fieseler (2001). **Clinicopathologic findings, sensitivity to house dust mites and efficacy of milbemycin oxime treatment of dogs with Cheyletiella sp. infestation.** *Veterinary Dermatology* 12(1): 13-18. ISSN: 0959-4493.

NAL Call Number: SF901.V47

Abstract: Twenty-three dogs with positive skin scrapings for Cheyletiella sp. were treated with milbemycin oxime using a protocol approximating 2 mg/kg orally once weekly for three weeks. Nineteen of these dogs belonged to a household of 41 dogs and two dogs were in households with one other dog. All in-contact dogs were treated. Pre-treatment intradermal skin tests showed positive reactions to Dermatophagoides farinae in 13 dogs and to D. pteronyssinus in 12 dogs; these became

negative post-treatment in four and seven dogs, respectively. All dogs showed a dramatic reduction in clinical signs one week after the third treatment. Eighteen dogs no longer had mites on skin scrapings, three had dead mites and two had deformed eggs. Recurrence of clinical signs necessitated two additional courses of the protocol in the multiple dog household and for a dog receiving immunosuppressive treatment for pemphigus foliaceus. Possible adverse reactions to the milbemycin (vomiting, lethargy) were noted once in two dogs.

Descriptors: pathology, clinical aspects, skin tests, relapse, adverse effects, efficacy, milbemycins, ectoparasitoses, skin diseases, adverse effects, treatment, acaricides, *Cheyletiella*, *Dermatophagoides farinae*, *Dermatophagoides pteronyssinus*.

Language of Text: English, Summaries in German, Spanish and French.

Wiedmeyer, C.E., P.J. Johnson, L.A. Cohn, and R.L. Meadows (2003). **Evaluation of a continuous glucose monitoring system for use in dogs, cats, and horses.** *Journal of the American Veterinary Medical Association* 223(7): 987-992. ISSN: 0003-1488.

NAL Call Number: 41.8 AM3

Abstract: Objective: To evaluate a continuous glucose monitoring system (CGMS) for use in dogs, cats, and horses. Design: Prospective clinical study. Animals: 7 horses, 3 cats, and 4 dogs that were clinically normal and 1 horse, 2 cats, and 3 dogs with diabetes mellitus. Procedure: Interstitial glucose concentrations were monitored and recorded every 5 minutes by use of a CGMS. Interstitial glucose concentrations were compared with whole blood glucose concentrations as determined by a point-of-care glucose meter. Interstitial glucose concentrations were also monitored in 2 clinically normal horses after oral and IV administration of glucose. Results: There was a positive correlation between interstitial and whole blood glucose concentrations for clinically normal dogs, cats, and horses and those with diabetes mellitus. Events such as feeding, glucose or insulin administration, restraint, and transport to the clinic were recorded by the owner or clinician and could be identified on the graph and associated with time of occurrence. Conclusions and Clinical Relevance: Our data indicate that use of CGMS is valid for dogs, cats, and horses. This system alleviated the need for multiple blood samples and the stress associated with obtaining those samples. Because hospitalization was not required, information obtained from the CGMS provided a more accurate assessment of the animal's glucose concentrations for an extended period, compared with measurement of blood glucose concentrations. Use of the CGMS will promote the diagnostic and research potential of serial glucose monitoring.

Descriptors: blood chemistry, blood sugar, diabetes mellitus, techniques, cats, dogs, horses, blood collection, continuous glucose monitoring system, stress.

Willem, C., S. Latour, and A. Lacheretz (2001). **Control of canine parvovirus infection in breeding kennels : study of the efficacy of a high titer attenuated canine parvovirus vaccine.** *Revue De Medecine Veterinaire* 152(5): 373-378. ISSN: 0035-1555.
NAL Call Number: SF604.R48

Abstract: The aim of this study, which was conducted in two infected breeding kennels, is to assess the efficacy of a high titre attenuated canine parvovirus vaccine in 4- to 8-week-old pups and, in parallel, to determine the extent of the reduction in the critical period that this vaccine enables us to obtain. At the start of the intervention, the 126 pups in the two breeding kennels constituted a sensitive study population -- 108 (85.71 %) had non-immunizing HI antibody titers (\leq 64). A fortnight after a single injection with the vaccine, the rate of immunity was 91.27 % : 115 presented HI antibody titers \leq 128. The overall postvaccination seroconversion rate was 81.48 % for the 108 pups which had prevaccination titers of \leq 64. The referential seroconversion rates of 95 %, 50 % and 0 % corresponded to HI antibody titers of $<$ 32, 64 and \leq 128 respectively. With reference to traditional vaccines, these results enable the critical period to be reduced from 30 to 10 days, at a seroconversion rate of 95 %, and from 20 to 0 day(s), at a seroconversion rate of 50 %. The age groups to be vaccinated (4 to 8 weeks) correspond to the age groups most affected by a previous epizootic (6 to 8 weeks), with an anticipation period of 15 days (4 and 5 weeks). The pups, aged from 4 to 5 weeks old, which had HI antibody titers of \leq 64 responded well to vaccination (vaccine efficacy 100 %).

Descriptors: dog diseases, kennels, live vaccines, vaccination, canine parvovirus, dogs.

Language of Text: English, Summary in French.

Wise, J.K., B.L. Heathcott, and A.J. Shepherd (2003). **Results of the 2002 AVMA survey of us pet-owning households regarding use of veterinary services and expenditures.** *Journal of the American Veterinary Medical Association* 222(11): 1524-1525. ISSN: 0003-1488.

NAL Call Number: 41.8 Am3

Descriptors: animal care, veterinary medicine, American Veterinary Medical Association(AVMA), pet owning households, veterinary services, expenditures, household utilization.

Wiseman, M.L., A.M. Nolan, J. Reid, and E.M. Scott (2001). **Preliminary study on owner-reported behaviour changes associated with chronic pain in dogs.** *Veterinary Record* 149(14): 423-424. ISSN: 0042-4900.

NAL Call Number: 41.8 V641

Abstract: This article presents and discusses the results of a study conducted on owners of 13 dogs diagnosed with chronic degenerative diseases. The owners were asked to assess and report changes in the dog's behaviour, attitude and demeanor. The

reports of the owners were compared with the assessment of 6 veterinary surgeons regarding chronic pain. The data provided by the owners suggest that dog owners may be a valuable source of information about behavioural disturbances.

Descriptors: behavior, behavioral changes, pain, chronic, degenerative diseases.

Yamamoto, S., T. Kuribayashi, K. Kawato, K. Ohnaka, K. Furuhashi, and M. Fukuyama (2003). **C-reactive protein and immune responses in dogs inoculated with *Bordetella bronchiseptica***. *Inflammation Research* 52(Suppl. 2): S 139. ISSN: 1023-3830.
NAL Call Number: RS122.A3

Descriptors: pneumonia, bacterial disease, respiratory system disease, indirect fluorescence antibody test, antibody responses, *Bordetella bronchiseptica*.

Notes: Meeting Information: 6th World Congress on Inflammation, Vancouver, British Columbia, Canada; August 2-6, 2003.

Yamashita, K., C. Fujiwara, R. Azuma, T. Sawazaki, Y. Nakao, and A. Hasegawa (2002). **Determination of antigenic proteins of housedust mites in 90 dogs suffering from atopic dermatitis**. *Journal of Veterinary Medical Science* 64(8): 673-676. ISSN: 0916-7250.

NAL Call Number: SF604.J342

Abstract: House dust mites *Dermatophagoides pteronyssinus* and *Dermatophagoides farinae* are the important causative agents of allergic diseases in humans and animals. Using 165 dogs suffering from atopic dermatitis (AD), serum levels of immunoglobulin E (IgE) antibody against 25 kinds of allergens, including house dust mites, were determined. On the basis of IMMUNODOT assay, house dust mites were found to be the most frequent allergen against which 90 of the 165 allergic dogs (54.5%) suffer. Further analysis using immunoblot assay in the 90 dogs sensitized with house dust mites, the antigenic proteins of house dust mites recognized by IgE antibodies were found to have molecular masses of 15, 76, 90, 98, and 170 kD. Among them, the 15-kD protein that might be identical to Group 2 antigens (Der f2, Der p2) was prominently observed (52/90). This study indicates that about half of dogs with AD are sensitized to house dust mites, suggesting that Group 2 antigens of house dust mites may be a major allergen in canine AD.

Descriptors: allergens, antibody testing, antigens, atopic dermatitis, disease prevalence, house dust mites, IgE, immunoblotting, *Dermatophagoides farinae*, *Dermatophagoides pteronyssinus*, dogs.

Yin, S.A. and I. Nolte (2004). ***Praxisleitfaden Hund Und Katze. [Canine and Feline Practice Guide]***, Schlutersche Verlagsgesellschaft : Hannover, Germany, 747 p.

Abstract: A German translation (by E. Switzer) of the book originally entitled The Small Animal Veterinary Nerdbook (2nd edition, published 1998). Include German or European information on drugs and dosages, as well as the relevant legislation.

Descriptors: anesthesia, bacteriology, cardiology, clinical pathology, cytology,

dentistry, dermatology, emergency care, endocrinology, gastrointestinal, infectious disease, neurology, nutrition, oncology, ophthalmology, orthopedics, parasitology, pulmonary, reproduction, toxicology, cats, dogs, urinary.

Language of Text: German.

Yin, S.A. (1998). *The Small Animal Veterinary Nerdbook*, 2nd edition, CattleDog Pub.: Davis, CA, 456 p. ISBN: 0964151812.

NAL Call Number: SF748.Y56 1998

Descriptors: anesthesia, bacteriology, cardiology, clinical pathology, cytology, dentistry, dermatology, emergency care, endocrinology, gastrointestinal, infectious disease, neurology, nutrition, oncology, ophthalmology, orthopedics, parasitology, pulmonary, reproduction, toxicology, cats, dogs, urinary.

Zatloukal, J., A. Necas, and M. Dvorak (2000). **Measuring craniocaudal instability in stifle joints of dogs using stress radiographs.** *Acta Veterinaria Brno* 69(4): 311-317. ISSN: 0001-7213.

NAL Call Number: SF604.B7

Abstract: Craniocaudal stifle joint laxity in dogs affected by various stifle disorders was determined using mediolateral X-ray projections of the stifle joint in neutral and tibial compression stress position. In all, 129 stifle joints of 80 dogs were included in the study. Patients were classified into following groups characterised by: 1) total cranial cruciate ligament (CCL) rupture, 2) total CCL rupture and medial meniscus lesion, 3) partial CCL rupture, 4) partial CCL rupture and medial meniscus lesion, 5) clinically evident CCL rupture only, 6) normal stifle joints, 7) normal stifle joint on the contralateral joint to the one affected by the CCL rupture, 8) radiographically abnormal and clinically stable stifle contralateral to the joint affected by the CCL rupture, and 9) other stifle disorders. Index of laxity (IL) of the stifle joint giving the extent of cranial tibial displacement relative to the femur in the stress tibial compression projection expressed as percents of the femur width was computed. Stifle joints with IL values over 25 can be supposed to be affected by CCL rupture, whereas joints with the IL value less than 15 can be considered to have an intact cranial cruciate ligament. There were significantly higher IL values in stifle joints with clinically or by arthrotomy diagnosed CCL rupture as compared to the group of healthy joints (Wilcoxon's test; $p < 0.01$ and $p < 0.05$, respectively in these ones with partial CCL rupture and medial meniscus damage). Contrary to published data, we found considerably higher IL values in stifle joints with total CCL rupture as compared to those ones with partial rupture ($p < 0.01$). Significant differences in the index of laxity value were not found in stifles with other disorder than the CCL rupture as compared to the group of healthy joints. Measurement of the index of laxity is an undemanding and non-invasive technique supplementing the clinical examination and could serve as an early diagnostic method for the CCL injury.

Descriptors: radiology, veterinary medicine, skeletal system, craniocaudal instability, bone disease, joint disease, stress radiography, analytical method, measurement method.

Housing

Anderson, D. (2004). **Revision of Council of Europe Convention ETS 123 guidelines for the accommodation and care of animals used for experimental and other scientific purposes.** *ATLA, Alternatives to Laboratory Animals* 32(Suppl. 1A): 183-185. ISSN: 0261-1929.

NAL Call Number: Z7994.L3A5

Abstract: Within the 43 Member States of the Council of Europe, Appendix A of Convention ETS 123 provides guidance on the standards of accommodation and care to be provided for animals used for experimental and other scientific purposes. At a meeting of the Parties to the Convention in 1997, a resolution providing additional guidance on accommodation and care was adopted. At the same meeting, it was agreed that, as scientific knowledge and experience had progressed since adoption of ETS 123 in 1986, a Working Party should be convened to consider the revision of Appendix A. The Working Party first met in January 1999, and since then, there have been a number of Working Party meetings, and a number of meetings of Expert Groups, who are tasked with producing guidelines incorporating species-specific needs. The Expert Groups have drafted proposals for the accommodation and care of rodents, rabbits, dogs, cats, ferrets, farm animals, birds, amphibia, reptiles and fish. These proposals will complement the general principles of accommodation and care included in the general section of Appendix A. This comprehensive review has provided an opportunity to incorporate new ideas on housing and care based on scientific data and on best contemporary practises. It is expected that these revisions will be used throughout the scientific community to inform accommodation and care practises for animals used for scientific purposes.

Descriptors: animal housing, animal testing alternatives, animal welfare, guidelines, reviews.

Eisele, P.H. (2001). **A practical dog bed for environmental enrichment for geriatric beagles, with applications for puppies and other small dogs.** *Contemporary Topics in Laboratory Animal Science* 40(3): 36-38. ISSN: 1060-0558.

NAL Call Number: SF405.5.A23

Abstract: A group of 30 older beagle dogs was acquired for aging studies. The dogs were initially housed in kennel runs equipped with elevated benches, but it became apparent that some of the oldest animals had difficulties jumping down from them. To improve animal safety and comfort, practical dog beds were made out of the ends of clean high-density polyethylene barrels. Synthetic fleece bed liners were used for dogs that did not chew them or remove them from the beds. Nine of the beagles

regularly were observed to use the beds. We also have found that this easily fashioned dog bed is a useful kennel resting place option for puppies and other small dogs.

Descriptors: aging, animal behavior, animal models, Beagle, litter, puppies, age factors, housing, kennel design, comfort, fleece beds, resting place.

Hubrecht, R.C. and V. Reinhardt (2002). **Comfortable quarters for dogs in research institutions**. In: V. Reinhardt and A. Reinhardt (Editors), *Comfortable Quarters for Laboratory Animals*, 9th edition, Animal Welfare Institute: Washington, DC, p. 56-64.

Online: <http://www.awionline.org/pubs/cq02/Cq-dogs.html>

NAL Call Number: SF406.3 .C66 2002

Descriptors: laboratory housing, design, space allowance, socialization requirements, exercise, enrichment devices, handling, stress.

Lowery, T., S. Dinterman, K. Weigand, B. Brown, and L. Walker (2001). **A cart cage for transferring macaques, capuchins, and small dogs.** *Lab Animal* 30(1): 45-46. ISSN: 0093-7355.

NAL Call Number: QL55.A1L33

Descriptors: monkeys, transport of animals, cage design, wheels, *Macaca mulatta*, *Cebus apella*, dogs, cage size, animal welfare, safety at work, animal use refinement.

Mack, P.A., R.M. Bell, B.L. Tubo, J.A. Ashline, and K.L. Smiler (2003). **Validation study of social housing of canines in toxicology studies.** *Contemporary Topics in Laboratory Animal Science* 42(2): 29-30. ISSN: 1060-0558.

NAL Call Number: SF405.5.A23

Abstract: Optimal housing conditions for canines have evolved in light of changing research findings and animal welfare initiatives. Social housing of canines in toxicology studies was not considered standard housing in our facility. When the decision was made to explore social housing for toxicology studies in our facility, we noted a lack of published information. This study was performed to develop and validate social housing as an option for canines in toxicology studies. The potential impact to data gathered through toxicology studies in which the canines are socially housed is discussed.

Descriptors: animal care, behavior, philosophy and ethics, toxicology, animal welfare, research, research toxicology, social housing.

Ottesen, J.L., A. Weber, H. Gurtler, and L.F. Mikkelsen (2004). **New housing conditions: Improving the welfare of experimental animals.** *ATLA Alternatives to Laboratory Animals* 32(Suppl. 1B): 397-404. ISSN: 0261-1929.

NAL Call Number: Z7994.L3A5

Descriptors: animal care, mice, rats, guinea-pigs, rabbits, dogs, animal testing, animal welfare, refinement, drug development, housing, worker health.

Piorkowska, M., A. Zon, and P. Bielanski (2002). **Effect of cage density on raccoon dog welfare.** *Annals of Animal Science* 2(Suppl. 1): 203-205. ISSN: 1642-3402.

NAL Call Number: SF1 .A66

Descriptors: cage density, fur quality, growth, stocking density, raccoon dogs.

Piorkowska, M., A. Zon, P. Bielanski, and J. Zajac (2000). **Wplyw dodatkowego wyposazenia klatek na jakosc pozyskanych skor jenotow. [Effect of additional cage equipment on the quality of raccoon dog skins.]** *Annals of Animal Science Roczniki Naukowe Zootechniki* 27(3): 195-202. ISSN: 0137-1657.

Abstract: The aim of this study was to improve the conditions and requirements of the breeding environment by using additional equipment relieving the monotony of the cage and to determine if this additional equipment preferred by the animals will ensure normal growth and somatic development, while improving the living conditions and as a result the size and quality of skins. The experiment was carried out with young raccoon dogs kept in pairs, two animals in each cage 1.3 m² in area and 75 cm in height. The cages varied according to the additional equipment they had: group I (control) -- cages with no additional equipment; group II -- cages with platforms and ladders; group III -- cages with boxes. Organoleptic analysis showed that there were 7, 3.8 and 26.8% of skins having hairless areas due to biting and felting in groups I, II and III, respectively. Those raccoon dogs whose cages were equipped with platforms were characterized by the greatest size of rough and dressed skins, with the lowest weight of 1 dm² and greatest length. The skins of raccoon dogs from group III were the shortest and those of raccoon dogs from group I the heaviest. It was observed that additional equipment of the cages, such as boxes, can also increase the number of skins having no breeding value, as shown by a very high proportion of such skins (26.8%).

Descriptors: furbearing animals, breeding, animal welfare, housing, fur quality, raccoon dogs.

Language of Text: Polish, Summaries in German, English and Russian.

Prescott, M.J. (2004). **Refining dog husbandry and care. Eighth report of BVA/AVMA/FRAME/RSPCA/UFPAW Joint Working Group on Refinement.** *Laboratory Animals* 38(Suppl. 1): 1-94. ISSN: 0023-6772.

NAL Call Number: QL55.A1L3

Abstract: An estimated 140 000 dogs are used worldwide in research and testing every year. Although there is a growing trend of providing more complex environments for laboratory dogs, worldwide much dog husbandry and care fails to incorporate what is known about their natural behaviour and their behavioural and

welfare needs. With this in mind, the BVAAWF/FRAME/RSPCA/UFAW joint Working Group on Refinement set out to identify and document ways in which dog husbandry and care can be refined to make significant reductions in suffering and improvements in animal welfare. The Working Group's report contains recommendations on housing and on physical environment, food and feeding, environmental enrichment and exercise, health and hygiene, identification and record keeping, breeding, balancing supply and demand, grouping, transport, handling and restraint, procedures, long-term use, rehoming, staff training, and areas for future research for refining dog husbandry and care. Advice is also given on interpreting dog signals, preventing and managing aggression, and controlling noise in dog facilities. Particular emphasis is placed on providing an enriched environment for dogs which permits them to express a wide range of normal behaviour and to exercise a degree of choice, and on combining this with a socialization, habituation and training programme. Together these measures should significantly reduce and/or eliminate fear-related behavioural responses and stereotypic behaviours. They will also have a positive effect on the behavioural development of the dogs, helping to ensure that calm, confident, and well-adjusted individuals are issued to the end-use areas. This in turn will assist in the collection of reliable and accurate experimental data from dog studies and will avoid unnecessary wastage of life. The report represents a valuable resource for staff training. It should be read and thought about, and the recommendations acted upon, by all those involved with the management, care and use of dogs bred and used for research and testing. Where standards fall below those detailed here, a programme of improvement should be put in place. This should aim to achieve a proper balance between conspecific and human social interaction for dogs, and provide pens and other environments developed with an understanding of the natural behaviours of the dog, and empathetic personnel trained and competent to care for them. Employing a canine behaviour specialist can help to achieve these aims. It may be necessary for managers of facilities to rethink the way that dog husbandry and care has been practised in the past in order to allocate the time, staffing and funding required to implement the programme. Only through sincere commitment, adequate resources and sufficient will to change can significant reductions in suffering and improvements in animal welfare be guaranteed.

Descriptors: history, behavior, housing, husbandry, legislation, research, pen construction, pen design, stocking density, single housing, outdoor runs, lighting, temperature, humidity, noise.

Reinhardt, V. and A. Reinhardt (2001). **Legal space requirement stipulations for animals in the laboratory: are they adequate?** *Journal of Applied Animal Welfare Science* 4(2): 143-149. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Descriptors: animal experiments, Beagle, cage size, floor space, laboratory animals, space requirements.

Sales, G., R. Hubrecht, A. Peyvandi, S. Milligan, and B. Shield (1997). **Noise in dog kennelling: is barking a welfare problem for dogs?** *Applied Animal Behaviour Science* 52(3-4): 321-329. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Noise levels (sound pressure levels, SPLs) were monitored over 24 and 48 h in a number of different types of kennels including shelters, training establishments and research laboratories. Two measures of SPL were used, L_{peak} and L_{eq} , over both low (1 Hz-20 kHz) and high (12.5-70 kHz) frequency ranges and using a linear weighting. At most sites the noise levels followed a diurnal pattern; levels were generally low and relatively constant overnight, increased gradually in the early morning and then fluctuated during the working day. Levels decreased in the evening at different times depending on the local regimes. In one facility near railway lines the diurnal pattern was less obvious. During the day L_{peak} values regularly exceeded 100 dB and often reached 125 dB; L_{eq} values were between 65 and 100 dB. The high noise levels were caused mainly by barking, but husbandry procedures such as cleaning also contributed to them. The noise levels recorded here may have welfare implications. There is currently a lack of adequate guide lines for noise levels in dog kennels.

Descriptors: noise, kennels, housing, husbandry, animal welfare, dogs.

Spangenberg, E.M.F., L. Bjorklund, and K. Dahlborn (2006). **Outdoor housing of laboratory dogs: effects on activity, behaviour and physiology.** *Applied Animal Behaviour Science* 98(3/4): 260-276. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Laboratory dogs are mainly housed indoors and outdoor housing is often considered to be an insecure and uncontrollable alternative. This study aimed to assess the effects of outdoor housing of laboratory dogs on their general physiology, activity and activity-related behaviours. Eight male Beagles dogs were randomised into two groups and housed pair wise in indoor housing (IH, 11 m²), with or without access to an outdoor kennel (OH, 11 m²) during daytime. Activity (steps per hour), behaviour, and usage of outdoor facilities were recorded during 6 weeks in a cross-over design. In addition, the dogs were weighed once weekly and blood samples were taken three times a week to monitor physiological parameters for kidney, liver, pancreas and immune system functions. Four of the dogs were housed with access to outdoor kennel prior to the study and the other four had only been housed indoors. The effect of housing type and previous housing was analysed. OH resulted in a significantly higher activity level, a higher frequency of moving and a lower frequency of passive behaviour. Alanine amino transferase, white blood cell

count, granulocytes and neutrophils were significantly higher in IH, while cholesterol was lower, compared to OH, although all physiological parameters were kept within normal ranges. The dogs spent on average 162+or-11 out of 500 possible min/day outside and the average frequency of entering the outdoor kennel was 102+or-7 times per day. The duration of time spent outdoors was significantly longer during the second and third weeks of OH, compared to the first week. In conclusion, laboratory dogs can be housed with access to an outdoor kennel without altering their general physiology. Further, it clearly increased the voluntary activity and activity-related behaviours of the dogs and should therefore be beneficial for their welfare..

Descriptors: activity, alanine aminotransferase, behavior, animal experiments, physiology, Beagle, kidneys, laboratory animals, liver, neutrophils, pancreas.

Stephen, J.M. and R.A. Ledger (2004). **Temperament and stress in kennelled dogs.** *Animal Welfare* 13(Suppl.): S256. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Descriptors: animal care, behavior, philosophy and ethics, kennelling, applied and field techniques, battersea dogs' home, RSPCA, fear, rescue kennel, stress, temperament.

Notes: Meeting Information: Universities Federation for Animal Welfare (UFAW) Symposium on Science in the Service of Animal Welfare, Edinburgh, UK; April 2-4, 2003.

Wells, D. and P.G. Hepper (2000). **The influence of environmental change on the behaviour of sheltered dogs.** *Applied Animal Behaviour Science* 68(2): 151-162. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(00\)00100-3](http://dx.doi.org/10.1016/S0168-1591(00)00100-3)

NAL Call Number: QL750.A6

Descriptors: shelters, animal welfare, temperament, cages, consumer preferences, environment, enrichment, animal behavior, behavior change.

Wells, D.L. and P.G. Hepper (1998). **A note on the influence of visual conspecific contact on the behaviour of sheltered dogs.** *Applied Animal Behaviour Science* 60(1): 83-88. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(98\)00146-4](http://dx.doi.org/10.1016/S0168-1591(98)00146-4)

NAL Call Number: QL750.A6

Descriptors: kennel design, housing, single housing, rescue shelter, behavior, visual contact, animal welfare, animal shelters.

Wickens, S., R. Hubrecht, T. Buckwell, D. Gregory, D. Robb, M. Wilsson, and I. Rochlitz (2001). **Report of the 2000 UFAW/RSPCA Carnivore Welfare Group meeting.** *Animal Technology* 52(1): 43-47. ISSN: 0264-4754.

NAL Call Number: QL55.I5

Descriptors: social behavior, aggression, housing, animal welfare, cages, laboratory animals, metabolism cages, carnivores, cats, dogs.

Yamada, M. and M. Tokuriki (2000). **Spontaneous activities measured continuously by an accelerometer in Beagle dogs housed in a cage.** *Journal of Veterinary Medical Science* 62(4): 443-447. ISSN: 0021-5295.

NAL Call Number: SF604.J342

Abstract: Spontaneous physical activity for investigating behavioural drug toxicity was recorded continuously in 10 Beagle dogs housed in individual cages for 2 h using an accelerometer and a video camera. Gross differentiation of quantitative behavioural parameters was possible with the accelerometer alone when threshold and acceleration volume values were set at 0.10 G and _251. At these settings, the accelerometer revealed only movements of whole-body, whereas at threshold value of 0.02 G movements of individual body parts could be identified.

Descriptors: animal behavior, abnormal behavior, drug toxicity, instruments, dogs.

Husbandry

Anonymous (2000). **Taking care of your pregnant dog.** *Veterinary Medicine* 95(10): 801-802. ISSN: 8750-7943.

NAL Call Number: 41.8 M69

Descriptors: bitches, pregnancy, pet care, whelping.

Hoffman, M. and L.J. Ackerman (1998). **Dogs: The Ultimate Care Guide: Good Health, Loving Care, Maximum Longevity,** Rodale Press: Emmaus, PA, 450 p. ISBN: 0875965326 .

NAL Call Number: SF427.D57 1998

Descriptors: care, health, husbandry.

Hubrecht, R.C. and V. Reinhardt (2002). **Comfortable quarters for dogs in research institutions** . In: V. Reinhardt and A. Reinhardt (Editors), *Comfortable Quarters for Laboratory Animals*, 9th edition, Animal Welfare Institute: Washington, DC, p. 56-64.

Online: <http://www.awionline.org/pubs/cq02/Cq-dogs.html>

NAL Call Number: SF406.3 .C66 2002

Descriptors: laboratory housing, design, space allowance, socialization requirements, exercise, enrichment devices, handling, stress.

Prescott, M.J. (2004). **Refining dog husbandry and care. Eighth report of BVAWF/FRAME/RSPCA/UFAW Joint Working Group on Refinement.** *Laboratory Animals* 38(Suppl. 1): 1-94. ISSN: 0023-6772.

NAL Call Number: QL55.A1L3

Abstract: An estimated 140 000 dogs are used worldwide in research and testing every year. Although there is a growing trend of providing more complex environments for laboratory dogs, worldwide much dog husbandry and care fails to incorporate what is known about their natural behaviour and their behavioural and welfare needs. With this in mind, the BVAWF/FRAME/RSPCA/UFAW joint Working Group on Refinement set out to identify and document ways in which dog husbandry and care can be refined to make significant reductions in suffering and improvements in animal welfare. The Working Group's report contains recommendations on housing and on physical environment, food and feeding, environmental enrichment and exercise, health and hygiene, identification and record keeping, breeding, balancing supply and demand, grouping, transport, handling and restraint, procedures, long-term use, rehoming, staff training, and areas for future research for refining dog husbandry and care. Advice is also given on interpreting dog signals,

preventing and managing aggression, and controlling noise in dog facilities. Particular emphasis is placed on providing an enriched environment for dogs which permits them to express a wide range of normal behaviour and to exercise a degree of choice, and on combining this with a socialization, habituation and training programme. Together these measures should significantly reduce and/or eliminate fear-related behavioural responses and stereotypic behaviours. They will also have a positive effect on the behavioural development of the dogs, helping to ensure that calm, confident, and well-adjusted individuals are issued to the end-use areas. This in turn will assist in the collection of reliable and accurate experimental data from dog studies and will avoid unnecessary wastage of life. The report represents a valuable resource for staff training. It should be read and thought about, and the recommendations acted upon, by all those involved with the management, care and use of dogs bred and used for research and testing. Where standards fall below those detailed here, a programme of improvement should be put in place. This should aim to achieve a proper balance between conspecific and human social interaction for dogs, and provide pens and other environments developed with an understanding of the natural behaviours of the dog, and empathetic personnel trained and competent to care for them. Employing a canine behaviour specialist can help to achieve these aims. It may be necessary for managers of facilities to rethink the way that dog husbandry and care has been practised in the past in order to allocate the time, staffing and funding required to implement the programme. Only through sincere commitment, adequate resources and sufficient will to change can significant reductions in suffering and improvements in animal welfare be guaranteed.

Descriptors: history, behavior, housing, husbandry, legislation, research, pen construction, pen design, stocking density, single housing, outdoor runs, lighting, temperature, humidity, noise.

Rollin, B.E. (2005). **An ethicist's commentary on the dog breeder who provides bad husbandry.** *Canadian Veterinary Journal* 46(5): 395 . ISSN: 0008-5286.

NAL Call Number: 41.8 R3224

Descriptors: husbandry ethics, dogs, Ontario.

Sales, G., R. Hubrecht, A. Peyvandi, S. Milligan, and B. Shield (1997). **Noise in dog kennelling: is barking a welfare problem for dogs?** *Applied Animal Behaviour Science* 52(3-4): 321-329. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Noise levels (sound pressure levels, SPLs) were monitored over 24 and 48 h in a number of different types of kennels including shelters, training establishments and research laboratories. Two measures of SPL were used, L_{peak} and L_{eq}, over both low (1 Hz-20 kHz) and high (12.5-70 kHz) frequency ranges and using a linear weighting. At most sites the noise levels followed a diurnal pattern; levels

were generally low and relatively constant overnight, increased gradually in the early morning and then fluctuated during the working day. Levels decreased in the evening at different times depending on the local regimes. In one facility near railway lines the diurnal pattern was less obvious. During the day L_{peak} values regularly exceeded 100 dB and often reached 125 dB; Le_q values were between 65 and 100 dB. The high noise levels were caused mainly by barking, but husbandry procedures such as cleaning also contributed to them. The noise levels recorded here may have welfare implications. There is currently a lack of adequate guide lines for noise levels in dog kennels.

Descriptors: noise, kennels, housing, husbandry, animal welfare, dogs.

Stooker, M. (2006). **Illegale hondenhandel.** *Tijdschrift Voor Diergeneeskunde* 131(10): 374. ISSN: 0040-7453.

NAL Call Number: 41.8 T431

Descriptors: animal husbandry methods, animal husbandry standards, animal welfare, commerce standards, animal rights, cats, dogs, Europe, eastern, Netherlands.

Swallow J, Anderson D, Buckwell AC, Harris T, Hawkins P, Kirkwood J, Lomas M, Meacham S, Peters A, Prescott M, Owen S, Quest R, Sutcliffe R, and Thompson K (2005). **Guidance on the transport of laboratory animals.** *Laboratory Animals* 39(1): 1-39. ISSN: 0023-6772.

NAL Call Number: QL55.A1L3

Descriptors: animal care, laboratory animal science association, animal transport, working group, standards.

Trunsky, J. (2003). **Dog feces collection bag dispenser and receptacle.** *Official Gazette of the United States Patent and Trademark Office Patents* 1271(3) ISSN: 0098-1133.

Online: <http://www.uspto.gov/web/menu/patdata.html>

NAL Call Number: T223 .A21

Descriptors: patent, animal waste, sanitation, dog feces collection bag.

Von der Leyen, K. (2001). **Puppies: Selection and Character, Training and Games, Feeding and Care, Health,** Barron's : Hauppauge, NY , 159 p. ISBN: 0764116010.

NAL Call Number: SF427 .V5913 2001

Descriptors: puppies, selection, care, training, health, husbandry.

Wilden, I. (1997). **Peculiarities in the social behaviour of African wild dogs (*Lycan pictus*) and consequences for the management.** In: *Proceedings of the 2nd International Conference on Environmental Enrichment, August 21-25, 1995, Copenhagen*, Copenhagen Zoo: Frederiksberg, p. 260-267. ISBN: 8789431146.

Descriptors: *Lycaon pictus*, social behavior, housing, litter box lay out, implications for management in captivity, African wild dogs.

Physiology

Hua, X., C. Lu, and E. Zhao (2002). **Effect of stress on hormone, physiological and biochemical index in plasma of dogs.** *Journal of Shanghai Jiaotong University Agricultural Science* 20(4): 270-274. ISSN: 1671-9964.

Descriptors: angiotensin, blood chemistry, cold stress, corticotropin, hormonal control, dogs.

Language of Text: Chinese, Summary in English.

Kiil, F. and O.M. Sejersted (2003). **Analysis of energy metabolism and mechanism of loop diuretics in the thick ascending limb of henle's loop in dog kidneys.** *Acta Physiologica Scandinavica* 178(1): 73-82. ISSN: 0001-6772.

NAL Call Number: QP1.A2

Abstract: Aim: The thick ascending limb of Henle's loop (TALH) absorbs up to 40% of filtered NaCl in volume-expanded dogs. To examine if a fraction of this absorption is passive, NaHCO₃ absorption and associated NaCl absorption in proximal tubules were inhibited by acetazolamide, a carbonic anhydrase inhibitor. Results: Ouabain, a specific inhibitor of Na,K-ATPase activity, reduced the remaining NaCl absorption and renal oxygen consumption in a ratio $\Delta\text{Na}/\Delta\text{O}_2=18$, as expected for active transport. However, the responses to two loop diuretics were $\Delta\text{Na}/\Delta\text{O}_2=24$ for ethacrynic acid and $\Delta\text{Na}/\Delta\text{O}_2=30$ for bumetanide. Both loop diuretics induced potassium secretion. By superimposing ouabain potassium secretion was stopped and $\Delta\text{Na}/\Delta\text{O}_2=18$ restored. Replacement of half of the circulating NaCl with Na₂SO₄ gave stop-flow pattern similar to those obtained after ethacrynic acid. Conclusions: Low entry of some sodium ions through the apical membrane is permitted despite low chloride supply or blockade by loop diuretics of chloride entry by the Na-K-2Cl transporter. Continued Na-K-ATPase activity causes secretion of potassium ions through the apical ion channel, ethacrynic acid being more kaliuretic and less natriuretic than bumetanide. Greater paracellular recycling of sodium ions after bumetanide maintains ionic balance. In contrast, under normal conditions excess entry of chloride by the Na-K-2Cl-transporter leads to paracellular back-diffusion of chloride rather than paracellular absorption of sodium ions, consistent with $\Delta\text{Na}/\Delta\text{O}_2=18$ after ouabain. Thus all NaCl transport along TALH is active in vivo, whereas absorption of other cations, such as lithium, probably is passive.

Descriptors: metabolism, urinary system, energy metabolism.

Legrand, A. and A. Detroyer (1997). **Respiratory effect of the rib cage muscles in the dog.** *European Respiratory Journal* 10(25): 15S. ISSN: 0904-1850.

Descriptors: rib cage, muscle, respiration, meeting abstract.

Notes: Meeting Information: Annual Congress of the European Respiratory Society, Berlin, Germany; September 20-24, 1997.

Maldonado, E.N., J.R. Romero, B. Ochoa, and M.I. Avelano (2001). **Lipid and fatty acid composition of canine lipoproteins.** *Comparative Biochemistry and Physiology B, Biochemistry and Molecular Biology*. 128(4): 719-729. ISSN: 0305-0491.

Abstract: Lipid classes and their fatty acids were studied in the major lipoprotein fractions from canine plasma, in comparison with humans. Four male Beagle dogs were housed and fed under standard laboratory conditions, and blood samples from two healthy normolipidaemic male donors were studied for comparison. In dogs, high-density-lipoprotein (HDL), the main carrier of plasma phospholipid (PL), cholesterol ester (CE) and free cholesterol, was the most abundant lipoprotein, followed by low and very-low density lipoproteins (LDL and VLDL). Notably, LDL and VLDL contributed similarly to the total dog plasma triacylglycerol (TG). The PL composition was similar in all three lipoproteins, dominated by phosphatidylcholine (PC). Even though the content and composition of lipids within and among lipoproteins differed markedly between dog and man, the total amount of circulating lipid was similar. All canine lipoproteins were relatively richer than those from humans in long-chain (C20-C22) n-6 and n-3 polyunsaturated fatty acids (PUFA) but had comparable proportions of total saturated and monoenoic fatty acids, with 18:2n-6 being the main PUFA in both mammals. The fatty acid profile of canine and human lipoproteins differed because they had distinct proportions of their major lipids. There were more n-3 and n-6 long-chain PUFA in canine than in human plasma, because dogs had more HDL, their HDL had more PC and CE, and both these lipids were richer in such PUFA.

Descriptors: Beagle, blood chemistry, cholesterol, cholesteryl esters, fatty acids, high density lipoprotein, lipids, monoenoic fatty acids, phosphatidylcholines, phospholipids, polyenoic fatty acids, saturated fatty acids, dogs.

Manabe, T., Y. Okada, H. Sawai, H. Funahashi, M. Yamamoto, T. Hayakawa, and T.

Yoshimura (2003). **Effect of galanin on plasma glucose, insulin and pancreatic glucagon in dogs.** *Journal of International Medical Research* 31(2): 126-132. ISSN: 0300-0605.

Abstract: The effect of synthetic galanin on plasma glucose, insulin and pancreatic glucagon levels in dogs was studied. Infusion of galanin caused a rapid, reversible and dose-dependent reduction in basal insulin level. A maximal increase in blood glucose level accompanying the insulin decrease was observed when galanin was administered at a dose of 4 µg/kg per h. Pancreatic glucagon levels showed little change

compared with basal secretion. These results indicate that galanin is involved in the regulation of glucose through control of insulin secretion.

Descriptors: digestive system, ingestion and assimilation.

Mariano, P.A., G.M. Fagundes, I.P.d. Cunha, J.C. Xikota, R.M.C. Scaff, R.P.S. Heinzen, S.R.P.d. Rosario, I.P. da Cunha, and S.R.P. do Rosario (2002). **Comportamento anatomico da arteria basilar no cao (Canis familiaris - Linnaeus, 1758. [Behavior anatomic of basilar artery in dog (Canis familiaris - Linnaeus, 1758)].** *Veterinaria Noticias* 8(2): 13-22. ISSN: 0104-3463.

NAL Call Number: SF604.V484

Descriptors: animal anatomy, arteries, blood circulation.

Language of Text: Portuguese, Summary in English.

Mcguinness, O.P., V. Shau, E.M. Benson, M. Lewis, R.T. Snowden, J.E. Greene, D.W. Neal, and A.D. Cherrington (1997). **Role of epinephrine and norepinephrine in the metabolic response to stress hormone infusion in the conscious dog.** *American Journal of Physiology* 273(4 PART 1): E674-E681. ISSN: 0002-9513.

NAL Call Number: 447.8 Am3

Abstract: The role of epinephrine and norepinephrine in contributing to the alterations in hepatic glucose metabolism during a 70-h stress hormone infusion (SHI) was investigated in four groups of chronically catheterized (20-h-fasted) conscious dogs. SHI increased glucagon (apprx5-fold), epinephrine (apprx10-fold), norepinephrine (apprx10-fold), and cortisol (apprx6-fold) levels. Dogs received either all the hormones (SHI; n = 5), all the hormones except epinephrine (SHI - Epi; n = 6), or all the hormones except norepinephrine (SHI-NE; n = 6). In addition, six dogs received saline only (Sal). Glucose production (Ra) and gluconeogenesis were assessed after a 70-h hormone or saline infusion with the use of tracer ((3-3H)glucose and (U-14C) alanine) and arteriovenous difference techniques. SHI increased glucose levels (108 ± 2 vs. 189 ± 10 mg/dl) and Ra (2.6 ± 0.2 vs. 4.1 ± 0.3 mgcntdotkg-1cntdotmin-1) compared with Sal. The absence of an increase in epinephrine markedly attenuated these changes (glucose and Ra were 140 ± 6 mg/dl and 2.7 ± 0.4 mgcntdotkg-1cntdotmin-1, respectively). Only 25% of the blunted rise in Ra could be accounted for by an attenuation of the rise in net hepatic gluconeogenic precursor uptake (0.9 ± 0.1, 1.5 ± 0.1, and 1.1 ± 0.2 mgcntdotkg-1cntdotkg-1cntdotmin-1 for Sal, SHI, and SHI-Epi, respectively). The absence of an increase in norepinephrine did not blunt the rise in arterial glucose levels, Ra, or net hepatic gluconeogenic precursor uptake (they rose to 195 ± 21 mg/dl, 3.7 ± 0.5 mgcntdotkg-1cntdotmin-1, and 1.7 ± 0.2 mgcntdotkg-1cntdot min-1, respectively). In summary, during chronic SHI, the rise in epinephrine exerts potent stimulatory effects on glucose production principally by enhancing hepatic glycogenolysis, although the rise in circulating norepinephrine has minimal effects.

Descriptors: metabolism, physiology, gluconeogenesis, glyconeogenesis, stress hormone infusion, metabolic response.

Moore, M.C., S. Cardin, D.S. Edgerton, B. Farmer, D.W. Neal, M. Lautz, and A.D. Cherrington (2004). **Unlike mice, dogs exhibit effective glucoregulation during low-dose portal and peripheral glucose infusion.** *American Journal of Physiology* 286(2 Part 1): E226-E233. ISSN: 0002-9513.

NAL Call Number: 447.8 Am3

Abstract: Portal infusion of glucose in the mouse at a rate equivalent to basal endogenous glucose production causes hypoglycemia, whereas peripheral infusion at the same rate causes significant hyperglycemia. We used tracer and arteriovenous difference techniques in conscious 42-h-fasted dogs to determine their response to the same treatments. The studies consisted of three periods: equilibration (100 min), basal (40 min), and experimental (180 min), during which glucose was infused at $13.7 \text{ } \mu\text{mol} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$ into a peripheral vein (PE, n=5) or the hepatic portal (PO, n=5) vein. Arterial blood glucose increased approx 0.8 mmol/l in both groups. Arterial and hepatic sinusoidal insulin concentrations were not significantly different between groups. PE exhibited an increase in nonhepatic glucose uptake (non-HGU; $\Delta 8.6 \pm 1.2 \text{ } \mu\text{mol} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$) within 30 min, whereas PO showed a slight suppression ($\Delta -3.7 \pm 3.1 \text{ } \mu\text{mol} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$). PO shifted from net hepatic glucose output (NHGO) to uptake (NHGU; $2.5 \pm 2.8 \text{ } \mu\text{mol} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$) within 30 min, but PE still exhibited NHGO ($6.0 \pm 1.9 \text{ } \mu\text{mol} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$) at that time and did not initiate NHGU until after 90 min. Glucose rates of appearance and disappearance did not differ between groups. The response to the two infusion routes was markedly different. Peripheral infusion caused a rapid enhancement of non-HGU, whereas portal delivery quickly activated NHGU. As a result, both groups maintained near-euglycemia. The dog glucoregulates more rigorously than the mouse in response to both portal and peripheral glucose delivery.

Descriptors: metabolism, hyperglycemia, metabolic disease, euglycemia, glucose, hypoglycemia, mouse, dog.

Muzzi, R.A.L., R.B.d. Araujo, L.A.L. Muzzi, and J.L.B. Pena (2000). **Ecocardiografia modo m em caes normais da raca Pastor Alemao (origem americana) do canil da Policia Militar do Estado de Minas Gerais, Brasil. [M-mode echocardiography in normal German Shepherd dogs (American origin) from Minas Gerais State Police kennel, Brazil.]** *Ciencia Rural* 30(5): 819-824. ISSN: 0103-8478.

NAL Call Number: S192.R4

Abstract: The normal M-mode echocardiographic parameters were determined in German Shepherd dogs from Minas Gerais State Police kennel. 60 healthy dogs were submitted for echocardiographic examination. The right ventricular internal

dimension at end-diastole, the left ventricular internal dimension at end-diastole and end-systole, the left ventricular mass, the aortic root dimension, left atrial systolic dimension, end-diastolic interventricular septal thickness and end-diastolic and end-systolic left ventricular posterior wall thickness had significant correlation with body weight. The ratio of septal to left ventricular posterior wall thickness at end-distole, the left atrial to aortic root ratio, the thickening fraction of the interventricular septum, the thickening fraction of the left ventricular posterior wall, and left ventricular shortening fraction showed no linear correlations with body weight, sex or age.

Descriptors: electrocardiograms, guard dogs, normal values, dogs.

Language of Text: Portuguese, Summary in English.

Nagaoka, D., A. Tsukise, W. Meyer, and Y. Hirabayashi (2003). **Ultracytochemical demonstration of glycoproteins in the canine knee synovium.** *Annals of Anatomy* 185(6): 555-564. ISSN: 0940-9602.

Abstract: By various ultracytochemical methods, glycoconjugates of the synovio-cytes, the intercellular matrix and the wall of the small capillaries were studied in the synovial intimal tissues of the canine knee joint. Glycoconjugates with vicinal diol groups could be visualized in certain elements of the Golgi complex, lysosomes, vacuoles, the majority of intracellular cytomembranes, the surface coat of the plasma membrane and glycogen particles in type A cells. In type B cells, less-developed Golgi complexes, and fewer lysosomes and vacuoles were present in the cytoplasm than in that of type A cells. In contrast, a large number of cytoplasmic glycogen particles and abundant vicinal diol-containing groups in the surface coat of the plasma membrane became especially obvious in the B cells. Abundant neutral and acidic glycoproteins were observed in fibrous components in the intercellular matrix. In the small capillaries, strongly positive staining intensities for neutral and acidic glycoconjugates were observed in the basement membrane and perivascular connective tissue, as well as in the surface coat of the luminal plasma membrane of the endothelial cells, although to a somewhat weaker degree. Sialic acid, particularly, was notable in the surface coat of the latter cells. In addition, glycoproteins in the type A cells were shown by lectin ultracytochemistry to contain a variety of saccharide residues such as alpha-D-mannose, alpha-D-glucose, alpha-L-fucose, N-acetyl-beta-D-glucosamine, and N-acetyl-neuraminic acid, which were also found in the plasma membrane of the B cells. The properties of the glycoconjugates found are discussed in relation to the basic functions assigned to the synovial membrane of the canine knee joint.

Descriptors: skeletal system, cytochemistry, histology and cytology techniques, laboratory techniques, ultracytochemical demonstration.

Nakayama, H., C.A. Smith, J.R. Rodman, J.B. Skatrud, and J.A. Dempsey (2002). **Effect of ventilatory drive on carbon dioxide sensitivity below eupnea during sleep.** *American Journal of Respiratory and Critical Care Medicine* 165(9): 1251-1260. ISSN:

1073-449X.

NAL Call Number: RC705 .A4

Abstract: We determined the effects of changing ventilatory stimuli on the hypocapnia-induced apneic and hypopneic thresholds in sleeping dogs. End-tidal carbon dioxide pressure (PET(CO₂)) was gradually reduced during non-rapid eye movement sleep by increasing tidal volume with pressure support mechanical ventilation, causing a reduction in diaphragm electromyogram amplitude until apnea/periodic breathing occurred. We used the reduction in PET(CO₂) below spontaneous breathing required to produce apnea (DeltaPET(CO₂)) as an index of the susceptibility to apnea. DeltaPET(CO₂) was -5 mm Hg in control animals and changed in proportion to background ventilatory drive, increasing with metabolic acidosis (-6.7 mm Hg) and nonhypoxic peripheral chemoreceptor stimulation (almitrine; -5.9 mm Hg) and decreasing with metabolic alkalosis (-3.7 mm Hg). Hypoxia was the exception; DeltaPET(CO₂) narrowed (-4.1 mm Hg) despite the accompanying hyperventilation. Thus, hyperventilation and hypocapnia, per se, widened the DeltaPET(CO₂) thereby protecting against apnea and hypopnea, whereas reduced ventilatory drive and hypoventilation narrowed the DeltaPET(CO₂) and increased the susceptibility to apnea. Hypoxia sensitized the ventilatory responsiveness to CO₂ below eupnea and narrowed the DeltaPET(CO₂); this effect of hypoxia was not attributable to an imbalance between peripheral and central chemoreceptor stimulation, per se. We conclude that the DeltaPET(CO₂) and the ventilatory sensitivity to CO₂ between eupnea and the apneic threshold are changeable in the face of variations in the magnitude, direction, and/or type of ventilatory stimulus, thereby altering the susceptibility for apnea, hypopnea, and periodic breathing in sleep.

Descriptors: animal model, apnea, hypopnea, end-tidal carbon dioxide pressure, hypoventilation.

Nielsen, K.K., K.K. Buddington, K. Raun, T.K. Hansen, and R.K. Buddington (2003).

Absorption and systemic availability of two synthetic growth hormone secretagogues and transport of glucose by the proximal small intestine of anestrus dogs after administering estradiol. *Journal of Comparative Physiology B Biochemical Systemic and Environmental Physiology* 173(1): 61-67. ISSN: 0174-1578.

NAL Call Number: 444.8 Z3

Abstract: Pharmacokinetics for one growth hormone secretagogue (NNC 26-0722), but not for another (NN703), differ between dogs in estrus or anestrus. We examined if the differences could be mimicked by administering estradiol during anestrus and if there was a relationship with rates of small intestine absorption. Pharmacokinetics for oral doses of NN703 (1.0-1.6 mg kg⁻¹) did not differ among dogs in estrus, anestrus, or anestrus and given estradiol for 1 week (days 1, 3, and 6; 40 mug kg⁻¹), whereas plasma concentrations of NNC 26-0722 increased from undetectable in untreated, anestrus dogs to several hundred nanograms per milliliter in dogs given

estradiol, with maximal concentrations measured 5 min after oral dosage. Estradiol treatment increased small intestinal absorption of NNC 26-0722 by 100% ($P<0.05$), but did not increase absorption of NN703, and caused a 64% increase in carrier-mediated glucose transport at 50 mmol l⁻¹ ($P<0.05$) due to increased densities of transporters. These findings indicate estrus and estradiol enhance absorptive functions of the dog proximal small intestine and can affect pharmacokinetics for some orally administered drugs.

Descriptors: digestive system, ingestion and assimilation, endocrine system, pharmacology, estrus .

Nishizawa, M., M.C. Moore, M. Shiota, S.M. Gustavson, W.L. Snead, D.W. Neal, and A.D. Cherrington (2003). **Effect of intraportal glucagon-like peptide-1 on glucose metabolism in conscious dogs.** *American Journal of Physiology* 284(5 Part 1): E1027-E1036. ISSN: 0002-9513.

NAL Call Number: 447.8 Am3

Abstract: Arteriovenous difference and tracer ((3-3H)glucose) techniques were used in 42-h-fasted conscious dogs to identify any insulin-like effects of intraportally administered glucagon-like peptide 1-(7-36)amide (GLP-1). Each study consisted of an equilibration, a basal, and three 90-min test periods (P1, P2, and P3) during which somatostatin, intraportal insulin (3-fold basal) and glucagon (basal), and peripheral glucose were infused. Saline was infused intraportally in P1. During P2 and P3, GLP-1 was infused intraportally at 0.9 and 5.1 pmolcndotkg-1cndotmin-1 in eight dogs, at 10 and 20 pmolcndotkg-1cndotmin-1 in seven dogs, and at 0 pmolcndotkg-1cndotmin-1 in eight dogs (control group). Net hepatic glucose uptake was significantly enhanced during GLP-1 infusion at 20 pmolcndotkg-1cndotmin-1 (21.8 vs. 13.4 mumolcndotkg-1cndotmin-1 (control), $P<0.05$). Glucose utilization was significantly increased during infusion at 10 and 20 pmolcndotkg-1cndotmin-1 (87.3+-8.3 and 105.3+-12.8, respectively, vs. 62.2+-5.3 and 74.7+-7.4 mumolcndotkg-1cndotmin-1 (control), $P<0.05$). The glucose infusion rate required to maintain hyperglycemia was increased ($P<0.05$) during infusion of GLP-1 at 5.1, 10, and 20 pmolcndotkg-1cndotmin-1 (22, 36, and 32%, respectively, greater than control). Nonhepatic glucose uptake increased significantly during delivery of GLP-1 at 5.1 and 10 pmolcndotkg-1cndotmin-1 (25 and 46% greater than control) and tended ($P=0.1$) to increase during GLP-1 infusion at 20 pmolcndotkg-1cndotmin-1 (24% greater than control). Intraportal infusion of GLP-1 at high physiological and pharmacological rates increased glucose disposal primarily in nonhepatic tissues.

Descriptors: metabolism, pharmacology, hyperglycemia, metabolic disease.

Olsson, K., A. Bergstrom, H. Kindahl, and A.S. Lagerstedt (2003). **Increased plasma concentrations of vasopressin, oxytocin, cortisol and the prostaglandin f2alpha metabolite during labour in the dog.** *Acta Physiologica Scandinavica* 179(3):

281-287. ISSN: 0001-6772.

NAL Call Number: QP1.A2

Abstract: Aim: This study investigated if the plasma vasopressin concentration increases during labour in the dog and whether the change in vasopressin correlates with that of oxytocin, 15-ketodihydro-PGF $_{2\alpha}$ and cortisol. Methods: Five beagle dogs each delivered three to seven puppies. Blood samples were taken from a catheter inserted into the cephalic vein during labour and by venepuncture during the other periods. Results: Vasopressin concentration increased from 2 \pm 0 pmol L $^{-1}$ (anoestrus) to 26 \pm 11 pmol L $^{-1}$ at the birth of the first puppy, remained high at the birth of the second puppy and then decreased. Oxytocin increased from 63 \pm 5 pmol L $^{-1}$ (anoestrus) to 166 \pm 19 pmol L $^{-1}$ at the birth of the first puppy and remained elevated throughout labour. The PGF $_{2\alpha}$ metabolite concentration increased from 0.2 \pm 0.0 nmol L $^{-1}$ (anoestrus) to 66 \pm 17 nmol L $^{-1}$ at the birth of the first puppy and remained elevated 1 h after the completion of parturition. The cortisol concentration increased from 49 \pm 9 nmol L $^{-1}$ (anoestrus) to 242 \pm 35 nmol L $^{-1}$ at the birth of the first puppy, remained high during the birth of the second puppy and then declined. Conclusions: The plasma level of vasopressin was strongly correlated with that of cortisol but less with that of the PGF $_{2\alpha}$ metabolite, and not significantly with the concentration of oxytocin. This indicates that the four hormones play different roles during labour in the dog.

Descriptors: endocrine system, metabolism, reproductive system, reproduction, labor .

Picher, M., A. Decrouy, S. Proteau, and E. Rousseau (1997). **Conducting and voltage-dependent behaviors of the native and purified sr ca-2+-release channels from the canine diaphragm.** *Biochimica Et Biophysica Acta* 1328(2): 243-260. ISSN: 0006-3002.

NAL Call Number: 381 B522

Abstract: The ryanodine-sensitive Ca-2+-release channel of the canine diaphragm sarcoplasmic reticulum (SR) was characterized using biochemical assays and the planar lipid bilayer technique. Diaphragm SR membranes have a (3H)ryanodine-binding capacity (B-max) of 1.2 pmol/mg protein and a binding affinity (K-D) of 6.3 nM. The conductance of the native channel was 330 pS in 50 mM/250 mM trans/cis CsCH-3SO-3 and was reduced to 71 pS by 10 mM Ca-2+ trans. The Ca-2+-release channel was purified as a 400 kDa protein on SDS-PAGE and displayed a conductance of 715 pS in 200 mM KCl. The native and purified Ca-2+ channels were activated by micromolar Ca-2+ and ATP and inhibited by Mg-2+, ryanodine and ruthenium red. Although diaphragm muscle contraction was shown to depend on extracellular Ca-2+ like cardiac muscles, we provide evidence that the diaphragm SR Ca-2+-release channel may be classified as a skeletal ryanodine receptor isoform. First, the IC-50 for (3H)ryanodine binding was in the same range as estimated for

skeletal SR, with 20 nM. Second, the channel was maximally activated by 10-30 μ -M cytoplasmic Ca-2+ and inhibited at higher concentrations. Third, ryanodine, binding to the diaphragm SR was less sensitive to Ca-2+ than cardiac SR, with EC-50 values of 50 and 1 μ -M, respectively. Finally, Ca-2+-release activity and (3H)ryanodine binding capacity of the diaphragm and skeletal SR were similarly more sensitive to Mg-2+ than cardiac SR. Together, these results suggest a predominantly skeletal-type of excitation-contraction coupling in the diaphragm.

Descriptors: membranes, cell biology, muscular system, calcium (ii) channel, diaphragm, membranes, muscular system, ryanodine receptor, skeletal muscle.

Rawlings, C.A., J.R. Coates, A. Chernosky, J.A. Barsanti, and J.E. Oliver (1999). **Stress leak point pressures and urethral pressure profile tests in clinically normal female dogs.** *American Journal of Veterinary Research* 60(6): 676-678. ISSN: 0002-9645 . **NAL Call Number:** 41.8 Am3A

Abstract: 22 female dogs weighing from 21 to 29 kg were used to develop a stress leak point pressure (LPP) test, determine LPP for continent female dogs, and determine urethral pressure profile (UPP) values for non-anaesthetized, continent female dogs. A standard UPP test and a modification of the LPP test used in women were performed on all dogs. On 3 occasions, dogs underwent UPP testing while awake. They were then anaesthetized with propofol, and LPP was measured at bladder volumes of 75, 100, and 150 ml. For LPP tests, abdominal pressure was applied by inflating a human blood pressure cuff placed around the dog's abdomen. LPPs were recorded through a urethral catheter (bladder LPP) and a rectal balloon catheter (abdominal LPP). Mean (\pm s.d.) and median maximum urethral closure pressure was 110.1 \pm 20.2 and 109.0 cm water, respectively. Mean bladder LPP for the 75, 100, and 150 ml bladder volumes was 172.4 cm water. Significant differences among LPP for the 3 bladder volumes were not detected. It is concluded that stress LPP can be recorded in female dogs.

Descriptors: urethra, bladder, blood pressure, propofol, rectum, pressure, normal values, dogs.

Roberts, T.J. (2001). **Muscle force and stress during running in dogs and wild turkeys.** *Bulletin of the Museum of Comparative Zoology* 156(1): 283-295. ISSN: 0027-4100. **NAL Call Number:** 500 H26B

Abstract: The function of the avian hind limb during running has received considerable attention, particularly as a potential analog for locomotor function in extinct bipeds. Comparisons of limb kinematics in avian runners and mammalian quadrupeds have revealed consistent differences in the pattern of joint excursions, presumably related to the constraints of bipedal support in birds. The present study asks whether these kinematic differences are paralleled by differences in muscle forces and stresses developed in hind limb locomotor muscles in birds and quadrupedal

mammals. High-speed video and force-plate analyses along with anatomical measurements were used to estimate muscle forces and stresses in the locomotor muscles of small dogs and wild turkeys during running. Turkeys and dogs developed remarkably similar patterns of force in hind limb muscles, despite large differences in the magnitude of ground reaction force moments. It was expected that differences in absolute muscle force in hind limb muscles would be matched by differences in cross-sectional area of muscle available to produce force, to maintain similar muscle stress. Instead, muscle stresses varied widely between homologous joints in dogs and turkeys, and between joints within species. The distribution of muscle stress between joints may reflect differences in the design of the avian and mammalian limb for high-power locomotor activities.

Descriptors: muscular system, force plate analysis, analytical method, high speed video, recording method, bipedal support, ground reaction force moments, kinematics, locomotor function, running.

Sato, S., Y. Yonetani, M. Fujimoto, T. Kita, K. Kubo, and T. Nakashima (1998). **Effects of an endothelin et a-receptor antagonist, s-0139, on cerebral vasospasm and behavioral changes in dogs intracisternally administered endothelin-1.** *Life Sciences* 62(13): PL191-PL197. ISSN: 0024-3205.

Abstract: The effects of an endothelin ETA-receptor selective antagonist, S-0139, were examined using dogs given endothelin-1 (ET-1) into the subarachnoid space. ET-1 at 40 pmol apparently constricted the basilar artery in anesthetized dogs and caused various grades of ataxia, facial clonus, nystagmus and other features in conscious dogs, partially mimicking those which have been reported for conscious rats. S-0139 could completely inhibit both the vasoconstriction and behavioral changes. It could also alleviate the behavioral changes caused by ET-1 in conscious dogs when given after the severe ataxia. We concluded that ET-1 in the subarachnoid space produces behavioral changes via endothelin ETA-receptor mediation similar to its cerebral vasoconstricting action, at least, in dogs.

Descriptors: cardiovascular system, transport and circulation, nervous system, neural coordination, ataxia, behavioral changes, cerebral vasoconstriction, facial clonus, nystagmus, vasoconstriction.

Snow, H.M., F. Markos, D. O'regan, and K. Pollock (2001). **Characteristics of arterial wall shear stress which cause endothelium-dependent vasodilatation in the anaesthetized dog.** *Journal of Physiology* 531(3): 843-848. ISSN: 0022-3751.

NAL Call Number: 447.8 J82

Descriptors: atheroma, mean blood flow, iliac artery, anesthetized dog, wall shear stress, stroke volume.

Stohrer, M., B. Hammer, R. Hammer, B. Brincker, and M. Stangassinger (2002). **Oxidativer Stress infolge extremer physischer Belastung. Teil 1: Genese, klinische Relevanz sowie Untersuchungen an Vitamin-E-supplementierten Schlittenhunden.** [Oxidative stress following extreme physical stress. Part 1: Genesis, clinical relevance and studies on vitamin E-supplemented sled dogs.]. *Tierärztliche Praxis* 30(4): 266-270. ISSN: 1434-1239.

NAL Call Number: SF603.V433

Abstract: An experimental study was performed in order to investigate oxidative stress in sled dogs after short races, which can be ameliorated by supplementation of the antioxidant vitamin E. Potentially occurring organ damages should be recorded in order to assess the clinical relevance. Therefore in blood samples, drawn before and after the race, the antioxidative status (TEAC, vitamin C, vitamin E), a radical marker (HNE-modified proteins) and resulting organ damages (organ-specific enzymes) were measured. The consumption of antioxidants (decrease of TEAC, vitamin C and E) indicates a significant oxygen radical production of the dogs during the race, confirmed by an increase of the radical marker HNE-mod. proteins. The rise of CK- and AST activity proves the damage of skeletal muscles. The less pronounced rise of CK- and AST activity in the vitamin E-supplemented dogs supports the hypothesis, that during extreme physical stress a significant amount of oxygen radicals is liberated and especially damages in skeletal muscles can be ameliorated by the antioxidant vitamin E.

Descriptors: oxidative stress, working dogs, racing dogs, antioxidants, ascorbic acid, creatine kinase, damage, enzyme activity, glutamate dehydrogenase, hematocrit, lactic acid, organs, oxidation, proteins, skeletal muscle, stress, vitamin E.

Language of Text: German, Summary in English.

Tonkovic Capin, V., A.G. Stucke, E.A. Stuth, M. Tonkovic Capin, F.A. Hopp, D.R. McCrinion, and E.J. Zuperku (2003). **Differential processing of excitation by gabaergic gain modulation in canine caudal ventral respiratory group neurons.** *Journal of Neurophysiology* 89(2): 862-870. ISSN: 0022-3077.

Abstract: The discharge frequency (Fn) patterns of medullary respiratory premotor neurons are subject to potent tonic GABAergic gain modulation. Studies in other neuron types suggest that the synaptic input for tonic inhibition is located on the soma where it can affect total neuronal output. However, our preliminary data suggested that excitatory responses elicited by highly local application of glutamate receptor agonists are not gain modulated. In addition, modulation of the amplitude of spike after-hyperpolarizations can gain modulate neuronal output, and this mechanism is located near the spike initiation zone and/or soma. The purpose of this study was to determine if these two gain-modulating mechanisms have different functional locations on the somatodendritic membrane of bulbospinal inspiratory and expiratory neurons. Four-barrel micropipettes were used for extracellular single-neuron

recording and pressure ejection of drugs in decerebrate, paralyzed, ventilated dogs. The net increases in Fn due to repeated short-duration picoejections of the glutamate receptor agonist, alpha-amino-3-hydroxy-5-methylisoxazole-4-propionic acid (AMPA), was quantified before and during locally induced antagonism of GABA_A receptors by bicuculline or small-conductance, calcium-activated potassium channels by apamin. The AMPA-induced net increases in Fn were not significantly altered by BIC, although it produced large increases in the respiratory-related activity. However, the AMPA-induced net responses were amplified in accordance with the gain increase of the respiratory-related activity by apamin. These findings suggest that GABAergic gain modulation may be functionally isolated from the soma/spike initiation zone, e.g., located on a dendritic shaft. This could allow other behavioral signals requiring strong neuronal activation (e.g., coughing, sneezing, vomiting) to utilize the same neuron without being attenuated by the GABAergic modulation.

Descriptors: action potentials, dendrites, GABA antagonists, nervous system, neural coordination, respiratory system, respiration.

Trinh, L., R. Hubmayr, and A.M. Boriek (2004). **Increased muscle shortening and maintenance of curvature of the midcostal muscle of the diaphragm during large tidal breathing in supine dogs.** *FASEB Journal* 18(4-5): Abstract 704.23. ISSN: 0892-6638.

Online: <http://www.fasebj.org/>

NAL Call Number: QH301.F3

Descriptors: diaphragm curvature, inspiratory capacity, large tidal breathing, muscle shortening, supine position, total lung capacity, supine dogs.

Notes: Meeting Information: FASEB Meeting on Experimental Biology: Translating the Genome, Washington, District of Columbia, USA; April 17-21, 2004.

Uzunova, K., R. Dimitrov, D. Vladova, and P. Todorova (2004). **Some anatomical features of the dog locomotory system and the anomalies related to them.** *Zhivotnov"Dni Nauki* 41(2): 71-74 . ISSN: 0514-7441.

Descriptors: animal care, neural coordination, anatomical features.

Language of Text: Bulgarian.

Ward, S.M., S.A. Baker, A. De Faoite, and K.M. Sanders (2003). **Propagation of slow waves requires ip3 receptors and mitochondrial ca²⁺ uptake in canine colonic muscles.** *Journal of Physiology* 549(1): 207-218 . ISSN: 0022-3751.

NAL Call Number: 447.8 J82

Abstract: In the gastrointestinal (GI) tract electrical slow waves yield oscillations in membrane potential that periodically increase the open probability of voltage-dependent Ca²⁺ channels and facilitate phasic contractions. Slow waves are generated by the interstitial cells of Cajal (ICC), and these events actively propagate through ICC networks within the walls of GI organs. The mechanism that entrains spontaneously

active pacemaker sites throughout ICC networks to produce regenerative propagation of slow waves is unresolved. Agents that block inositol 1,4,5-trisphosphate (IP₃) receptors and mitochondrial Ca²⁺ uptake were tested on the generation of slow waves in the canine colon. A partitioned chamber apparatus was used to test the effects of blocking slow-wave generation on propagation. We found that active propagation occurred along strips of colonic muscle, but when the pacemaker mechanism was blocked in a portion of the tissue, slow waves decayed exponentially from the point where the pacemaker mechanism was inhibited. An IP₃ receptor inhibitor, mitochondrial inhibitors, low external Ca²⁺, and divalent cations (Mn²⁺ and Ni²⁺) caused exponential decay of the slow waves in regions of muscle exposed to these agents. These data demonstrate that the mechanism that initiates slow waves is reactivated from cell-to-cell during the propagation of slow waves. Voltage-dependent conductances present in smooth muscle cells are incapable of slow-wave regeneration. The data predict that partial loss of or disruptions to ICC networks observed in human motility disorders could lead to incomplete penetration of slow waves through GI organs and, thus, to defects in myogenic regulation.

Descriptors: digestive system, ingestion and assimilation, metabolism, muscular system, movement and support .

Wolschrijn, C.F. and W.A. Weijs (2004). **Development of the trabecular structure within the ulnar medial coronoid process of young dogs.** *Anatomical Record* 278A(2): 514-519. ISSN: 0003-276X.

NAL Call Number: QL801 .A53

Descriptors: skeletal system, microcomputed tomography, diagnostic techniques, imaging and microscopy techniques, laboratory techniques, anisotropic structure, bone volume fraction, compression forces, high bone volume fraction, histomorphometric parameters, humeroulnar articular surface, mature like structure, mean trabecular separation, proximodistal axis, steady locomotion, well defined trabecular alignment.

Xu, X., L. Qian, and J.D.Z. Chen (2004). **Anti-dysrhythmic effects of long-pulse gastric electrical stimulation in dogs.** *Digestion* 69(2): 63-70. ISSN: 0012-2823.

NAL Call Number: QP141.A1D5

Descriptors: digestive system, ingestion and assimilation, gastric dysrhythmia, digestive system disease, long pulse gastric electrical stimulation, anti dysrhythmic stimulation effects, gastric motility, gastric myoelectrical activity, gastric pacing, gastric slow wave coupling.

Yan, C.J., C.H. Lin, Y.H. Lien, L.H. Lu, and H.P. Huang (2004). **Study of blood pressure in the geriatric canine population in taiwan.** *Taiwan Veterinary Journal* 30(3): 222-229. ISSN: 1682-6485.

NAL Call Number: SF604 .C54

Abstract: This survey aimed to establish blood pressure (BP) references of clinically healthy geriatric dogs using ultrasonic Doppler flow detector, and to investigate the effects of age, breed, sex, body weight, and body condition on blood pressures. Two hundreds and seven clinically healthy dogs were studied. One hundred and thirty-six healthy geriatric dogs and seventy-one healthy adult dogs were measured. The mean BP of geriatric dogs was 157.9 +/- 24.4 mmHg. The mean BP of healthy adult dogs was 150.8 +/- 22.3 mmHg. Systolic BP measurements were significantly higher in the geriatrics compared to the adult dogs (P = 0.04). Systolic BP measurements higher than 206.7 mmHg were defined as hypertension, and those less than 109.1 mmHg were defined as hypotension. Blood pressure measurements were found to be waved with age. Shih-Tzu presented higher BP than other breeds in both geriatric and adult dogs, however it was not statistically significant. Sex, body weight, and body condition did not affect BP distributions.

Descriptors: aging, animal care, blood and lymphatics, transport and circulation, hypertension, vascular disease, diagnosis, doppler myocardial imaging, microscopy techniques, laboratory techniques.

Language of Text: Chinese.

Yan, X., D.J. Bellotto, D.J. Foster, R.L.J. Johnson, H.K. Hagler, A.S. Estrera, and C.C.W. Hsia (2004). **Retinoic acid induces nonuniform alveolar septal growth after right pneumonectomy.** *Journal of Applied Physiology* 96(3): 1080-1089. ISSN: 8750-7587. **NAL Call Number:** 447.8 J825

Abstract: To determine whether all-trans retinoic acid (RA) enhances compensatory lung growth in fully mature animals, adult male dogs (n=4) received 2 mgcndotkg-1cndotday-1 po RA 4 days/wk beginning the day after right pneumonectomy (R-PNX, 55-58% resection). Litter-matched male R-PNX controls (n=4) received placebo. After 4 mo, the remaining lung was fixed by tracheal instillation of fixatives at a constant airway pressure for detailed morphometric analysis. After RA treatment compared with placebo, lung volume was slightly but not significantly lower. Volume density of septum to lung was 37% higher because of a 50 and 25% higher volume density of capillary and septal tissue, respectively. Mean septal thickness was 27% higher. Absolute volumes of endothelial cells and capillary blood were 31-37% higher, whereas epithelial and interstitial volumes were not different between groups. Absolute alveolar-capillary surface areas did not differ between groups, and alveolar septal surface-to-volume ratio was 20% lower in RA-treated animals. RA treatment exaggerated interlobar differences in morphometric indexes and caused alveolar capillary morphology to revert to a more immature state. Thus RA treatment during early post-R-PNX adaptation preferentially enhanced alveolar capillary and endothelial cell volumes consistent with formation of new capillaries, but the associated septal distortion precluded a corresponding increase in gas-exchange surface or morphometric estimates of lung diffusing capacity.

Descriptors: pharmacology, respiratory system, respiration, right pneumonectomy, experimental surgical techniques, laboratory techniques, airway pressure, lung diffusing capacity, lung volume, mean septal thickness, nonuniform alveolar septal growth, volume density.

Yan, X., J.J. Polo Carbayo, E.R. Weibel, and C.C.W. Hsia (2003). **Variation of lung volume after fixation when measured by immersion or cavalieri method.** *American Journal of Physiology* 284(1 Part 1): L242-L245. ISSN: 0002-9513.

NAL Call Number: 447.8 Am3

Abstract: Organ volume is a critical parameter in morphometric analysis. The special problems of the lung as a nonsolid organ are overcome by tracheal instillation of fixatives at a constant airway pressure (Paw). Lung volume can change significantly after fixation as Paw change. To determine the variation of lung volume after fixation, we measured the volume of intact fixed lungs by serial immersion in saline (Vimm) at selected time points, compared with measurements obtained by point counting (Cavalieri Principle (Vcav)) after tissue sectioning to release Paw. Vimm was systematically higher than Vcav by 25% in dog lungs and 13% in guinea pig lungs (P=0.0003 between species). This size-dependent variability reflects residual elastic recoil, refolding and/or crumpling of alveolar septa after fixation. Vimm remained 14% higher than Vcav in dog lungs even after pressure release. Vcav/Vimm was systematically lower in the upper than the lower strata of the same lung. We conclude that Vcav measured on lung slices after relaxation of Paw more precisely represents the state of the tissue to be used for subsequent morphometric analysis, particularly for large lungs.

Descriptors: respiratory system, respiration, cavalieri method, laboratory techniques, scherle method, fixation, morphometry, applied and field techniques, point counting, saline immersion, tracheal instillation.

Yang, X.C., P. Zhou, and C.L. Li (2004). **Electrical heterogeneity of canine right ventricular transient outward potassium currents.** *Chinese Medical Journal (English Edition)* 117(4): 528-531. ISSN: 0366-6999.

Abstract: Background Some studies have confirmed that the right ventricular walls of most rodents, such as canines and humans, have evident transient outward potassium current (Ito1) heterogeneity, and this heterogeneity is closely related to J point elevation, J wave formation, and some ventricular tachycardias such as ventricular fibrillations caused by Brugada syndrome. This study is designed to investigate transmural electrical heterogeneity of the canine right ventricle during repolarization (phase 1) from the viewpoint of 4-aminopyridine sensitive and calcium-independent Ito1. Methods Adult canine single right ventricular epicardial (Epi) cells, mid-myocardial (M) cells, and endocardial (Endo) cells were enzymatically dissociated. Whole cell voltage-clamp recordings were made to compare the It., values of the

three cell types. Results At 37°C and using 0.2 Hz and +70 mV depolarizing test potentials, the average peak Ito1 values of Epi cells and M cells averaged (4070 ± 1720) pA and (3540 ± 1840) pA, respectively. The activated and inactivated Epi and M cells kinetic processes were in accordance with the Boltzmann distribution. Compared with Ito1 in Epi cells and M cells, the average peak Ito1 in Endo cells was very low, averaged (470 ± 130) pA. Conclusions These results suggest that there are evident differences and potent gradients in Ito1 between the three cardiac cell types, especially between Epi and Endo cells. These differences are among the prominent manifestations of right ventricular electrical heterogeneity, and may form an important ionic basis and prerequisite for some malignant arrhythmias in the right ventricle, including those arising from Brugada syndrome and other diseases.

Descriptors: cardiovascular system, transport and circulation, Brugada syndrome, genetic disease, heart disease, right ventricular malignant arrhythmias, heart disease, pathology, ventricular fibrillation, heart disease, pathology, ventricular tachycardia, electrophysiology, whole cell voltage clamp recording, histology and cytology techniques, laboratory techniques, Boltzmann distribution, J point elevation, J wave formation, depolarizing test potentials, repolarization, right ventricular transient outward potassium currents, electrical heterogeneity.

Regulations

Anderson, D. (2004). **Revision of Council of Europe Convention ETS 123 guidelines for the accommodation and care of animals used for experimental and other scientific purposes.** *ATLA, Alternatives to Laboratory Animals* 32(Suppl. 1A): 183-185. ISSN: 0261-1929.

NAL Call Number: Z7994.L3A5

Abstract: Within the 43 Member States of the Council of Europe, Appendix A of Convention ETS 123 provides guidance on the standards of accommodation and care to be provided for animals used for experimental and other scientific purposes. At a meeting of the Parties to the Convention in 1997, a resolution providing additional guidance on accommodation and care was adopted. At the same meeting, it was agreed that, as scientific knowledge and experience had progressed since adoption of ETS 123 in 1986, a Working Party should be convened to consider the revision of Appendix A. The Working Party first met in January 1999, and since then, there have been a number of Working Party meetings, and a number of meetings of Expert Groups, who are tasked with producing guidelines incorporating species-specific needs. The Expert Groups have drafted proposals for the accommodation and care of rodents, rabbits, dogs, cats, ferrets, farm animals, birds, amphibia, reptiles and fish. These proposals will complement the general principles of accommodation and care included in the general section of Appendix A. This comprehensive review has provided an opportunity to incorporate new ideas on housing and care based on scientific data and on best contemporary practises. It is expected that these revisions will be used throughout the scientific community to inform accommodation and care practises for animals used for scientific purposes.

Descriptors: animal housing, animal testing alternatives, animal welfare, guidelines, reviews.

Bayne, K.A. (2003). **Environmental enrichment of nonhuman primates, dogs and rabbits used in toxicology studies.** *Toxicologic Pathology* 31(Suppl.): 132-137. ISSN: 0192-6233.

Abstract: The increasing emphasis on the provision of environmental enrichment to laboratory animals, vis-a-vis the USDA Animal Welfare Regulations, the Guide for the Care and Use of Laboratory Animals (NRC 1996), and a potential forthcoming policy from the USDA on the subject, can be difficult to accommodate in a toxicology research environment. A summary will be provided of current requirements and recommendations. Then, strategies for meeting regulatory requirements will be described for non-rodent animals used in toxicology research. These strategies will

address methods of both social enrichment, such as pair or group housing, as well as non-social enrichment, such as cage furniture, food enrichments, and toys. In addition, the value of positive interactions with staff (e.g., through training paradigms or socialization programs) will also be discussed. Apparent in the discussion of these strategies will be an overarching recognition of the necessity to avoid introducing confounding variables into the research project and to avoid compromising animal health. The roles of the Institutional Animal Care and Use Committee (IACUC) and the attending veterinarian in helping scientists balance animal well-being, the scientific enterprise and the regulatory environment will be described.

Descriptors: environmental enrichment, laboratory animals, legislation, regulations, requirements, recommendations.

Briese, A. (2002). **Die tierschutz-hundeverordnung vom 2. Mai 2001. [The dog welfare directive of 2 May 2001]**. *Deutsche Tierärztliche Wochenschrift* 109(2): 63-68. ISSN: 0341-6593.

NAL Call Number: 41.8 B45

Abstract: As of 1 September, 2001 existing legislation regulating outdoor dog husbandry is replaced by the domestic dog welfare directive of 2 May, 2001. The new directive applies to details of housing and breeding of dogs kept indoors and as domestic companions. Thus, minimum requirements for housing, care and feeding now apply to the great majority of private dog owners. However these requirements do not apply to animals in transit, in individual veterinary treatment or to those used for scientific experimentation whose goals justify deviations from these standards. Additional regulations apply to dog breeding and showing. Puppies may not be separated from their mother and litter before eight weeks of age. "Prohibition of breeding for aggressiveness" cited in Paragraph 11b of the animal welfare law is defined, and includes various breeds and hybrids. The directive includes an index for the care and treatment of dogs by commercial breeders. After a transitional period no dogs which have been subjected to amputations at the expense of the animal's welfare in order to achieve specific features may be shown publicly. The author provides critical commentary on the regulations of the domestic dog welfare directive and points out areas which will continue to be of concern.

Descriptors: animal care, government and law, breeding, domestic dog welfare directive, housing.

Language of Text: German.

de Aluja, A.S. (2002). **Animales de laboratorio y la Norma Oficial Mexicana (NOM-062-ZOO-1999)**. *Gaceta Médica De México* 138(3): 295-298. ISSN: 0016-3813.

NAL Call Number: R21

Abstract: This article concerns animal experimentation and official Mexican norm Nom 0062-Zoo-1999 entitled Technical specifications for the production, care and

use of laboratory animals. The history of animal experimentation is briefly resumed. During the nineteenth century, doubts arose as to the right to expose animals to experimental procedures that frequently cause pain and suffering. The first law which protected animals against cruelty was passed in Great Britain in 1876; subsequently, other nations approved similar legislation. During the second part of the twentieth century, opposition to animal experimentation grew. Other groups, mainly scientists and pharmaceutical concerns, defended the right to use animals in research. New knowledge concerning the neurophysiology, cognitive capacity, and the animal faculty to experience pain is briefly mentioned. Guidelines on care and use of animals used in research published in several countries are listed. Finally, the recently published Mexican legislation (Norm) referring to production, care and use of laboratory animals is discussed and its benefits are stressed.

Descriptors: laboratory animals, Mexico, history, legislation, guidelines, pain, care and use.

Fillman Holliday, D. and M.S. Landi (2002). **Animal care best practices for regulatory testing.** *ILAR Journal* 43(Suppl.): S49-58. ISSN: 1084-2020.

NAL Call Number: QL55.A1143

Abstract: Best practices result from a partnership between law, science, and the people working with the animals on regulated studies. In an ideal setting, people working with animals observe and study animal behavior as influenced by different housing and handling paradigms. These observations are published to create a body of science, and laws are promulgated based on the science. The ideal world does not exist, but there are certain components of best practices common to all species. These components include study design, housing, social contact, diet/feed, enrichment devices, and human interaction. This paper outlines how the forces of law, science, and people work to create best practices for species in regulated studies, specifically mice, rats, rabbits, dogs, and nonhuman primates.

Descriptors: best practice, legislation, regulation, laboratory animals, regulated species.

Gauthier, C. (2004). **Overview and analysis of animal use in North America.** *ATLA Alternatives to Laboratory Animals* 32(Suppl. 1A): 275-285. ISSN: 0261-1929.

NAL Call Number: Z7994.L3A5

Descriptors: Canadian Council on Animal Care (CCAC), United States Department of Agriculture, animal use, category of invasiveness, three Rs, reduction, refinement, replacement, animal experiments, animal testing alternatives, animal welfare, correlation analysis, trends, cats, dogs, guinea pigs, hamsters, rabbits.

Hampshire, V.A. (2003). **Regulatory issues surrounding the use of companion animals in clinical investigations, trials, and studies.** *ILAR Journal* 44(3): 191-196. ISSN: 1084-2020.

NAL Call Number: QL55.A1I43

Abstract: Laboratory animal veterinarians sometimes encounter animals with rare conditions and may subsequently become involved in the performance of related animal research outside the laboratory, in homes, in veterinary clinics, or in universities to which owners have donated their animals for study. Similarly, veterinarians may monitor animal companion vaccination studies, performed to optimize preventive health care or minimize physiological variability and research confounders associated with a preventive medicine program for dogs and cats utilized for research procedures. These nontraditional uses of dogs, cats, and other companion animals in research have spurred the establishment of regulations to ensure that the animals benefit from clinical veterinary products and techniques. Included and described are the 2002 Public Health Service Policy, the Animal Welfare Act (AWA), the Federal Food, Drug, and Cosmetic Act, and the regulations of the US Department of Agriculture in response to the AWA. The complexities of clinical research with companion animals outside standard biomedical research facilities are discussed.

Descriptors: clinical research, companion animals, beyond laboratory settings, special concerns, vaccinations, preventive health care.

Kieffer, J.P. (2002). **L'agressivite des chiens, aspects comportementaux, cadre reglementaire et legislatif. [Canine aggression, behavioural aspects, regulations and legislation.]** *Bulletin De La Societe Veterinaire Pratique De France* 86(2): 114-118. ISSN: 0395-7500.

Descriptors: aggression, aggressive behavior, bites, legislation, dogs.

Language of Text: French.

Kulpa-Eddy, J.A., S. Taylor, and K.M. Adams (2005). **USDA perspective on environmental enrichment for animals.** *ILAR Journal* 46(2): 83-94. ISSN: 1084-2020.

NAL Call Number: QL55.A1I43

Abstract: This article provides a brief historical background of the events and circumstances that led to the 1985 Animal Welfare Act (AWA) amendments. It describes the development of the regulations promulgated by the US Department of Agriculture (USDA) in 1991 as a result of these amendments, the reasoning given for the proposals, and the revisions that were made during the process. Information is included on USDA implementation of the regulations regarding exercise for dogs and environmental enhancement for nonhuman primates. Also mentioned briefly are the requirements for socialization of marine mammals and space requirements for certain other regulated warm-blooded species. These requirements apply to animal dealers (breeders and brokers), exhibitors, commercial transporters, and research facilities.

The standards for exercise and environmental enhancement were different from any others previously contained in the AWA regulations, and required more research and understanding of species-specific needs by the regulated community. Finally, this article describes some of the initiatives being undertaken by the research community and USDA-Animal and Plant Health Inspection Services (APHIS)-Animal Care to provide the necessary education and guidance indicated by the violation history data. **Descriptors:** dogs, primates, exercise, environmental enrichment, regulations, standards, species specific needs.

Marston, L.C., P.C. Bennett, and G.J. Coleman (2004). **What happens to shelter dogs? An analysis of data for 1 year from three Australian shelters.** *Journal of Applied Animal Welfare Science* 7(1): 27-47. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: Annually, welfare shelters admit many dogs, including those whose caregivers surrender them or dogs who are strays. This article analyzes admission data from 3 metropolitan Australian shelters. The study collected data for a 1-year period and analyzed them to identify the characteristics of the typical shelter dog; patterns of relinquishment, sales, reclamation and euthanasia; and duration of stay and reasons underlying euthanasia, relinquishment, and postadoptive return. The study tracked more than 20,000 admissions during this period. To facilitate reclamation, the local Code of Practice requires a mandatory holding period for stray dogs; assessment for suitability for rehoming then occurs. Dogs failing the assessment are euthanized. Surrendered dogs can be assessed immediately. The Code of Practice also recommends that unsold dogs be euthanized 28 days postassessment. Typically, shelter dogs in Melbourne are strays, sexually entire, adult, small, and-usually-male. The majority of admissions are reclaimed or sold. Most reclamations occur within 4 days, and postadoptive return rates are low. That current desexing messages do not appear to have reached the owners of stray dogs to the same extent as they have other dog owners is a major finding, suggesting that a targeted education campaign may be required.

Descriptors: animal care, code of practice, desexing message, euthanasia pattern, postadoptive return, reclamation pattern, relinquishment pattern, sales pattern, welfare shelter.

Mertens, P.A. (2003). **Welfare implications of dangerous dog legislation.** In: *Scientific Proceedings Veterinary Programme: British Small Animal Veterinary Association 46th Annual Congress, April 3-6, 2003, Birmingham, UK*, British Small Animal Veterinary Association: Quedgeley, UK, p. 101-102. ISBN: 0905214773.

Descriptors: aggression, animal welfare, bites, dog breeds, legislation, dogs.

New Zealand. Animal Welfare Advisory Committee. (1998). **Code of Recommendations and Minimum Standards for the Welfare of Dogs.**, Code of animal welfare, 1171-090X; no. 20, Animal Welfare Advisory Committee, Ministry of Agriculture:

Wellington, N.Z., 35 p. ISBN: 047807459X.

Online: <http://www.biosecurity.govt.nz/animal-welfare/codes/dogs/index.htm>

NAL Call Number: HV4890.4.A3C63 no.20

Descriptors: codes of recommendations, minimum standards, care, welfare, housing, nutrition, surgical procedures, euthanasia.

Notes: "May 1998."

Pereira, S., P. Veeraraghavan, S. Ghosh, and M. Gandhi (2004). **Animal experimentation and ethics in India: The CPCSEA makes a difference.** *ATLA Alternatives to Laboratory Animals* 32(Suppl. 1B): 411-415. ISSN: 0261-1929.

NAL Call Number: Z7994.L3A5

Descriptors: Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), India, government and law, Prevention of Cruelty to Animals Act 1960, animal care guidelines, animal experimentation, animal welfare, laboratory animal care.

Prescott, M.J. (2004). **Refining dog husbandry and care. Eighth report of BVAWF/FRAME/RSPCA/UFAW Joint Working Group on Refinement.** *Laboratory Animals* 38(Suppl. 1): 1-94. ISSN: 0023-6772.

NAL Call Number: QL55.A1L3

Abstract: An estimated 140 000 dogs are used worldwide in research and testing every year. Although there is a growing trend of providing more complex environments for laboratory dogs, worldwide much dog husbandry and care fails to incorporate what is known about their natural behaviour and their behavioural and welfare needs. With this in mind, the BVAWF/FRAME/RSPCA/UFAW joint Working Group on Refinement set out to identify and document ways in which dog husbandry and care can be refined to make significant reductions in suffering and improvements in animal welfare. The Working Group's report contains recommendations on housing and on physical environment, food and feeding, environmental enrichment and exercise, health and hygiene, identification and record keeping, breeding, balancing supply and demand, grouping, transport, handling and restraint, procedures, long-term use, rehoming, staff training, and areas for future research for refining dog husbandry and care. Advice is also given on interpreting dog signals, preventing and managing aggression, and controlling noise in dog facilities. Particular emphasis is placed on providing an enriched environment for dogs which permits them to express a wide range of normal behaviour and to exercise a degree of choice, and on combining this with a socialization, habituation and training programme. Together these measures should significantly reduce and/or eliminate fear-related behavioural responses and stereotypic behaviours. They will also have a positive effect on the behavioural development of the dogs, helping to ensure that calm, confident, and well-adjusted individuals are issued to the end-use areas. This in turn will assist

in the collection of reliable and accurate experimental data from dog studies and will avoid unnecessary wastage of life. The report represents a valuable resource for staff training. It should be read and thought about, and the recommendations acted upon, by all those involved with the management, care and use of dogs bred and used for research and testing. Where standards fall below those detailed here, a programme of improvement should be put in place. This should aim to achieve a proper balance between conspecific and human social interaction for dogs, and provide pens and other environments developed with an understanding of the natural behaviours of the dog, and empathetic personnel trained and competent to care for them. Employing a canine behaviour specialist can help to achieve these aims. It may be necessary for managers of facilities to rethink the way that dog husbandry and care has been practised in the past in order to allocate the time, staffing and funding required to implement the programme. Only through sincere commitment, adequate resources and sufficient will to change can significant reductions in suffering and improvements in animal welfare be guaranteed.

Descriptors: history, behavior, housing, husbandry, legislation, research, pen construction, pen design, stocking density, single housing, outdoor runs, lighting, temperature, humidity, noise.

Pritt, S., J.F. Nostrant, P. Samalonis, B. Lotocki, and R.M. Harrison (2004). **Clinical blood draws: when do they require IACUC approval?** *Lab Animal* 33(1): 17-21. ISSN: 0093-7355.

NAL Call Number: QL55.A1L33

Descriptors: blood withdrawal, institutional policy, institutional animal care and use committee, regulations.

Rehbinder, C., P. Baneux, D. Forbes, H.v. Herck, W. Nicklas, Z. Rugaya, and G. Winkler (1998). **FELASA recommendations for the health monitoring of breeding colonies and experimental units of cats, dogs and pigs. Report of the Federation of European Laboratory Animal Science Associations (FELASA) Working Group on Animal Health.** *Laboratory Animals* 32(1): 1-17. ISSN: 0023-6772.

NAL Call Number: QL55.A1L3

Abstract: The report is in 8 parts: Introduction; Inspection of the colony; Monitoring procedures; Health monitoring report; Cat; Dog; Pig. Samples of FELASA-approved health monitoring report forms are included.

Descriptors: laboratory animals, animal welfare, cats, dogs, pigs.

Reinhardt, V. and A. Reinhardt (2001). **Legal space requirement stipulations for animals in the laboratory: are they adequate?** *Journal of Applied Animal Welfare Science* 4(2): 143-149. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Descriptors: animal experiments, Beagle, cage size, floor space, laboratory animals, space requirements.

Shiranee, P., V. Prema, G. Sonya, and G. Maneka (2004). **Animal experimentation and ethics in India: the CPCSEA makes a difference.** *ATLA, Alternatives to Laboratory Animals* 32(Suppl. 1B): 411-415. ISSN: 0261-1929.

NAL Call Number: Z7994.L3A5

Abstract: The Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) is a statutory body formed by the Act of the Indian Parliament under the Prevention of Cruelty to Animals Act 1960. Formed in 1964, it was revived in 1998, under the committed chairpersonship of Maneka Gandhi. In the last two years, the CPCSEA has bettered the life of the animals in laboratories across India. This committee is composed of members of the scientific community, regulatory authorities and animal activists. The CPCSEA functions with a brilliant network of volunteers who liaise with the laboratories. For the first time in India: over 665 laboratories are registered with the CPCSEA; Institutional Animal Ethics Committees (IAECs) are constituted in every laboratory, which are only empowered to approve research project proposals that use rats, mice, guinea-pigs or rabbits; every project that uses canines, ovines, bovines or non-human primates can only be conducted if approved by the panel of scientific experts constituted for this purpose; guidelines on laboratory animal care and practice have been formulated and enforced; a protocol for the production of immunobiologicals from equines has been formulated and ratified by the Supreme Court of India; the CPCSEA has been deliberating on alternatives and working out modalities to introduce alternatives in basic/regulatory research and education, in keeping with the international arena; the CPCSEA, to date, has rehabilitated and homed over 300 dogs, 150 equines, 200 non-human primates and several cattle, cats, birds, rabbits and mice; the CPCSEA proactively trains and guides scientific and non-scientific personnel on issues of alternatives and laboratory animal welfare; and the CPCSEA has fought legal issues on laboratory animal care and use and have had verdicts that favoured alternatives and animal welfare.

Descriptors: animal experiments, animal husbandry, animal testing alternatives, animal welfare, bioethics, ethics, government organizations, laboratories, laboratory animals, regulations.

Smith D, Broadhead C, Descotes G, Fosse R, Hack R, Krauser K, Pfister R, Phillips B, Rabemampianina Y, Sanders J, Sparrow S, Stephan-Gueldner M, and Jacobsen SD. (2002). **Preclinical safety evaluation using nonrodent species: an industry/welfare project to minimize dog use.** *ILAR Journal* 43(Suppl.): S39-S42. ISSN: 1084-2020.

NAL Call Number: QL55.A1143

Abstract: This review of the dog, the primary nonrodent species used in toxicol-

ogy, and its use in the safety evaluation of pharmaceuticals, provides data on the number used in particular projects in an effort to establish a baseline from which some minimization can be measured. Opportunities for reduction and replacement, as identified by a European Industry/Welfare Steering Group, are discussed. The three distinct areas of potential approaches to minimize dog use are categorized as industrial cooperation/data sharing, achieving best practice in study design, and assessing the need for a particular study. The Steering Group prioritized the approaches based on the impact on the number of animals used, the impact on the welfare of the remaining animals, the potential for industry's acceptance of the scientific approach, the potential for regulators' acceptance of the validated approach, and the time/cost of evaluation or implementation. Examples of each category are presented, and the work needed to facilitate industry/regulatory change is discussed.

Descriptors: dogs, laboratory mammals, toxicity, tests, experimental design, UK, animal use reduction.

Notes: In the special issue: Regulatory testing and animal welfare. Proceedings of an International Symposium held June 21-23, 2001, Quebec City, Canada.

Smith, D., R. Combes, and G. Descotes (2003). **Approaches to the minimisation of dog use in the safety assessment of pharmaceuticals: An industry/animal welfare initiative.** *Toxicology Letters* 144(Suppl. 1): S48. ISSN: 0378-4274.

NAL Call Number: RA1190.T62

Descriptors: toxicology, industry animal welfare initiative, animal welfare, pharmaceutical safety testing, study design.

Notes: Meeting Information: 41st Congress of the European Societies of Toxicology EUROTOX 2003 'Science for Safety', Florence, Italy; September 28-October 1, 2003.

Stasiak, K.L., D. Maul, E. French, P.W. Hellyer, and S. Vandewoude (2003). **Species-specific assessment of pain in laboratory animals.** *Contemporary Topics in Laboratory Animal Science* 42(4): 13-20. ISSN: 1060-0558.

NAL Call Number: SF405.5.A23

Abstract: Pain has been defined by the International Association for the Study of Pain as "an unpleasant sensory and emotional experience associated with actual or potential damage or described in terms of such damage". However, the ability to describe the concept of pain is difficult largely because pain is an individualized and subjective experience. What one person finds painful, another may not; what relieves pain for one may not do so for another. Awareness of pain management has become an important health issue for humans and animals. To effectively manage pain, it is crucial to be able to identify it, and identification of pain in animals can be especially problematic. Recognition and alleviation of pain in animals used in biomedical research and teaching is an important goal, both from a humane and regulatory per-

spective. This paper will: 1) review current literature regarding pain assessment using pain scales and 2) describe how an institutional care and use committee (IACUC) has implemented an effective pain scoring system to allow for an objective, accurate, and humane assessment of pain experienced by animals used in biomedical research.

Descriptors: laboratory animals, pain scoring system, species-specific pain scales, pain.

Stephan Gueldner, M., D. Smith, and G. Descotes (2003). **Approaches to minimising dog use in pharmaceutical safety assessment: An industry/animal welfare initiative.**

Toxicological Sciences 72(S-1): 220. ISSN: 1096-6080.

NAL Call Number: RA1190.F8

Descriptors: toxicology, drug formulation studies, pharmaceutical safety assessment, animal welfare, minimizing dog use, toxicology safety assessment.

Notes: Meeting Information: 42nd Annual Meeting of the Society of Toxicology, Salt Lake City, Utah, USA; March 9-13, 2003.

Swallow J, Anderson D, Buckwell AC, Harris T, Hawkins P, Kirkwood J, Lomas M, Meacham S, Peters A, Prescott M, Owen S, Quest R, Sutcliffe R, and Thompson K (2005). **Guidance on the transport of laboratory animals.** *Laboratory Animals* 39(1): 1-39. ISSN: 0023-6772.

NAL Call Number: QL55.A1L3

Descriptors: animal care, laboratory animal science association, animal transport, working group, standards.

Turner, P.V., K.L. Smiler, M. Hargaden, and M.A. Koch (2003). **Refinements in the care and use of animals in toxicology studies: Regulation, validation, and progress.**

Contemporary Topics in Laboratory Animal Science 42(6): 8-15. ISSN: 1060-0558.

NAL Call Number: SF405.5.A23

Descriptors: animal experiments, animal housing, animal models, animal welfare, enrichment, group size, laboratory animals, regulations, toxicity, dogs, mice, monkeys, rabbits, rats.

Shelter Dogs

Coppola, C.L., T. Grandin, and R.M. Enns (2006). **Human interaction and cortisol: can human contact reduce stress for shelter dogs?** *Physiology and Behavior* 87(3): 537-541. ISSN: 0031-9384.

NAL Call Number: QP1.P4

Abstract: Animal shelters are an extremely stressful environment for a dog, most specifically due to social isolation and novel surroundings. The stress response of dogs housed in this environment may be alleviated through human interaction shortly after arrival. During their second day in a public animal shelter, adult stray dogs were either engaged in a human contact session or not. The session involved taking the dog into an outdoor enclosure, playing with the dog, grooming, petting and reviewing basic obedience commands. Each dog interacted with a human for approximately 45 min. Salivary cortisol levels were examined from each dog on their 2nd, 3rd, 4th and 9th day of housing. Animals that engaged in a human contact session had lower cortisol levels on day 3 than animals that did not. Breed type, sex and age did not have an effect on cortisol levels on any day measured. A human interaction session can be beneficial to both animal welfare and adoption procedures. The current study not only utilized the human contact session as a treatment to reduce stress but also as a resource for individual temperament/personality information that could be later used to facilitate compatible adoptions. Human interaction may be an effective means of reducing the cortisol response of dogs in the aversive shelter environment.

Descriptors: human-pet bonding, hydrocortisone metabolism, psychological stress, stress, dogs, saliva.

de Palma, C., E. Viggiano, E. Barillari, R. Palme, A.B. Dufour, C. Fantini, and E. Natoli (2005). **Evaluating the temperament in shelter dogs.** *Behaviour* 142(9/10): 1307-1328. ISSN: 0005-7959.

NAL Call Number: 410 B393

Abstract: Seventy-four healthy mixed-breed dogs were studied collecting behavioural data by means of 'focal animal sampling' and 'all occurrences' methods; the ethogram utilised consisted of more than 100 behavioural patterns. All dogs were taken outside the shelter for a walk to analyse their reaction to a novel environment. In addition, three faecal samples were collected from each dog on three consecutive days during daily routine, to measure the levels of cortisol metabolites (CM) to evaluate adrenocortical activity. A Principal Component Analysis (PCA) identified five primary factors: 'subordination/aggressiveness', 'intraspecific dominance-activity', 'anxiety-sociability towards dogs', 'playfulness' and 'sociability towards humans'. Dogs

that showed a confident -independent temperament in a familiar context (within the shelter), showed fear in novel situations (outside the shelter). Despite the absence of a proper control we hypothesise that the stress levels were low both behaviourally and physiologically: neither stereotypies nor inactivity and lack of interest in the surrounding environment was observed, and the median CM concentration was moderately low. Lower concentrations of faecal CM were recorded in dogs with a temperament 'sociable to human beings' which were also associated with a longer stay in the shelter..

Descriptors: animal behavior, novel environment, ethogram, temperament, aggression, anxiety, playfulness, feces, hydrocortisone, shelters.

Ledger, R.A. and J.M. Stephen (2004). **Reducing dog return rates at rescue shelters: Applying science for animal welfare.** *Animal Welfare* 13(Suppl.): S247. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Descriptors: animal care, behavior, temperament test, RSPCA, animal welfare, owner dog compatibility, rescue shelter, return rate.

Notes: Meeting Information: Universities Federation for Animal Welfare (UFAW) Symposium on Science in the Service of Animal Welfare, Edinburgh, UK; April 2-4, 2003.

Marston, L.C., P.C. Bennett, and G.J. Coleman (2005). **Adopting shelter dogs: owner experiences of the first month post-adoption.** *Anthrozoos* 18(4): 358-378. ISSN: 0892-7936.

NAL Call Number: SF411.A57

Abstract: A number of studies have examined factors associated with the relinquishment of pet dogs to animal welfare shelters. In Australia, however, there has been little investigation of new owners' experiences when they subsequently adopt one of these dogs. To address this, telephone interviews were conducted with 62 persons who had recently adopted a shelter dog in Melbourne, Australia. Data relating to adopter demographics, factors influencing the selection of a dog and problems experienced post-adoption were collected. Shelter dogs were primarily acquired to replace a deceased pet or as companions to humans or other dogs. Selection was influenced by the dog's size, general appearance and behavior, with adopters preferring dogs who behaved in a calm and friendly manner. Common problems reported during the initial post -adoptive period were hyperactivity/boisterousness, compatibility issues with an existing pet and pulling on the lead. Escaping was strongly associated with separation-related problems. Three-quarters of the sample walked their dogs daily for 30 minutes or more, with larger dogs exercised for longer. Most dogs were exercised off-lead for some period, particularly larger dogs. This study indicates that improving assessment and matching procedures, and providing in -house and post-adoptive

training could increase rehoming success rates..

Descriptors: adoption, animal behavior, animal welfare, hyperactivity, interviews, ownership, dogs.

Marston, L.C., P.C. Bennett, and G.J. Coleman (2005). **What happens to shelter dogs?**

Part 2. Comparing three melbourne welfare shelters for nonhuman animals.

Journal of Applied Animal Welfare Science 8(1): 25-45. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: Although the characteristics of dogs admitted to animal welfare shelters have been described previously, few studies have compared the statistics of different welfare shelters. The existing studies compare shelters that differ operationally and philosophically on factors such as whether they perform euthanasia or whether the shelter receives both impounded and relinquished animals. This study aims to determine whether differences in admission and outcome data exist between shelters when these issues are constant. The study sampled 3 metropolitan Australian shelters over a 12-month period. All shelters sampled serve both as municipal pounds and welfare shelters, perform euthanasia as required, and operate within the relatively small, culturally homogeneous environment of Melbourne. The study observed significant differences between shelters regarding the admission characteristics of the dogs, length of stay, and outcomes. The identification of these differences may enable us to establish “best-practice” procedures capable of implementation elsewhere. The differences identified in the reasons given for relinquishment between locations also may have policy and educational implications for animal control agencies.

Descriptors: animal husbandry organization and administration, animal welfare organization and administration, australia, dogs, euthanasia, animal, rural population, time factors, urbanization.

Marston, L.C. and P.C. Bennett (2003). **Reforging the bond: towards successful canine**

adoption. *Applied Animal Behaviour Science* 83(3): 227-245. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: While most human-canine relationships are very fulfilling others fail, resulting in a large number of animals being abandoned or relinquished to animal shelters each year. This paper reviews our current understanding of the canine relinquishment and adoption process, with the aim of identifying those areas in which research is incomplete or absent. In order to achieve this aim, the process of canine ownership, relinquishment and adoption is broken down into a number of logical stages, which are then evaluated separately. The areas reviewed include the reasons why people acquire dogs, factors involved in their relinquishment, the effects of shelter admission upon canine behaviour, the evaluation of a dog’s potential for adoption, characteristics of adopters, factors influencing a prospective adopter’s choice and problems which may be experienced post-adoption. The review identifies deficiencies

in our current knowledge and indicates valid directions for future research.

Descriptors: behavior, philosophy, ethics, animal shelter, animal welfare, human-canine relationship, pet adoption, shelter relinquishment.

Marston, L.C., P.C. Bennett, and G.J. Coleman (2004). **What happens to shelter dogs? An analysis of data for 1 year from three Australian shelters.** *Journal of Applied Animal Welfare Science* 7(1): 27-47. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: Annually, welfare shelters admit many dogs, including those whose caregivers surrender them or dogs who are strays. This article analyzes admission data from 3 metropolitan Australian shelters. The study collected data for a 1-year period and analyzed them to identify the characteristics of the typical shelter dog; patterns of relinquishment, sales, reclamation and euthanasia; and duration of stay and reasons underlying euthanasia, relinquishment, and postadoptive return. The study tracked more than 20,000 admissions during this period. To facilitate reclamation, the local Code of Practice requires a mandatory holding period for stray dogs; assessment for suitability for rehoming then occurs. Dogs failing the assessment are euthanized. Surrendered dogs can be assessed immediately. The Code of Practice also recommends that unsold dogs be euthanized 28 days postassessment. Typically, shelter dogs in Melbourne are strays, sexually entire, adult, small, and-usually-male. The majority of admissions are reclaimed or sold. Most reclamations occur within 4 days, and postadoptive return rates are low. That current desexing messages do not appear to have reached the owners of stray dogs to the same extent as they have other dog owners is a major finding, suggesting that a targeted education campaign may be required.

Descriptors: animal care, code of practice, desexing message, euthanasia pattern, postadoptive return, reclamation pattern, relinquishment pattern, sales pattern, welfare shelter.

Neidhart, L. and R. Boyd (2002). **Companion animal adoption study.** *Journal of Applied Animal Welfare Science* 5(3): 175-192. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: To better understand the outcomes of companion animal adoptions, Bardsley & Neidhart Inc. conducted a series of 3 surveys over a 1-year period with dog and cat owners who had adopted their pet through either a (a) Luv-A-Pet location, (b) Adopt-a-thon, or (c) traditional shelter. This article suggests opportunities to improve owners' perceptions of their pets and the adoption process through (a) providing more information before adoption about pet health and behaviors, (b) providing counseling to potential adopters to place pets appropriately, and (c) educating adopters to promote companion animal health and retention. Results demonstrate that the pet's relationship to the family unit, such as where the pet sleeps and how much time is spent with the pet, is related to the amount of veterinary care

the companion animal receives, and to long-term retention. Satisfaction and retention are attributed to the pet's personality, compatibility, and behavior, rather than demographic differences among adopters or between adoption settings. The age of the companion animal at adoption, the intended recipient, and presence of children in the home also play a role. Health problems were an issue initially for half of all adopted pets, but most were resolved within 12 months. Roughly one fourth of adopters who no longer have their companion animal said their pet died. Characteristics of pets that died support the contention that spaying and neutering profoundly affects a companion animal's life span. Although retention is similar for dogs and cats, mortality is higher among cats in the first year after adoption.

Descriptors: behavior, philosophy and ethics, neutering, spaying, adopt a thon, luv a pet location, petsmart, age differences, animal shelter, companion animal adoption, compatibility, counseling, education, health, mortality, personality, pet retention, veterinary care.

Nemcova, D. and P. Novak (2003). **Adoption of dogs in the Czech republic.** *Acta Veterinaria Brno* 72(3): 421-427. ISSN: 0001-7213.

NAL Call Number: SF604.B7

Abstract: The aim of this work was to analyze selected factors playing a role in the adoption of dogs from shelters in the Czech Republic. The study was performed in two shelters from May to December 1999. Using a questionnaire, we obtained data about the adopted dogs (time spent in the shelter, age, sex and breed of the dog, dogs admitted to shelter by incoming category, group housing vs. individual housing), and demographic data about the new owners (age, sex, urban/rural housing type, previous experience with dogs, reason for the wish to own a dog, motivation for selecting a specific dog). We compared data about dogs adopted from shelter A situated in an urban environment with a population of 50 thousand, and from shelter B situated in a rural area, in a village with approximately 2 000 inhabitants. Dogs in shelter A were most frequently brought in by the person who captured the animal (41.3%), and surrendered by the owner (28.0%). Dogs in shelter B in the rural area were most frequently delivered by municipal police (82.0%). Before adoption, the dogs spent 53 days on average in shelter A, and 85 days in shelter B. The highest fractions of dogs adopted from both shelters were puppies 2-4-month-old (26.7 and 38.0%, respectively), closely followed by dogs aged 8 months-to-2 years and 2-5 years. Sex did not play a significant role in dog adoption. Among new owners adopting dogs from shelters A and B, those 26 to 60 years of age prevailed (chi2 5.678, P<0.05; chi2 12.294, P<0.01, respectively) over those aged 18 to 26 years, and also over adopters older than 60 years (chi2 26.329, P<0.01; chi2 13.677, P<0.01, respectively). No differences between adopters from the two shelters were found in reasons for adoption, except for personality of the dog that prevailed in shelter A (chi2 4.285, P<0.05). Previous experience of dog ownership was reported by 96.0% new owners for shelter

A, and 98.0% for shelter B. There were no differences found concerning the sex of new owners and presence of children in the family. The findings from this pilot study indicate that adoption is more related to factors associated with the new owners than to factors associated with the dogs. The data may serve shelter personnel and veterinarians to help develop strategies aimed at improving chances for adoption of dogs and shortening the time in shelter by providing detailed and qualified information to potential dog adopters.

Descriptors: animal care, behavior, questionnaire, applied and field techniques, animal adoption, animal shelter, demographics, housing, rural population, urban population.

Sales, G., R. Hubrecht, A. Peyvandi, S. Milligan, and B. Shield (1997). **Noise in dog kennelling: is barking a welfare problem for dogs?** *Applied Animal Behaviour Science* 52(3-4): 321-329. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Noise levels (sound pressure levels, SPLs) were monitored over 24 and 48 h in a number of different types of kennels including shelters, training establishments and research laboratories. Two measures of SPL were used, L_{peak} and L_{eq} , over both low (1 Hz-20 kHz) and high (12.5-70 kHz) frequency ranges and using a linear weighting. At most sites the noise levels followed a diurnal pattern; levels were generally low and relatively constant overnight, increased gradually in the early morning and then fluctuated during the working day. Levels decreased in the evening at different times depending on the local regimes. In one facility near railway lines the diurnal pattern was less obvious. During the day L_{peak} values regularly exceeded 100 dB and often reached 125 dB; L_{eq} values were between 65 and 100 dB. The high noise levels were caused mainly by barking, but husbandry procedures such as cleaning also contributed to them. The noise levels recorded here may have welfare implications. There is currently a lack of adequate guide lines for noise levels in dog kennels.

Descriptors: noise, kennels, housing, husbandry, animal welfare, dogs.

Salminen, T. (1998). **Kissojen ja koirien hoito loytoelaintiloissa. [The care of dogs and cats in animal shelters.]** *Suomen Elainlaakarilehti* 104(3): 139-142.

NAL Call Number: 41.8 N813

Descriptors: pets, animal welfare, stray animals, housing, cats, dogs.

Language of Text: Finnish.

Sokolow, S.H., C. Rand, S.L. Marks, N.L. Drazenovich, E.J. Kather, and J.E. Foley (2005). **Epidemiologic evaluation of diarrhea in dogs in an animal shelter.** *American Journal of Veterinary Research* 66(6): 1018-1024. ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: OBJECTIVES: To determine associations among infectious pathogens

and diarrheal disease in dogs in an animal shelter and demonstrate the use of geographic information systems (GISs) for tracking spatial distributions of diarrheal disease within shelters. **SAMPLE POPULATION:** Feces from 120 dogs. **PROCEDURE:** Fresh fecal specimens were screened for bacteria and bacterial toxins via bacteriologic culture and ELISA, parvovirus via ELISA, canine coronavirus via nested polymerase chain reaction assay, protozoal cysts and oocysts via a direct fluorescent antibody technique, and parasite ova and larvae via microscopic examination of direct wet mounts and zinc sulfate centrifugation flotation. **RESULTS:** Salmonella enterica and Brachyspira spp were not common, whereas other pathogens such as canine coronavirus and Helicobacter spp were common among the dogs that were surveyed. Only intestinal parasites and Campylobacter jejuni infection were significant risk factors for diarrhea by univariate odds ratio analysis. Giardia lamblia was significantly underestimated by fecal flotation, compared with a direct fluorescent antibody technique. Spatial analysis of case specimens by use of GIS indicated that diarrhea was widespread throughout the entire shelter, and spatial statistical analysis revealed no evidence of spatial clustering of case specimens. **CONCLUSIONS AND CLINICAL RELEVANCE:** This study provided an epidemiologic overview of diarrhea and interacting diarrhea-associated pathogens in a densely housed, highly predisposed shelter population of dogs. Several of the approaches used in this study, such as use of a spatial representation of case specimens and considering multiple etiologies simultaneously, were novel and illustrate an integrated approach to epidemiologic investigations in shelter populations.

Descriptors: diarrhea, housing, California, complementary genetics, enzyme linked immunosorbent assay, feces, animal shelter, dogs, geographic information systems, polymerase chain reaction (PCR).

Soto, F.R., F. Ferreira, S.R. Pinheiro, F. Nogari, M.R. Risetto, O. de Souza, and M. Amaku (2005). **Adoption of shelter dogs in a Brazilian community: Assessing the caretaker profile.** *Journal of Applied Animal Welfare Science* 8(2): 105-116. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: A survey in Ibiuna, Sao Paulo, Brazil, of caregivers (owners) who adopted shelter dogs assessed length of ownership, proportion of male and female dogs adopted, and owners' characteristics. It addressed breeding, neutering, vaccination, and veterinary care. It used no testing to provide a good "match" between dog and future owner. Of adopted dogs, 58% were male. Only 36% of owners were located. Mean ownership length was 14.8 months (95% confidence interval = 12.4 to 17.2 months), estimated through a survival analysis method. Of adopted dogs, 40.9% lived with their owners; 34.9% had died (some had lived on the streets); 15.0% were donated; 4.3% ran away; 3.2% were returned to the city shelter. Of interviewees, 57% reported no difficulties with the adoption; 23.1% cited the animal's illness and

death as the main difficulty. For contraception, 87 owners (46.7%) chained dogs to prevent contact with other animals; 56.5% were against neutering. Reasons given were compassion (58.1%), unnecessary procedure (11.4%), cost (9.5%), and behavior change (4.8%). This research motivated a design for Ibiuna shelter dog adoption to improve the proportion of successful adoptions.

Descriptors: animal welfare, human- pet bonding, pet ownership, Brazil, dogs, personality inventory, questionnaires.

Stephen, J.M. and R.A. Ledger (2005). **An audit of behavioral indicators of poor welfare in kenneled dogs in the United Kingdom.** *Journal of Applied Animal Welfare Science* 8(2): 79-96. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: This survey-based study describes the prevalence and onset of behavioral indicators of poor welfare in dogs kenneled at United Kingdom rescue shelters. It describes key factors contributing to individual variation in behaviors. At 8 rescue shelters, staff trained in the care of nonhuman animals recorded daily whether dogs in their care displayed each of 15 behaviors. The study originally involved 302 dogs; for the first 14 days, it monitored only 148 dogs daily. The study observed dogs for a maximum of 6 weeks from admittance, observing all 15 behaviors at least once during the first 2 weeks (n = 148). The proportion of dogs observed to perform each behavior differed within the sample. The most commonly observed behavior (24.3% of dogs) was excessive barking. The remaining 14 behaviors ranged from listlessness (20.3%) to repetitive tail-chasing (1.3%). Over the 6 weeks, the proportion observed to pace repetitively and wall bounce increased. The proportion who lacked appetite and displayed fear-associated behavior decreased. Breed differences, gender, and age partially explained variability in the onset and prevalence of behavioral indicators of poor welfare in kenneled dogs.

Descriptors: animal husbandry statistics and numerical data, behavior, animal physiology, animal welfare, dogs, england epidemiology, incidence, pedigree, prevalence, questionnaires, social isolation.

Thorn, J.M., J.J. Templeton, K.M. Van Winkle, and R.R. Castillo (2006). **Conditioning shelter dogs to sit.** *Journal of Applied Animal Welfare Science* 9(1): 25-39. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: Human contact in the shelter may lessen effects of change in environment and smooth transition into a home. Training can increase a dog's interaction with people in a shelter environment. Experiments were conducted to determine how rapidly shelter dogs learn to sit, if the dogs can retain sitting behavior over time, and if sitting transfers to novel locations and people. Two experiments trained shelter dogs (n = 21) to sit when a stranger approached over a 10-trial session. Food and a verbal

cue or a clicker reinforced the sit. The experiments measured latency to sit for each trial. Latency to sit decreased significantly over trials. Another experiment included reinforcement given to dogs (n = 20) on a noncontingent basis or for sitting. Five days of the experiment (condition training) were in the same room with the same experimenter. The last 4 days (testing) varied by both experimenter and location (familiar or strange). Results indicate that short training sessions are effective for teaching shelter dogs to sit, that dogs can retain sitting behavior over 2 days, and that training transfers to novel people and situations.

Descriptors: behavior, animal physiology, human-pet bonding, operant conditioning, dog psychology, analysis of variance, animal welfare, positive and negative reinforcement, social behavior.

van Winkle Martinez, K.D. (2003). **Conditioning for adoptable behaviors in shelter dogs.**

Transactions of the Illinois State Academy of Science 96(Suppl.): 45. ISSN: 0019-2252.

NAL Call Number: 500 Il6

Descriptors: animal care, behavior, adoptable behavior, condition training, animal shelters, dogs.

Notes: Meeting Information: 95th Annual Meeting of the Illinois State Academy of Science, Normal, Illinois, USA; April 45, 2003.

Wells, D. and P.G. Hepper (2000). **The influence of environmental change on the behaviour of sheltered dogs.** *Applied Animal Behaviour Science* 68(2): 151-162. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(00\)00100-3](http://dx.doi.org/10.1016/S0168-1591(00)00100-3)

NAL Call Number: QL750.A6

Descriptors: shelters, animal welfare, temperament, cages, consumer preferences, environment, enrichment, animal behavior, behavior change.

Wells, D.L., L. Graham, and P.G. Hepper (2002). **The influence of auditory stimulation on the behaviour of dogs housed in a rescue shelter.** *Animal Welfare* 11(4): 385-393. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Abstract: This study explored the influence of five types of auditory stimulation (human conversation, classical music, heavy metal music, pop music, and a control) on the behaviour of 50 dogs housed in a rescue shelter. The dogs were exposed to each type of auditory stimulation for 4 h, with an intervening period of one day between conditions. The dogs' position in their kennels (front, back), their activity (moving, standing, sitting, resting, sleeping), and their vocalisation (barking, quiet, other) were recorded over 4 h at 10 min intervals during each condition of auditory stimulation. The dogs' activity and vocalisation were significantly related to auditory stimulation. Dogs spent more time resting and less time standing when classical music was played than when any of the other stimuli were played. Exposure to heavy

metal music encouraged dogs to spend significantly more of their time barking than did other types of auditory stimulation. Classical music resulted in dogs spending significantly more of their time quiet than did other types of auditory stimulation. It is suggested that the welfare of sheltered dogs may be enhanced through exposure to appropriate forms of auditory stimulation. Classical music appears particularly beneficial, resulting in activities suggestive of relaxation and behaviours that are considered desirable by potential buyers. This form of music may also appeal to visitors, resulting in enhanced perceptions of the rescue shelter's environment and an increased desire to adopt a dog from such a source.

Descriptors: animal care, behavior, philosophy and ethics, activity, animal welfare, auditory stimulation, captivity, moving, music, rescue shelter, resting, sitting, sleeping, standing, vocalization.

Wells, D.L., L. Graham, and P.G. Hepper (2002). **The influence of length of time in a rescue shelter on the behaviour of kennelled dogs.** *Animal Welfare* 11(3): 317-325. ISSN: 0962-7286.

NAL Call Number: HV4701.A557

Abstract: Animal rescue shelters provide temporary housing for thousands of stray and abandoned dogs every year. Many of these animals fail to find new homes and are forced to spend long periods of time in kennels. This study examined the influence of the length of time spent in a rescue shelter (< 1 month, 2-12 months, 1-5 years, > 5 years) on the behaviour of 97 dogs. The dogs' position in their kennels (front, back), their activity (moving, standing, sitting, resting, sleeping), and their vocalisation (barking, quiet, other) were recorded over a 4 h period at 10 min intervals. The dogs' behaviour was significantly related to the length of time the animals had spent in the rescue shelter. Dogs housed in the shelter for over five years spent more of their time at the back of their kennels, more time resting, and less time barking than dogs housed in the shelter for shorter periods of time. The age of the dog could not account for the significant results found, suggesting that environmental factors were responsible for the change in the dogs' behaviour. The findings suggest that lengthy periods of time spent in a captive environment may encourage dogs to behave in a manner that is generally considered unattractive by potential buyers. This may decrease the chances of such dogs being adopted, resulting in longer periods of time spent in the kennel environment and the possible development of further undesirable behaviours.

Descriptors: animal behavior, environmental factors, kennels, shelters, stray animals, duration, physical activity, vocalization, rest, age differences, animal welfare.

Wells, D.L. and P.G. Hepper (1998). **A note on the influence of visual conspecific contact on the behaviour of sheltered dogs.** *Applied Animal Behaviour Science* 60(1): 83-88. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(98\)00146-4](http://dx.doi.org/10.1016/S0168-1591(98)00146-4)

NAL Call Number: QL750.A6

Descriptors: kennel design, housing, single housing, rescue shelter, behavior, visual contact, animal welfare, animal shelters.

Wells, D.L. and P.G. Hepper (2000). **Prevalence of behaviour problems reported by owners of dogs purchased from an animal rescue shelter.** *Applied Animal Behaviour Science* 69(1): 55-65. ISSN: 0168-1591.

Online: [http://dx.doi.org/10.1016/S0168-1591\(00\)00118-0](http://dx.doi.org/10.1016/S0168-1591(00)00118-0)

NAL Call Number: QL750.A6

Abstract: This study examined the prevalence of behaviour problems exhibited by dogs within 4 weeks of acquisition from a rescue shelter in Northern Ireland. 1547 people who had purchased a dog from a rescue shelter in Northern Ireland were sent a postal questionnaire designed to collect information on the behaviours exhibited by their dog within the first month of acquisition. 556 people responded to the survey, representing a response rate of 37%. The majority of respondents (68.3%) reported that their dog exhibited a behaviour problem, the most common being fearfulness. Most of those respondents (89.7%) who returned their dog to the shelter did so because the animal exhibited behaviour that they considered undesirable. Male dogs showed more unacceptable behaviours than females, specifically inter-male aggression, sexual problems and straying tendencies. More stray dogs displayed undesirable behaviour than unwanted, specifically straying tendencies. Puppies were less likely to exhibit unacceptable behaviours than juveniles or adults, particularly fearfulness, sexual problems and straying tendencies. More juvenile dogs showed excessive activity and excessive barking than puppies or adults. More adult dogs displayed aggression towards other dogs than juveniles or puppies. Findings indicate that dogs purchased from rescue shelters do exhibit behaviour problems that may lead to their return. The number of dogs admitted or returned to rescue shelters with behaviour problems may be reduced by raising public awareness regarding the value of behaviour therapy and introducing behaviour therapy schemes to rescue shelters.

Descriptors: aggression, fearfulness, puppies, animal behavior, behavior problems, fearfulness, sex differences, age differences, aggressive behavior, stray animals, animal welfare, behavior modification, vocalization, hyperactivity, abnormal behavior, northern Ireland, destructiveness.

Wells, D.L. and P.G. Hepper (2001). **The behavior of visitors towards dogs housed in an animal rescue shelter.** *Anthrozoos* 14(1): 12-18. ISSN: 0892-7936.

NAL Call Number: SF411.A57

Abstract: The behavior of visitors towards dogs housed in rescue shelters has been subject to little research. This study explored the behavior of 76 visitors to a rescue shelter in Northern Ireland as they toured the dogs' kennels. The number of dogs

that visitors stopped to look at, the nature of all interactions that visitors initiated with the dogs and the outcome of the visitors' tour of the shelter, were examined. The influence of the visitors' sex and the size of the group touring the kennels, on the visitors' behavior was also explored. On average, the visitors stopped to look at 29% of the total number of dogs available for purchase. Dogs housed in cages closest to the shelter entrance were more likely to attract attention from the visitors than those housed further away. When they stopped to look at a dog, visitors spent an average of 70 seconds in front of the animal's cage. Thirty-one of the visitors initiated an interaction with a dog, which lasted for an average of 20 seconds. Three visitors purchased a dog at the end of their tour of the shelter. Individuals who purchased a dog spent significantly more time standing in front of their future pet's cage, and engaged in more interactions with this animal, than dogs that they did not purchase. The size of the group touring the shelter was significantly related to the visitors' behavior. Individuals touring the shelter alone stopped in front of more dogs' cages, spent more time in front of the dogs' enclosures, initiated more interactions, and purchased more dogs, than those visiting in pairs or groups. The visitors' sex was unrelated to their behavior. The findings suggest that visitors to rescue shelters only show an interest in a small proportion of dogs available for purchase. Elucidating exactly what factors influence visitors' perceptions of, and behavior towards, sheltered dogs may further our understanding as to why so many animals are overlooked for purchase every year..

Descriptors: animal housing, human behavior, kennels, shelters, visitors, dogs.

Wells, D.L. (2004). **A review of environmental enrichment for kennelled dogs, *Canis familiaris***. *Applied Animal Behaviour Science* 85(3-4): 307-317. ISSN: 0168-1591.

Online: <http://dx.doi.org/10.1016/j.applanim.2003.11.005>

NAL Call Number: QL750.A6

Abstract: Domestic dogs can be housed in a variety of confined conditions, including kennels, shelters and laboratories. Concern over the well-being of dogs housed in human care has prompted much research in recent years into the enrichment of environments for kennelled dogs. This paper highlights the findings and recommendations arising from this work. Two types of general enrichment method are discussed, namely animate (i.e. enrichment through the provision of social contacts with conspecifics and humans) and inanimate (i.e. enrichment through the provision of toys, cage furniture, auditory and olfactory stimulation). The benefits and, where relevant, possible disadvantages, to these various types of enrichment method are highlighted throughout.

Descriptors: animal care, behavior, animal welfare, animate enrichment, auditory stimulation, cage furniture, dog kennel, environmental enrichment, housing conditions, human contact, inanimate enrichment, olfactory stimulation, rescue shelter, social contact, toys.

Therapeutic and Working Dogs

Bussotti, E.A., E. Ribeiro Leao, D.M. Nascimento Chimentao, and C.P. Rodrigues Silva (2005). **Assistencia individualizada: “posso trazer meu cachorro?” [Care: can I bring my dog?]**. *Revista Da Escola De Enfermagem Da U S P* 39(2): 195-201. ISSN: 0080-6234.

Abstract: A case study aimed at knowing the perception of a teenager suffering from recurrent acute lymphocytic leukemia and of her mother regarding the visit of her pet dog during hospitalization, as well as at describing the experience as a nursing intervention. Data was obtained and organized through reports on the experience. Beneficial effects of such therapeutic action were observed, thus demonstrating that Animal Assisted Therapy may be extended to other clinical situations and should be the object of new investigations.

Descriptors: human-pet bonding, dogs, infection control methods, leukemia, visitors to patients.

DiSalvo, H., D. Haiduven, N. Johnson, V.V. Reyes, C.P. Hench, R. Shaw, and D.A. Stevens (2006). **Who let the dogs out? Infection control did: utility of dogs in health care settings and infection control aspects.** *American Journal of Infection Control* 34(5): 301-307. ISSN: 0196-6553.

Abstract: Research has substantiated that animals improve human health, both psychologically and physiologically. Therefore, healthcare facilities have begun to implement programs, such as the “Furry Friends Foundation,” that bring animals into the facility to improve the quality of life of patients. When implementing these programs, consideration must be given to potential adverse events such as phobias, allergies, and particularly the possibility of zoonotic disease transmission. Santa Clara Valley Medical Centre (SCVMC), a 600-bed county teaching hospital with specialized units (e.g., for burns, rehabilitation, and pediatric care), has implemented programs that incorporate animals into the healthcare setting. This facility allows three categories of dogs to interact with their patients: service dogs, therapy dogs, and pet visitation dogs by the “Furry Friends Foundation.” A blurring of the roles of the three categories of dogs occurred when these programs were put into place at SCVMC. The American with Disabilities Act (ADA) states that service animals cannot be prohibited from any area. For example, a “no pet allowed” policy could not apply to these animals. Proof of a person’s disability or proof of the service animal’s health or training cannot be required. The purpose of this project was to maintain these programs by clarifying the policies regarding animals, specifically dogs, in the healthcare setting. This had to take place to provide a safe and enjoyable environment

for the patients and the staff. A comprehensive table was developed to delineate the three categories of dogs and the corresponding policies. Therapy dogs and the visitation animals are more restricted than service dogs. Both therapy dogs and visitation dogs require identification and certification of health and are excluded from certain areas of the facility, including intensive care units and isolation rooms. By complying with the current policies and regulations, the risks from these programs can be minimized. Staff should be educated on the proper terminology and procedures to prevent a blurring of the categories and roles of these animals.

Descriptors: animals, domestic classification, disease transmission prevention and control, health facilities, infection control methods, dogs, health policy.

Hennessy, M., A. Morris, and F. Linden (2006). **Evaluation of the effects of a socialization program in a prison on behavior and pituitary-adrenal hormone levels of shelter dogs.** *Applied Animal Behaviour Science* 99(1/2): 157-171. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: This study examined outcomes of an ongoing socialization program for shelter dogs conducted at a local prison. Dogs residing at a Humane Society facility were assigned to either a “Control” or “Socialization” treatment. Dogs assigned to both treatments were administered a pretest at the Humane Society consisting of blood withdrawal for hormone analysis, assessment of responses to commands, and observation of behavior in a novel situation. Dogs assigned to the Socialization treatment were then transported to the prison where they lived with, and were trained by, inmate handlers. Dogs in the Control treatment remained at the Humane Society and received no explicit training. Three weeks later, dogs were administered a posttest identical in form to the pretest. Dogs provided the Socialization, but not Control, treatment exhibited significant improvement from pretest to posttest in compliance with commands. In a novel situation, Socialization dogs showed significantly less jumping on an unfamiliar human and vocalizing, and significantly more yawning, in the posttest relative to the pretest than did Control dogs. Whereas plasma cortisol levels did not vary from pretest to posttest in either group, ACTH levels unexpectedly increased with time in both groups. Moreover, cortisol and ACTH levels were significantly positively correlated with each other at the posttest, but not the pretest. These results provide evidence for positive behavioral outcomes of prison socialization programs for shelter dogs, as well as further support for the notion that shelter housing results in a dysregulation of the hypothalamic-pituitary-adrenal axis..

Descriptors: adrenal glands, animal behavior, corticotropin, hormonal control, hydrocortisone, pituitary hormones, social behavior, training of animals, animal rescue shelters, prison inmates, cortisol, corticotropin, neurosecretion.

Lane, D.R., J. McNicholas, and G.M. Collis (1998). **Dogs for the disabled: benefits to recipients and welfare of the dog.** *Applied Animal Behaviour Science* 59(1-3): 49-60. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: Dogs for the Disabled is an organisation recently established in the UK to provide trained assistance dogs to enhance the mobility and independence of people with physical disabilities. Fifty-seven recipients of a Dog for the Disabled (90% of all recipients) took part in a questionnaire survey to assess satisfaction with their dog, commitment to the dog's welfare, and other changes in their life brought about by obtaining their dog. Subjects reported an increased sense of social integration, enhancement to self-perceived health, and an affectionate, often supportive, relationship with their dog. Levels of satisfaction with the dog's work and the quality of the recipient-dog relationship were greater in subjects for whom the idea to have a dog was their own than in subjects who were influenced by other people to acquire a dog. These differences were small but statistically significant and may be a useful predictor in future applicants of the success of the working relationship.

Descriptors: working animals, physical disabilities, self perceived health, social integration, handicapped persons, questionnaires, correlation, physical activity, animal welfare .

Lucidi, P., N. Bernabo, M. Panunzi, P.D. Villa, and M. Mattioli (2005). **Ethotest: a new model to identify (shelter) dogs' skills as service animals or adoptable pets.** *Applied Animal Behaviour Science* 95(1/2): 103-122. ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: The paucity of dogs dedicated to animal-assisted therapy (AAT) for disabled people creates long waiting lists worldwide and compromises the health of the few certified animals by demanding too much work from them at times, thus jeopardizing their future as service dogs. In an attempt to obviate this situation, a mathematical model has been conceived to select animals endowed with a set of specific inborn skills from a population of sheltered dogs. The model is able to select dogs capable of creating a special bond with humans and able to work anywhere and with any human partner or team; it represents a rapid, inexpensive and coherent method and has been validated after 1 year of observation. The algorithm consists of three steps. Step A is a test assessing the aggressiveness and temperament of animals and selection occurs based on a binary criterion (yes or no). Step B is a test comprising three items and selects animals able to interact with humans; dogs have to fulfil two conditions to pass on to Step C. Step C is a test evaluating the animal's ability to respond appropriately to easy commands (trainability) given by different partners; dogs have to fulfil two interrelated conditions judged more flexibly than in test B. The aims of the Ethotest are: (a) to prevent aggressive animals from entering

animal-assisted activity and/or Therapy programmes; (b) to select dogs with the right aptitude and especially to restrict selection to dogs that offer consistent responses; (c) to include both male and female purebreds or mix breeds older than 1 year of age; (d) to identify animals able to work with different partners. Moreover, the aim of this contribution is to share with the scientific community an easy method to select shelter dogs as safe companion animals..

Descriptors: algorithms, animal behavior, pets, tests, temperament, aggression, human-animal relations, training.

Miura, A., J.W.S. Bradshaw, and H. Tanida (2002). **Attitudes towards assistance dogs in Japan and the UK: a comparison of college students studying animal care.**

Anthrozoos 15(3): 227-242. ISSN: 0892-7936.

NAL Call Number: SF411.A57

Abstract: Previous studies have indicated that the primary problems associated with ownership of assistance dogs lie not with the dogs themselves, but with people's attitudes and behaviour towards them, including interference with the dog while it is working and denial of access to public facilities. However, there has been little systematic study of the attitudes of the general public towards assistance dogs. Our study was carried out to compare the knowledge and attitudes of young people in Japan and the UK towards assistance dogs in order to provide a basis for the future development of assistance dog provision in Japan. Forty-four Japanese and 42 British college students completed questionnaires in which they were asked about their knowledge of, and attitudes towards, assistance dogs. A similar percentage (about 20%) of the British and Japanese students reported that they were unhappy about allowing the dogs access to places where food is sold. However, the British participants were more likely to be positive about the idea of using dogs to assist people with disabilities than were the Japanese. Attitudes towards assistance dogs varied among the Japanese students. Some considered assistance dogs happier than pet dogs, because pet dogs are sometimes neglected, while others expressed sympathy for assistance dogs because they are strictly trained and exploited by humans. When asked their opinions about the idea of using dogs as assistance dogs, 98% of the British students, but only 41% of the Japanese students, agreed with the idea. Our results suggest that perception of assistance dogs, and also understanding of the well-being of people with disabilities, were both more well-informed and realistic among the British students than among the Japanese students..

Descriptors: attitudes, behavior, guide dogs, students, surveys, dogs.

Orlowski, T., T. Jezierski, and T. Bednarek (2001). **The behaviour of water-working dogs during a simulated rescue of drowning persons.** *Animal Science Papers and Reports*

19(2): 157-166. ISSN: 0860-4037.

NAL Call Number: SF1.A53

Abstract: The paper presents an unusual, documented research on behaviour of water-working dogs during a simulated rescue of drowning humans evaluated qualitatively and quantitatively. During the rescue, humans grasped a special harness worn by the dogs. Six dogs (two Newfoundlands, three German Shepherds and one Labrador Retriever) were used. Variation of the time and speed of particular phases of the rescue action were analysed depending on dog, distance to the drowning person (25, 40 and 80 m) and water and air temperature during the action. The dogs differed significantly in their manner of entering the water ($P<0.01$). Only one dog always jumped into the water immediately after receiving the command. The other dogs needed extra encouragement or prompting in 28-83% of tests, mostly consisting of the handler throwing an object into the water to persuade the dog to enter the water. Two dogs on one occasion each refused to enter the water unless behind the handler in a boat. The manner and time of entering the water was significantly affected by the distance to the drowning person ($P<0.01$). At longer distances to the drowning man, the dogs entered the water less willingly and after longer hesitation. The dogs differed in the time taken to tow the rescued person to land ($P=0.025$). Of all the breeds studied, German Shepherds tended to swim faster both when swimming towards the drowning person and when towing the person to land. The mean swimming speed when towing to land was considerably lower, compared to that when swimming towards the drowning person. Unexpectedly, the lowest swimming speed was observed at the distance of 25 m between the drowning person and the water edge. The effect of air and water temperature on swimming speed was inconsistent: mean speed was higher at higher air temperature and lower at higher water temperature. The experiment demonstrated that dogs can be useful during a water-rescue action.

Descriptors: behavior, air temperature, behavior, drowning, rescue, swimming speed, water temperature.

Ruusila, V. and M. Pesonen (2004). **Interspecific cooperation in human (*Homo sapiens*) hunting: the benefits of a barking dog (*Canis familiaris*).** *Annales Zoologici Fennici* 41(4): 545-549. ISSN: 0003-455X.

NAL Call Number: SF84.A56

Abstract: The first wild animal humans domesticated was the wolf (*Canis lupus*). The benefits of dog presence for human hunting success is often mentioned as a probable factor initiating the domestication of the wolf. We compared the per-hunter moose (*Alces alces*) hunting success of four hunter groups of different sizes with and without a dog. Groups with a dog had a higher hunting success for every group size. The difference was most pronounced for the smallest group (< 10 hunters) - hunters with a dog obtained 56% more prey than those without a dog. Indeed, the mean hunting success was the highest for the smallest groups with a dog. Among larger groups, hunting success was independent of the group size regardless of whether or not a dog was present. In groups over ten hunters, hunting success correlated with

the number of dogs. The benefit of hunting with a dog had a density-dependent pattern: the benefit increased when moose density was low. Our results give quantitative support to the hypothesis that the benefits of cooperative hunting was a potentially important factor in the wolf domestication process.

Descriptors: animal care, anthropology, hunting, wolf domestication, barking, density dependent pattern, group size, hunting success, interspecific cooperation.

Schminke, A. and G. Mobius (1998). **Schlittenhundesport unter Tierschutzgesichtspunkten. [Animal welfare aspects of Sled dog racing .].** *Deutsche Tierärztliche Wochenschrift* 105(3): 130-133. ISSN: 0341-6593.

NAL Call Number: 41.8 B45

Abstract: Transport, housing and the dimensions of strain during training and race are important aspects of animal welfare. The race veterinarian has a great responsibility. He is responsible for the treatment of injured dogs and he has to give advice on all medical and animal welfare questions. The presence of the veterinarian during the entire race is very important. These veterinarians should have special knowledge of small animals and of sled dogs in particular. There should be health checks of sled dogs before and after racing similar to horse sport tournaments.

Descriptors: racing animals, animal care, animal transportation, animal welfare, housing, sled dog racing, veterinary health, check ups.

Language of Text: German, Summary in English.

Slabbert, J.M. and O.A.E. Rasa (1997). **Observational learning of an acquired maternal behaviour pattern by working dog pups: an alternative training method?** *Applied Animal Behaviour Science* 53(4): 309-316 . ISSN: 0168-1591.

NAL Call Number: QL750.A6

Abstract: German shepherd pups from untrained bitches and bitches trained in the location of narcotics were either separated from their mothers at 6 weeks (standard raised) or at 3 months of age (extended maternal care). Pups with extended maternal care which were allowed to observe their trained mothers locating and retrieving a sachet of odour-producing narcotic between the ages of 6 and 12 weeks performed the same task significantly better than non-exposed pups when tested at the age of 6 months, without further reinforcement during the interim period. This difference in performance was independent of the duration of maternal care or maternal origin of the pups and was attributed to differences in early experience acquired through observational learning.

Descriptors: behavior, veterinary medicine, acquired maternal behavior pattern, behavior, breed German shepherd, drug sniffing bitch, duration, maternal care, narcotics location training, observational learning, untrained bitch, working dog performance.

Stohrer, M., B. Hammer, R. Hammer, B. Brincker, and M. Stangassinger (2002). **Oxidativer Stress infolge extremer physischer Belastung. Teil 1: Genese, klinische Relevanz sowie Untersuchungen an Vitamin-E-supplementierten Schlittenhunden.** [Oxidative stress following extreme physical stress. Part 1: Genesis, clinical relevance and studies on vitamin E-supplemented sled dogs.]. *Tierärztliche Praxis* 30(4): 266-270. ISSN: 1434-1239.

NAL Call Number: SF603.V433

Abstract: An experimental study was performed in order to investigate oxidative stress in sled dogs after short races, which can be ameliorated by supplementation of the antioxidant vitamin E. Potentially occurring organ damages should be recorded in order to assess the clinical relevance. Therefore in blood samples, drawn before and after the race, the antioxidative status (TEAC, vitamin C, vitamin E), a radical marker (HNE-modified proteins) and resulting organ damages (organ-specific enzymes) were measured. The consumption of antioxidants (decrease of TEAC, vitamin C and E) indicates a significant oxygen radical production of the dogs during the race, confirmed by an increase of the radical marker HNE-mod. proteins. The rise of CK- and AST activity proves the damage of skeletal muscles. The less pronounced rise of CK- and AST activity in the vitamin E-supplemented dogs supports the hypothesis, that during extreme physical stress a significant amount of oxygen radicals is liberated and especially damages in skeletal muscles can be ameliorated by the antioxidant vitamin E.

Descriptors: oxidative stress, working dogs, racing dogs, antioxidants, ascorbic acid, creatine kinase, damage, enzyme activity, glutamate dehydrogenase, hematocrit, lactic acid, organs, oxidation, proteins, skeletal muscle, stress, vitamin E.

Language of Text: German, Summary in English.

Urban, J.E. and A. Broce (1998). **Flies and their bacterial loads in greyhound dog kennels in Kansas.** *Current Microbiology* 36(3): 164-170. ISSN: 0343-8651.

NAL Call Number: QR1.C78

Abstract: Breeders of Greyhound dogs traditionally feed racing animals and nursing bitches raw meat, and that meat generally is obtained frozen from commercial renderers. Previous studies have shown that the rendered meat is frequently contaminated with enteric bacteria, including *Salmonella* spp., and that during thawing the rendered meat is exposed to filth flies common in dog kennels. Nursing Greyhound pups tend to experience a high morbidity and mortality from intestinal infections, and the authors attempted to determine whether enterics could be spread to pups through contaminated flies. At intervals during 1995 and 1996, flies were trapped or were net-collected from 10 dog breeding kennels in the region around Abilene, Kansas, USA. Trapped flies were identified and counted to determine population numbers, and netted flies were cultured in tetrathionate broth and streaked to medium selecting for *Salmonella* sp. and other lactose-negative Gram-negative bac-

teria. The relative numbers of different fly species varied with the sampling method, but traps and sweep nets produced similar proportions of the different fly species. Blowflies (*Cochliomyia macellaria*, *Phormia regina*, *Phaenicia sericata* [*Lucilia sericata*] and *P. cuprina* [*L. cuprina*]) were twice as likely to be contaminated with enteric bacteria as any other fly (flesh flies [*Sarcophagidae*], house flies [*Musca domestica*], stable flies [*Stomoxys calcitrans*] and others). The most common enteric bacteria found were *Proteus* spp., followed by *Providencia* spp., *Pseudomonas* spp. and *Salmonella* spp. The incidence of *Salmonella* and *Proteus* spp. seemed to correlate more with accessibility of flies to dog excrement than to rendered meat. The apparent high incidence of enteric contamination of filth flies clearly implicates them as vectors of enteric diseases in kennels.

Descriptors: Greyhound dogs, kennels, dog feces, disease vectors, puppies, dog foods, bacteria, enteric diseases, *Salmonella*, *Proteus*, *Providencia*, *Pseudomonas*, *Cochliomyia macellaria*, *Phormia regina*, *Lucilia sericata*, *Lucilia cuprina*, *Musca domestica*, *Stomoxys calcitrans*, *Sarcophagidae*, *Muscidae*, *Calliphoridae*.

Weiss, E. (2002). **Selecting shelter dogs for service dog training.** *Journal of Applied Animal Welfare Science* 5(1): 43-62. ISSN: 1088-8705.

NAL Call Number: HV4701.J68

Abstract: Service dogs are an essential aid to persons with disabilities, providing independence, mobility, and improved self-esteem. Because of these proven benefits, the growing use of service dogs is creating a demand and supply crisis. One major cause is the 50% average dropout rate for dogs selected for training. Weiss and Greenber (1997) recently found that a dog, successful on the most commonly used selection test items, was as likely to be either a poor or a good candidate for service work. The experiment presented here evaluated test items developed by the author in 15 years of experience with dogs. The test items were administered to 75 dogs from the Kansas Humane Society. Once tested, the dogs received obedience and retrieval training. The experiment assessed each dog on behavior over 5 weeks of training versus performance on each selection test item. A subset of the selection items, combined in a regression analysis, accounted for 36.4% of the variance with $R=0.603$. This research also revealed a reliable test for dog aggression without risking injury to dog or tester. Items for testing included fear, motivation, and submission. Another set of selection items reliably predicted the trait of "high energy" commonly described as "high strung." Future research should involve investigating the effectiveness of both cortisol levels and blood pressure in predicting traits to help strengthen the predictive value of the tool and then testing on dogs trained to be full service dogs.

Descriptors: animal husbandry, agriculture, behavior, philosophy and ethics, regression analysis, mathematical and computer techniques, kansas humane society, aggression, animal shelter, blood pressure, disability, fear, motivation, obedience training, retrieval training, self esteem, service dog work, submission.

Zoonoses

Costa, C.H.N., R.B.B. Gomes, M.R.B. Silva, L.M. Garcez, P.K.S. Ramos, R.S. Santos, J.J. Shaw, J.R. David, and J.H. Maguire (2000). **Competence of the human host as a reservoir for *Leishmania chagasi***. *Journal of Infectious Diseases* 182(3): 997-1000. ISSN: 0022-1899.

NAL Call Number: 448.8 J821

Abstract: The failure of control programmes for visceral leishmaniasis (VL) that depend on elimination of infected dogs suggests that other reservoir hosts may participate in the transmission cycle. To determine whether persons infected with *Leishmania chagasi* can infect the vector sand fly, laboratory-reared *Lutzomyia longipalpis* were allowed to feed on Brazilian subjects with active, cured, and asymptomatic VL and on asymptomatic residents of houses of persons with active VL. Of 3747 insects that had fed, 26 acquired infection from 11 of the 44 persons with active VL, but none acquired infection from the 137 asymptomatic persons. Among persons <4 years old with active VL, a history of diarrhoea and higher peripheral blood neutrophil counts were independent predictors of infectivity. Further experiments using larger numbers of insects are necessary to evaluate the reservoir competence of persons with asymptomatic infections, who represent a large segment of the population of several Brazilian cities.

Descriptors: disease transmission, human diseases, infection, leishmaniasis, *Leishmania infantum chagasi*, *Lutzomyia longipalpis*.

Costa CH, Stewart JM, Gomes RB, Garcez LM, Ramos PK, Bozza M, Satoskar A, Disanayake S, Santos RS, Silva MR, Shaw JJ, David JR, and Maguire JH. (2002). **Asymptomatic human carriers of leishmania chagasi**. *American Journal of Tropical Medicine and Hygiene* 66(4): 334-337. ISSN: 0002-9637.

NAL Call Number: 448.8 Am326

Abstract: In Brazil, programs based on elimination of infected dogs have not curtailed the spread of visceral leishmaniasis (VL), suggesting that other reservoirs of infection exist. Persons with active VL can infect the sand fly vector, but in endemic areas, persons with asymptomatic infections, whose infectivity to sand flies is unknown, are far more numerous. In this study, a polymerase chain reaction-based assay detected kinetoplast DNA of *Leishmania chagasi* in the blood of eight of 108 asymptomatic persons living with patients with recently diagnosed VL. These eight persons had low or unmeasurable levels of IgG antibodies to *Leishmania*, demonstrating the insensitivity of serology for subclinical infection. All eight persons had positive leishmanin skin test results, as did 70% of persons living in households of

persons with active VL. Even if a small proportion of such asymptomatic persons are infective to sand flies, they represent a formidable reservoir of infection in endemic areas.

Descriptors: parasitology, visceral leishmaniasis, parasitic disease, polymerase chain reaction, genetic techniques, laboratory techniques, polymerase chain reaction based assay, asymptomatic human carriers, infection reservoirs.

DiSalvo, H., D. Haiduvan, N. Johnson, V.V. Reyes, C.P. Hench, R. Shaw, and D.A. Stevens (2006). **Who let the dogs out? Infection control did: utility of dogs in health care settings and infection control aspects.** *American Journal of Infection Control* 34(5): 301-307. ISSN: 0196-6553.

Abstract: Research has substantiated that animals improve human health, both psychologically and physiologically. Therefore, healthcare facilities have begun to implement programs, such as the “Furry Friends Foundation,” that bring animals into the facility to improve the quality of life of patients. When implementing these programs, consideration must be given to potential adverse events such as phobias, allergies, and particularly the possibility of zoonotic disease transmission. Santa Clara Valley Medical Centre (SCVMC), a 600-bed county teaching hospital with specialized units (e.g., for burns, rehabilitation, and pediatric care), has implemented programs that incorporate animals into the healthcare setting. This facility allows three categories of dogs to interact with their patients: service dogs, therapy dogs, and pet visitation dogs by the “Furry Friends Foundation.” A blurring of the roles of the three categories of dogs occurred when these programs were put into place at SCVMC. The American with Disabilities Act (ADA) states that service animals cannot be prohibited from any area. For example, a “no pet allowed” policy could not apply to these animals. Proof of a person’s disability or proof of the service animal’s health or training cannot be required. The purpose of this project was to maintain these programs by clarifying the policies regarding animals, specifically dogs, in the healthcare setting. This had to take place to provide a safe and enjoyable environment for the patients and the staff. A comprehensive table was developed to delineate the three categories of dogs and the corresponding policies. Therapy dogs and the visitation animals are more restricted than service dogs. Both therapy dogs and visitation dogs require identification and certification of health and are excluded from certain areas of the facility, including intensive care units and isolation rooms. By complying with the current policies and regulations, the risks from these programs can be minimized. Staff should be educated on the proper terminology and procedures to prevent a blurring of the categories and roles of these animals.

Descriptors: animals, domestic classification, disease transmission prevention and control, health facilities, infection control methods, dogs, health policy.

Feliciangeli, M.D., M.B. Mazzarri, S.S. Blas, and O. Zerpa (2003). **Control trial of *Lutzomyia longipalpis* s.l. In the island of Margarita, Venezuela.** *Tropical Medicine and International Health* 8(12): 1131-1136. ISSN: 1360-2276.

NAL Call Number: RC960

Abstract: The incidence of the American visceral leishmaniasis (AVL) in the Island of Margarita, a major tourist centre in Venezuela, has been increasing between 1998 and 2001. *Lutzomyia longipalpis* s.l. is the recognized vector, which was found naturally infected with *Leishmania* spp, indistinguishable from the parasites recovered from dogs and children. In 1999-2000, we conducted a control trial in Santa Ana del Valle and Las Cabrerías, which have similar epidemiological and ecological conditions. The trial was based on intradomestic residual spraying of lambda-cyhalotrin, E.C., 25 mg/m² and spatial fogging of fenitrothion around the houses at 30 g/ha. Sandfly abundance was recorded using Centers for Disease Control (CDC) traps indoors and outdoors. We found significantly reduced sandfly populations in the target locality. Wall bioassays showed that the residual effect of the insecticide lasts for about 3 months. We believe that indoor spraying with lambda-cyhalotrin three times a year, at a dose slightly greater than 25 mg/m², might reduce the *L. longipalpis* s.l. population to a level low enough for achieving a significant reduction of the indoor transmission, thus protecting small children from the disease.

Descriptors: epidemiology, population studies, parasitology, vector biology, American visceral leishmaniasis, AVL, infectious disease, parasitic disease, wall bioassay, bioassay techniques, laboratory techniques, disease incidence.

Felix, M., P. Tallon, M. Salavert, V. Navarro, J.R. Breton, C. Perez Belles, and M. Gobernado (2003). **Bacteriemia por *Pasteurella* spp.: una entidad infrecuente durante los últimos 8 años en nuestro centro. [Bacteremia due to *Pasteurella* spp.: a rare process in our hospital over the last 8 years.]** *Enfermedades Infecciosas y Microbiología Clínica* 21(7): 334-339 . ISSN: 0213-005X.

Abstract: OBJECTIVES: To review and update the epidemic and clinical knowledge concerning disseminated blood disease caused by *Pasteurella* species in our area. METHODS: Retrospective study of *Pasteurella* species bacteremia (PSB) episodes occurring in patients attended from January 1994 to December 2001 in a single tertiary hospital. RESULTS: Among the 31 clinical samples remitted to the Microbiology Laboratory in which a species of *Pasteurella* was identified, 5 (16%) corresponded to positive blood cultures in 5 patients. *Pasteurella multocida* was the predominant species, identified in 70% of all isolations and all but one positive blood culture. All the patients were adults over 50 years old and all had underlying illnesses causing comorbidity or some degree of immunocompromise, with cardiovascular and hypertensive conditions being the most frequent; only one patient had liver cirrhosis. In all cases, except one, contact or coexistence with dogs or cats was documented.

The clinical presentation of PSB was non-specific and only two episodes were related with a possible focal, soft-tissue origin. There were no serious complications, such as septic shock, organ failure or invasive disease (meningitis or endocarditis). All patients cured with antimicrobial treatment, although surgical debridement of infected bite wounds was required in two cases. The betalactams and other families of antibiotics showed excellent in vitro activity against the five strains of *Pasteurella* isolated. **CONCLUSIONS:** PSB occurred in adult patients having a wide range of underlying illnesses and comorbidity factors. Most of them had contact with pets, though traumatic lesions were not present in all cases. Clinical presentation did not differ from other types of severe sepsis. Susceptibility and outcome of primary treatment with penicillins and other betalactams shows that they are still appropriate therapy. More emphasis should be placed on preventive measures related to care and hygiene among individuals with pets.

Descriptors: blood disease, sepsis, *Pasteurella* spp., human, pet ownership, immunocompromised, treatment.

Ghorbel, A., S. Zrelli, S. Haddad, A. Ghram, A. Chabchoub, F. Landoulsi, and M.B. Ayed (2000). **Profils serologique et hematologique de l'ehrlichiose canine et humaine dans les chenils de Tunis et Bizerte (Tunisie).** [Serological and haematological survey of canine and human ehrlichiosis in the kennels of Tunis and Bizerte (Tunisia).]. *Revue De Medecine Veterinaire* 151(5): 429-436.

NAL Call Number: SF604.R48

Abstract: In a survey of 153 dogs and 195 dog owners in Tunisia, the seroprevalence of ehrlichiosis (*Ehrlichia canis* or *E. chaffeensis*) was 68.62% in dogs and 4.1% in owners. In the seropositive dogs, thrombocytopenia was the most frequently observed abnormality (63.3%).

Descriptors: seroprevalence, thrombocytopenia, surveys, dogs.

Language of Text: French, Summary in English.

Guglielmone, A.A., A. Estrada Pena, A.J. Mangold, D.M. Barros Battesti, M.B. Labruna, J.R. Martins, J.M. Venzal, M. Arzua, and J.E. Keirans (2003). **Amblyomma aureolatum (pallas, 1772) and amblyomma ovale koch, 1844 (acari: ixodidae): hosts, distribution and 16s rdna sequences.** *Veterinary Parasitology* 113(3-4): 273-288. ISSN: 0304-4017.

NAL Call Number: SF810.V4

Abstract: DNA sequences of *Amblyomma aureolatum* (Pallas, 1772) and *Amblyomma ovale* Koch, 1844 were obtained to determine genetic differences between these tick species. Collections of these species are discussed in relation to distribution and hosts. Seven ticks collections (four from Brazil, one from Argentina, one from Uruguay and one from USA) house a total of 1272 *A. aureolatum* (224 males, 251 females, 223 nymphs and 574 larvae) and 1164 *A. ovale* (535 males, 556 females,

66 nymphs and 7 larvae). The length of the sequenced mitochondrial 16S rRNA gene fragment for *A. aureolatum* was 370 bp and for *A. ovale* was 373 bp. The DNA sequence analysis showed a 13.1% difference between the two species. Apart from one male *A. ovale* found on a toad, all adult ticks were found on mammals. The majority of adult specimens of both tick species were removed from Carnivora (96.1 and 84.3% of *A. aureolatum* and *A. ovale*, respectively), especially from dogs (53.1% of *A. aureolatum*, and 46.4% of *A. ovale*). Collections on wild Canidae were higher for *A. aureolatum* (23.3%) than for *A. ovale* (7.1%). On the other hand, collections of *A. ovale* adults on wild Felidae were higher (18.3%) than findings of *A. aureolatum* (9.2%). The contribution of other mammalian orders as hosts for adults of *A. aureolatum* and *A. ovale* was irrelevant, with the exception of Perissodactyla because Tapiridae contributed with 13.0% of the total number of *A. ovale* adults. Adults of both tick species have been found occasionally on domestic hosts (apart of the dog) and humans. Most immature stages of *A. aureolatum* were found on Passeriformes birds, while rodents and carnivores were the most common hosts for nymphs and larvae of *A. ovale*. *A. aureolatum* has been found restricted to the Neotropical region, covering the eastern area of South America from Uruguay to Surinam, including northeastern Argentina, eastern Paraguay, southeastern Brazil and French Guiana. *A. ovale* showed a distribution that covers the Neotropical region from central-northern Argentina throughout the Neotropics into the Nearctic region of Mexico with a few records from the USA, also with collection sites in Paraguay, Bolivia, most Brazilian states, Peru, Ecuador, French Guiana, Surinam, Guyana, Trinidad & Tobago, Venezuela, Colombia, Panama, Costa Rica, Nicaragua, Belize, Guatemala and several states of Mexico.

Descriptors: biogeography, population studies, molecular genetics, parasitology, DNA sequence analysis, genetic techniques, laboratory techniques, genetic differences, host preferences, species distribution.

Hankenson, C. (2003). **The 3 R's for laboratory animal zoonoses** . *Contemporary Topics in Laboratory Animal Science* 42(2): 66, 68, 70, 74. ISSN: 1060-0558.

NAL Call Number: SF405.5.A23

Descriptors: zoonotic disease, laboratory animals , occupational health and safety, biomedical research, 3Rs, emerging zoonoses, personal protective equipment, handling animals.

Islam, M.K., S.C. Basak, S. Majumder, S.A. Sarder, A.W.M.S. Islam, and M.M.H. Mondal (2003). **Cystic echinococcosis in domestic ruminants in Cox's bazar of Bangladesh**. *Pakistan Journal of Scientific and Industrial Research* 46(4): 251-254. ISSN: 0030-9885 .

NAL Call Number: 475 P174

Abstract: This investigation was carried out to describe the local epidemiological

pattern of cystic echinococcosis among the indigenous domestic ruminants in the Cox's Bazar district of Bangladesh. Home visits and family interviews revealed several socio-economic and cultural characteristics which are thought to be involved in the transmission cycle and widespread occurrence of cystic echinococcosis in the area. Fecal examination of stray and house dogs showed high infection levels (50.65%) with *Echinococcus granulosus*. A significantly higher ($p < 0.00$) prevalence of cystic echinococcosis was recorded in sheep (52.11%) than buffaloes (36.11%), cattle (30.62%) and goats (14.73%). The values of chi-square test and regression-coefficient analysis strongly indicate that age is an important risk factor of being higher infestation with cystic echinococcosis. While sex had no influence on the prevalence of the disease. Lungs of all ruminant hosts were the most common predilection site for *Echinococcus* cysts, liver ranked second, followed by spleen, kidneys and heart. Fertility rate of the cysts was recorded high in sheep (65.43%) than buffaloes (16.33%), goats (14.80%) and cattle (8.11%). The high level of infection with cystic echinococcosis in domestic ruminants and dogs suggests that there is an urgent need for control measure against the disease in the Cox's Bazar area.

Descriptors: animal husbandry, agriculture, epidemiology, population studies, parasitology, veterinary medicine, cystic echinococcosis, parasitic disease, epidemiology, chi square test, mathematical and computer techniques, regression coefficient analysis, mathematical and computer techniques, age differences, cultural characteristics, fertility rate, infection risk factors, socio economic characteristics, transmission cycle.

Itoh, N., N. Muraoka, M. Aoki, and T. Itagaki (2003). **Prevalence of *Strongyloides* spp. infection in household dogs.** *Kansenshogaku Zasshi* 77(6): 430-435. ISSN: 0387-5911.

Abstract: A total of 1,505 household dogs were investigated for the prevalence of *Strongyloides* spp. infection by fecal examination in relation to their fecal conditions, rearing environments, origins, age, sex and breed. *Strongyloides* spp. infection was demonstrated in 29 of 1,505 (1.93%) dogs. *Strongyloides stercoralis* was detected in 28 dogs, and *Strongyloides planiceps* was detected in one dog. The rate of *Strongyloides* spp. infection was higher in dogs reared indoors, originated from pet shops/breeding kennels and aged 1-6 months. The infected rate was higher in dogs excreting soft feces. No significant sex-related difference was observed in *Strongyloides* spp. infection. The rate was high in Pomeranians and low in mongrels. The detection of *S. stercoralis* in dogs reared indoors will involve a serious problem in public health, because the parasite has zoonotic potential. It suggests that a positive sanitary instruction against a dog's owner and a worker in pet shops/breeding kennels seems necessary for prevention of transmission from dogs to humans. Furthermore, the reliable treatment for dogs infected with *S. stercoralis* seems to be important.

Descriptors: household dogs, *Strongyloidiasis*, fecal examination, isolation, purification, zoonoses.

Litonjua, A.A., D.K. Milton, J.C. Celedon, L. Ryan, S.T. Weiss, and D.R. Gold (2002). **A longitudinal analysis of wheezing in young children: the independent effects of early life exposure to house dust endotoxin, allergens, and pets.** *Journal of Allergy and Clinical Immunology* 110(5): 736-742. ISSN: 0091-6749.

NAL Call Number: 448.8 J8236

Abstract: A study was conducted to examine the longitudinal association of exposure to house dust endotoxins (HDE) in the older siblings of infants who had wheezing due to early life endotoxin exposure. 226 siblings younger than 5 years old were identified among 499 families recruited between 1994 and 1996 in Boston, Massachusetts, USA. 173 had information on HDE levels in the home. Dust collection was performed on home visits and the presence of endotoxins and allergens were analysed. The presence of a cat or dog in the home was also assessed. They were followed up after 14, 22, 34 and 46 months. 190 siblings (84.1%) had information at all 5 time points. Longitudinal univariate relationships, time trends and interaction analyses, multivariate models, and logistic regression analyses were constructed. HDE concentrations ranged from 9.4 to 486.0 EU/mg. In a subset of 53 homes with 2 HDE measurements performed 8 months apart, HDE levels were found to be significantly correlated (Pearson correlation coefficient=0.55, $P=0.001$, interclass correlation coefficient=0.45). Homes with a dog had higher geometric mean endotoxin levels than homes without a dog (95.80 vs. 77.80 EU/mg, respectively), but this difference did not reach statistical significance ($P=0.2$). There was no difference in endotoxin levels between homes with and without a cat (81.28 vs. 79.00 EU/mg, respectively; $P=0.8$). Exposure to high levels of HDE is associated with increased risk for wheezing early in life but the risk rapidly diminishes. The analyses suggest that this exposure might protect against further episodes of wheezing as the children get older. The exposure to high levels of cat allergen and having a dog in the home are inversely associated with wheezing, independent of the effects of HDE exposure.

Descriptors: allergens, children, endotoxins, exposure, house dust, human diseases, pets, cats, dogs.

Mancianti, F. and S. Nardoni (2004). **Susceptibility of *microsporium canis* isolated from domestic animals against a commercially available enilconazole in fumigant form.** *Journal De Mycologie Medicale* 14(2): 73-74. ISSN: 1156-5233.

Abstract: The aim of the present paper was to evaluate the antifungal effectiveness of a commercially available enilconazole in fumigant form. The antifungal effectiveness of the disinfectant was evaluated against 140 spores (in clinical animals hair samples) and 72 mycelia samples of *M. canis* from infected pets. One hundred-thirty-one hair specimens Out of 140 (93.6%) and 66 out of 72 (91.7%) subcultures from mycelia were inactivated after treatment. The statistical analysis did not reveal significant differences between spore and mycelia sensitivity. Sensitivity of both arthrospores and mycelia versus enilconazole was evaluated in order to identify possible differ-

ences in the resistance of the dermatophyte in its different forms. At the best of our knowledge such a comparison has not been reported. Infected animals can be massive airborne reservoir of viable fungal particles. Enilconazole in the fumigant form is effective also when mixed with several disinfectants including quaternary ammonium compounds, formaldehyde or hydrogen peroxide, even though Such combinations can cause allergies. The use of this product together with other disinfectants could be useful in the management of infected households.

Descriptors: infection, pharmacology, public health, allied veterinary medicine, *Microsporium canis* infection, fungal disease, drug therapy, transmission, microsporium canis culture, culturing techniques, laboratory techniques.

Maroli, M. and C. Khoury (2004). **Prevenzione e controllo dei vettori di leishmaniosi: attuali metodologie. [Prevention and control of leishmaniasis vectors: current approaches.]**. *Parassitologia* 46(1-2): 211-215. ISSN: 0048-2951.

NAL Call Number: 436.8 P212

Abstract: Phlebotomine sandflies (Diptera: Psychodidae) are the suspected or proven vectors of *Leishmania* spp. in at least 88 countries, including over 40 *Phlebotomus* species in the Old World and a further 30 belonging to the genus *Lutzomyia* in the New World. In recent years, both cutaneous (CL) and zoonotic visceral leishmaniasis (ZVL) have become increasingly prevalent in urban areas, including large Latin American cities. A similar trend has been recorded in all Mediterranean areas during the last decade. Based on mathematical models, insecticidal control of sandflies appears to represent a more effective way of reducing *Leishmania infantum* transmission than the present strategy of culling infected dogs in Latin America as well as being more acceptable to the human population. Since man is a dead-end host of most *Leishmania* species, treatment of existing human cases generally does not affect transmission. Interruption of the cycle by vector control may offer a cheaper, more practical solution to treatment and improved knowledge of the alternatives available could lead to preventative measures being undertaken in more leishmaniasis foci. In this note a review of current knowledge on sandfly control is presented. Different measures to control phlebotomine sandflies, including residual spraying of dwellings and animal shelters, insecticide treated nets, application of repellents/insecticides to skin or to fabrics and impregnated dog collars are discussed. Although effective in urban areas with high concentrations of sandflies, residual spraying of insecticides is no often longer tenable in most situations. In rural areas where dwellings are more dispersed and surrounded by large, untargeted "reservoir" populations of sandflies, residual spraying of houses may be both impractical for logistic reasons and ineffective. Actually, this control measure depends on the availability of a suitable public health infrastructure, including adequate supplies of insecticide, spraying equipment and trained personnel. Ideally such personnel should be trained in insecticide application, monitoring techniques and interpretation of sampling data, as well as

safety techniques. To date reports of resistance refer to one insecticide (DDT) in only three species (*Phlebotomus papatasi*, *P. argentipes* and *Sergentomyia shorti*) in one country (India), although there are reports of increased tolerance to this compound in several countries. Fortunately the insects remain susceptible to all the major insecticidal groups. Impregnated bednets may offer the best solution in rural areas where transmission is largely intradomestic. This measure has the advantage that it can be employed at the individual household level and affords collateral benefits such as privacy and control of other biting insects such as mosquitoes, fleas and bedbugs. Sandfly larvae are generally difficult to find in nature so control measures that act specifically against immatures are not feasible, although the effectiveness of a few biological and chemical agents has been demonstrated in laboratory evaluations. In ZVL foci, where dogs are the unique domestic reservoir, a reduction in *Leishmania* transmission would be expected if we could combine an effective mass treatment of infected dogs with a protection of both healthy and infected dogs from the sandfly bites. Laboratory and field evaluations have shown that impregnated dog collars and topical application of insecticides could protect dogs from most sandfly bites by means of both anti-feeding and killing effect of the pyrethroids used.

Descriptors: Phlebotomine sandflies, vector, *Leishmania* spp, zoonoses, infected dogs, insecticides.

Morgan, M.K., D.M. Stout, and N.K. Wilson (2001). **Feasibility study of the potential for human exposure to pet-borne diazinon residues following lawn applications.** *Bulletin of Environmental Contamination and Toxicology* 66(3): 295-300. ISSN: 0007-4861.

NAL Call Number: RA1270.P35A1

Descriptors: toxicity, lawn care chemicals, diazinon, human-pet transfer, health risk.

Otranto, D., P. Paradies, M. Sasanelli, N. Leone, D. de Caprariis, J. Chirico, R. Spinelli, G. Capelli, and O. Brandonisio (2005). **Recombinant K39 dipstick immunochromatographic test: a new tool for the serodiagnosis of canine leishmaniasis.** *Journal of Veterinary Diagnostic Investigation* 17(1): 32-37. ISSN: 1040-6387.

NAL Call Number: SF774.J68

Abstract: The spread of human leishmaniasis has prompted the scientific community to study dogs as reservoirs for *Leishmania infantum*. Canine leishmaniasis (CanL) is widespread in the Mediterranean area with a prevalence of up to 50%. The first step toward controlling the disease is to monitor its distribution, mainly in stray dogs. The validity of a recombinant K39 (rK39) dipstick test, commercially available for the serodiagnosis of human leishmaniasis, was evaluated using sera from 165 dogs selected on the basis of positive or negative lymph node smears at parasitological examination. The results were compared with the indirect fluorescent antibody test (IFAT) (cutoff 1:80). Sera from a group of dogs with other diagnosed diseases but

negative for leishmaniasis were also tested to evaluate any cross-reactivity. Various procedures were used for testing whole blood samples. The relative specificity of the rK39 dipstick and IFAT was 100% (97 of 97) and 98.97% (96 of 97), whereas the relative sensitivity was 97.06% (66 of 68) and 98.53% (67 of 68), respectively. The results of the dipstick and IFAT corresponded except for 2 sera ($k = 0.987$). This data confirm the usefulness of rK39 antigen for diagnosing CanL both in symptomatic and asymptomatic dogs. The rK39 dipstick proved to be a rapid, sensitive, and specific test that may be very useful in the field for large-scale screening and also in veterinary practice, requiring minimal equipment and operator expertise.

Descriptors: human leishmaniasis, canine leishmaniasis, stray dogs, Mediterranean area, rK39 antigen, diagnosis.

Padilla, A.M., J.D. Marco, P. Diosque, M.A. Segura, M.C. Mora, M.M. Fernandez, E.L. Malchiodi, and M.A. Basombrio (2002). **Canine infection and the possible role of dogs in the transmission of american tegumentary leishmaniosis in salta, argentina.** *Veterinary Parasitology* 110(1-2): 1-10. ISSN: 0304-4017.

NAL Call Number: SF810.V4

Abstract: Some *Leishmania* species affect humans in two principal forms: visceral and cutaneous leishmaniosis (CL). Several studies have identified dogs as the main reservoirs of the visceral leishmaniosis (VL) caused by *Leishmania infantum*. The purpose of this work was to carry out a survey of the canine population associated with human cases of American tegumentary leishmaniosis (ATL), in order to establish the clinical, parasitological, serological and immunological characteristics of the canine disease, in an endemic region for both ATL and Chagas' disease in the province of Salta, in northwestern Argentina. Two hundred and eight dogs from the endemic area were examined and 41 (19.7%) of them presented lesions compatible with leishmaniosis. In order to investigate the presence of antibodies against *Leishmania* spp. and *Trypanosoma cruzi*, sera were screened by ELISA using two complex antigens from these parasites and, because of cross-reactions between them, a specific antigen for diagnosis of *T. cruzi* infection. Sixty-two (29.8%) of 208 dogs were positive for the complex antigen F45 from *Leishmania* and 50 (24%) were positive for the complex antigen F105 from *T. cruzi*. Nine dogs (4.3%) were positive for the specific Ag163B6 -cruzipain suggesting that these dogs were truly infected with *T. cruzi*. Furthermore, three of these nine dogs presented *Leishmania* sp. in their skin lesions and therefore were considered as infected by both, *T. cruzi* and *Leishmania* parasites. The prevalence of *Leishmania* infection detected by lesions and/or positive serology was 27.4% (57/208). On the basis of previous observations regarding the clustered appearance of human ATL, the dog population was divided into two groups: zone A, dogs living within a 100 m radius from houses with human cases, and zone B, dogs living beyond this limit. The prevalence of ATL in dogs was significantly higher in zone A (34.6%) than in zone B (7.3%), suggesting a strong correlation between

canine and human cases. The average time required for a parasitological diagnosis by microscopy was six times longer for dog samples than human ones, and the average number of parasites per 100 microscopic fields was 14-fold lower in canine samples. The high prevalence of *Leishmania* infection and the close association with human cases, demonstrated that dogs are a very susceptible host for *Leishmania* infection, but the scarcity of parasites in their lesions suggests that they may not be the main reservoir of the parasite in this endemic area.

Descriptors: epidemiology, population studies, parasitology, vector biology, American tegumentary leishmaniasis, parasitic disease, transmission, Chagas' disease, *Trypanosoma cruzi* infection, diagnosis, elisa, diagnostic techniques, immunologic techniques, laboratory techniques.

Parvaneh, S., M. Kronqvist, E. Johansson, and M. van Hage Hamsten (1999). **Exposure to an abundance of cat (Fel d 1) and dog (Can f 1) allergens in Swedish farming households.** *Allergy Copenhagen* 54(3): 229-234. ISSN: 0105-4538.

Abstract: The amount of cat (Fel d 1) and dog (Can f 1) allergens were measured in farm households and the relationship between exposure and sensitization to cat and dog allergens was examined. Dust samples from the homes of 403 farmers who had participated in an epidemiologic follow-up study in 1996 on respiratory symptoms were analysed for allergen content by 2-site ELISA methods. Fel d 1 was detected in 99.5% of the farmers' households ranging from 0.055 to 1455 micro g/g dust in mattresses (GM 13.2) and to 3775 micro g/g dust in living-room carpets (GM 17.1). Can f 1 was detected in 90.6% of the households from 0.2 to 116 micro g/g dust in mattresses (GM 2.0) and to 504 micro g/g dust in carpets (GM 4.3). Homes with pets present had the highest levels of the allergens ($P < 0.001$). 8.4% and 7.4% of the farmers were sensitized to cat and dog, respectively. A significant correlation was noted between exposure to the allergens and specific IgE to cat and dog, respectively ($P < 0.001$). Sensitization to cat (OR=4.9) and dog (OR=17.8) was significantly associated with asthma. It was concluded that in spite of the abundance of Fel d 1 and Can f 1, the farmers were only to a low degree sensitized to cats and dogs.

Descriptors: allergens, asthma, epidemiology, farmers, dwellings, immunoglobulins, IgE, house dust, surveys, respiratory diseases, human disease, carpet, cats, dogs.

Prasad, V.S., M. Duggal, A.K. Aggarwal, and R. Kumar (2001). **Animal bite management practices: a survey of health care providers in a community development block of haryana.** *Journal of Communicable Diseases* 33(4): 266-273. ISSN: 0019-5138.

NAL Call Number: RA643.7.I6

Abstract: It is seen that outcome of animal bites is influenced by various factors including the treatment procedures practised by health care providers (HCPs). A cross sectional study of health care providers was conducted during May 2000 in PHC Kurali and Naraingarh town of community development block Naraingarh in

district Ambala, Haryana. A total of forty-four HCPs were interviewed at their health facility. They were asked about the qualification and number of years in practice. Health care providers were assessed for their knowledge regarding history taking, immediate management of animal bite, post bite anti-rabies treatment, follow up advice and availability of vaccines. Pre-exposure prophylaxis was known to 18.8% of HCPs. Fifty-nine per cent of HCPs were confident in managing dog bites and 93.1% knew about tissue culture vaccine. Vaccine cost was the commonest barrier (38.8%) in the management of animal bites. This study shows a gross difference between awareness and actual practice of management of animal bites.

Descriptors: epidemiology, population studies, public health, allied animal bite, injury, therapy, anti rabies treatment, pre exposure prophylaxis, animal bite management practices, community development block, health care providers, tissue culture vaccine.

Randall, A., A. Hillier, L.K. Cole, K.W. Kwochka, G. Needham, and D.L. Wassom (2003).

Quantitation of house dust mites and house dust mite allergens in the microenvironment of dogs. *American Journal of Veterinary Research* 64(12): 1580-1588.

ISSN: 0002-9645.

NAL Call Number: 41.8 Am3A

Abstract: Objective: To quantitate the density of *Dermatophagoides farinae* and *D. pteronyssinus* and concentrations of house dust mite (HDM) allergens (Der f 1, Der p 1, and Group 2 allergens) in the indoor microenvironment of dogs. Sample Population: 50 homes in Columbus, Ohio. Procedures: In each home, samples of dust were collected from 3 locations in which dogs spent most time. Whenever possible, the species of mites collected was identified. Mite density (mites/g of dust) was assessed, and allergen concentrations were assayed by standardized ELISAs. Relative humidity and temperature in each home were monitored during a 5-day period. Characteristics of homes and sample sources were evaluated. Results: Dust samples from all 50 homes contained *more-than-or-equal1 HDM allergen; Der f 1 and Der p 1 were detected in 100 and 74% of homes, respectively. Fifteen homes had HDMs; compared with *D. pteronyssinus*, *D. farinae* was found more commonly (14/15 homes) and at a higher density. Basements, homes without central air-conditioning and dog beds that were *more-than-or-equal1 year old had high HDM allergen concentrations. Homes with *more-than-or-equal2 microng of Der f 1 or Group 2 allergens/g of dust or *more-than-or-equal100 mites/g of dust were significantly more likely to have a maximum relative humidity *more-than-or-equal75%. Conclusions and Clinical Relevance: Results indicated the presence of HDMs and HDM allergens in the specific microenvironment of dogs in homes. Factors associated with high levels of exposure were identified, which may be associated with increased risk for sensitization and development of atopic diseases.

Descriptors: allergens, environment, house dust mites, *Dermatophagoides farinae*, *Dermatophagoides pteronyssinus*, dogs, mites.

Raunio, P., A.L. Pasanen, M. Reiman, and T. Virtanen (1998). **Cat, dog, and house-dust-mite allergen levels of house dust in Finnish apartments.** *Allergy Copenhagen* 53(2): 195-199. ISSN: 0105-4538.

Abstract: Dust samples (n=30) were collected by vacuuming a 1 m² area from a living-room carpet in 30 Finnish apartments divided into 3 groups: homes with cats (n=10), homes with dogs (n=10), and homes without pets (n=10). The levels of major cat (Fel d 1), dog (Can f 1), and house dust mite (*Dermatophagoides pteronyssinus*, Der p 1) allergens were analysed by 2-site ELISA methods. Der p 1 levels were below the detection limit in all dust samples. In the homes with cats or dogs, Fel d 1 and Can f 1 levels ranged from 147 to 2800 µg/g (geometric mean 567 µg/g), and from 86 to 1400 µg/g (geometric mean 296 µg/g), respectively, being slightly higher than those reported elsewhere. Low allergen levels, mainly below 3 µg/g, were also detected in the homes without pets, indicating the transfer of allergens from place to place. However, in 25% of these samples, allergen levels exceeded the proposed threshold levels for cat or dog sensitization. The presence of pets was the most significant factor affecting cat and dog allergen levels in house dust, and other factors, such as the amount of dust collected, residential time, and cleaning habits, had no or only a weak effect on allergen levels.

Descriptors: house dust, house dust mites, pets, allergens, dwellings, ELISA, cleaning, cats, dogs, *Dermatophagoides pteronyssinus*.

Schantz, P.M., H. Wang, J. Qiu, F.J. Liu, E. Saito, A. Emshoff, A. Ito, J.M. Roberts, and C. Delker (2003). **Echinococcosis on the tibetan plateau: prevalence and risk factors for cystic and alveolar echinococcosis in tibetan populations in qinghai province, china.** *Parasitology* 127(Suppl. S): S109-S120. ISSN: 0031-1820.

NAL Call Number: 448.8 P21

Abstract: Infections by larval stages of tapeworms of the genus *Echinococcus* (echinococcosis or hydatid disease) are zoonotic infections of major public health importance throughout much of the world. Humans become infected through accidental ingestion of eggs passed in faeces of canid definitive hosts. Tibetan populations of China have some of the highest documented levels of infections by both *Echinococcus granulosus* and *E. multilocularis*, the causes of cystic and alveolar echinococcosis, respectively. In this study we measured the prevalence of cystic (CE) and alveolar (AE) echinococcosis disease in Tibetan communities in Qinghai, Province, China, and identified putative risk factors for both infections in these communities. 3703 volunteers in three predominately Tibetan counties of Qinghai were surveyed between June 1997 and June 1998. Parasitic lesions were diagnosed by imaging of characteristic space-occupying lesions in abdominal organs (ultrasound) or the lungs

(radiographs). Specific serodiagnostic assays (Dot-ELISA and Em2-ELISA) were performed on sera of positively imaged subjects to further distinguish the disease agent. All participants completed a questionnaire documenting age, sex, education level, occupation, lifestyle (nomadic or settled), slaughter practices, drinking water source, hygienic practice and association with dogs. Data were analyzed using SAS version 8. 6.6% of the volunteers had image-confirmed infection with *E. granulosus* (CE) and 0.8% had *E. multilocularis* (AE) infection. The significant univariate factors for echinococcal infection (both CE and AE) included livestock ownership, Tibetan ethnicity, female gender, low income, herding occupation, limited education, water source, age greater than 25 years old, poor hygienic practices, offal disposal practices and dog care. Multivariate analysis revealed that livestock ownership was a significant risk factor for both forms of the disease, as well as age greater than 25 years, female gender, herding occupation, and being nomadic (vs semi-nomadic or settled). No additional significant risk factors were identified among the 344 nomadic participants. Being female and being older than 25 years of age were significant factors among the 1906 semi-nomadic participants. Among the 1445 settled participants, allowing dogs to sleep indoors was statistically significant. Issues such as inadequate assessment of animal ownership, selection bias, disease misclassification, and loss of information may have led to reduction in strength of some risk factor associations and need to be addressed in future epidemiologic analysis of echinococcosis in this population.

Descriptors: echinococcosis, parasitic disease, transmission, questionnaire, serodiagnosis, ultrasound imaging, parasitic lesions, putative risk factors.

Schettini, D.A., A.P. Costa Val, L.F. Souza, C. Demicheli, O.G.F. Rocha, M.N. Melo, M.S.M. Michalick, and F. Frezard (2003). **Distribution of liposome-encapsulated antimony in dogs.** *Brazilian Journal of Medical and Biological Research* 36(2): 269-272. ISSN: 0100-879X.

NAL Call Number: R850.A1B72

Abstract: The achievement of complete cure in dogs with visceral leishmaniasis is currently a great challenge, since dogs are the main reservoir for the transmission of visceral leishmaniasis to humans and they respond poorly to conventional treatment with pentavalent antimonials. In order to improve the efficacy of treatment, we developed a novel formulation for meglumine antimoniate based on the encapsulation of this drug in freeze-dried liposomes (LMA). The aim of the present study was to evaluate the biodistribution of antimony (Sb) in dogs following a single intravenous bolus injection of LMA. Four healthy male mongrel dogs received LMA at 3.8 mg Sb/kg body weight and were sacrificed 3, 48 and 96 h and 7 days later. Antimony was determined in the blood, liver, spleen and bone marrow. In the bone marrow, the highest Sb concentration was observed at 3 h (2.8 mug/g wet weight) whereas in the liver and spleen it was demonstrated at 48 h (43.6 and 102.4 mug/g, respectively).

In these organs, Sb concentrations decreased gradually and reached levels of 19.1 mug/g (liver), 28.1 mug/g (spleen) and 0.2 mug/g (bone marrow) after 7 days. Our data suggest that the critical organ for the treatment with LMA could be the bone marrow, since it has low Sb levels and, presumably, high rates of Sb elimination. A multiple dose treatment with LMA seems to be necessary for complete elimination of parasites from bone marrow in dogs with visceral leishmaniasis.

Descriptors: parasitology, pharmacology, visceral leishmaniasis, parasitic disease.

Shaw, S.E., M.J. Kenny, S. Tasker, and R.J. Birtles (2004). **Pathogen carriage by the cat flea *Ctenocephalides felis (bouche)* in the united kingdom.** *Veterinary Microbiology* 102(3-4): 183-188. ISSN: 0378-1135.

NAL Call Number: SF601.V44

Descriptors: animal care, infection, vector biology, cat scratch disease, bacterial disease, transmission, hemolytic anemia, blood and lymphatic disease, murine typhus.

Web Resources

All resources are accessible through the internet and are current as of January 2008. Readers are cautioned as to the dynamic nature of the internet and the fact that addresses and content are subject to change.

Alternatives to Animal use in Veterinary Medicine Teaching Laboratories: Dogs and Cats. *Weng, H.Y.*

Online: http://www.vetmed.ucdavis.edu/Animal_Alternatives/cat_dog_protocol.htm

Description: Site containing sample literature search strategies to common research protocols using dogs. Links provided to launch searches in a variety scientific literature databases. Searches include handling, teaching, surgery, and anesthesia.

Az ELTE Biológiai Intézet Etológia Tanszék és az MTA Összehasonlító Etológiai Kutatócsoport referált közleményei. *Department of Ethology. Eötvös University and Comparative Ethology Research Group.*

Online: <http://etologia.aitia.ai/main.php?folderID=945>

Description: Bibliography containing citations regarding human-dog relationships and dog ethology. Many citations are in English.

Canine Sports Productions. *Zink, C.*

Online: <http://www.caninesports.com/index.html>

Description: Articles on the diet and conditioning of the canine athlete written by veterinarian and canine sports medicine consultant, Chris Zink.

Comfortable Quarters for Laboratory Dogs. *Hubrecht, R.C.*

Online: <http://www.awionline.org/pubs/cq02/Cq-dogs.html>

Description: General review of laboratory housing needs for dogs used in research. Design of enclosures, space allowances, and socialization requirements are listed.

Dog Learning Laboratory Kit. *Curriculum Materials Service.*

Online: <http://www-cms.ag.ohio-state.edu/DogKit.html>

Description: Ordering information on a dog teaching kit prepared for vocational education teachers. Kit contains educator resource materials, laminated posters of canine breeds, animal confirmation, behavioral postures, record keeping and more.

Dog Lovers Bookshop. *Dackel, P.B.*

Online: <http://www.dogbooks.com/>

Description: Hard to find used, out of print and rare dog related books are listed at this site.

Housing and Husbandry: Dogs. *National Centre for the Replacement Refinement and Reduction of Animals in Research UK.*

Online: <http://www.nc3rs.org.uk/category.asp?catID=51>

Description: Information portal for information regarding the housing, husbandry and care of dogs used in research settings.

Information Resources on Spaying and Neutering Cats, Dogs and Related Wildlife.

Adams, K.M.

Online: <http://www.nal.usda.gov/awic/pubs/SpayNeuter/spayneuter.htm>

Description: Bibliography containing citations regarding issues and techniques for spaying and neutering of dogs, cats and related wildlife.

International Veterinary Information Service (IVIS). *International Veterinary Information Service (IVIS).*

Online: <http://www.ivis.org/>

Description: International Veterinary Information Service (IVIS) is a not-for-profit organization established to provide information to veterinarians, veterinary students and animal health professionals worldwide using Internet technology. The IVIS website provides **free** access to original, up-to-date publications organized in electronic books each edited by highly qualified editors, proceedings of veterinary meetings, short courses, continuing education (lecture notes, manuals, auto tutorials and interactive websites), an international calendar of veterinary events and more.

A Reference Source for Analgesia and Analgesics in Animals. *Crawford, R.L.*

Online: <http://www.nal.usda.gov/awic/pubs/awic200002.htm>

Description: Bibliographic resource containing published reference sources on analgesia and the use of analgesics in animals. Section included on dogs and cats.

Reference Source for the Recognition and Alleviation of Pain and Distress in Animals.

Crawford, R.L.

Online: <http://www.nal.usda.gov/awic/pubs/awic200003.htm>

Description: Bibliographic resource containing citations regarding pain recognition, alleviation, and control in laboratory animals. A section on dogs and cats is included.

Research Animals: Dogs. *Animal Welfare Information Center (AWIC).*

Online: <http://awic.nal.usda.gov/>

Description: Use the search box and enter “dog” to retrieve various pages and documents relating to the care and welfare of laboratory and companion dogs.

Syn Alia Training Systems. *Cover, K.*

Online: <http://www.synalia.com/>

Description: Site describes humane training technique used for teaching animals a wide variety of concepts and behaviors. Training system can be used to assist animals in acclimating to common veterinary and laboratory procedures.

Tail Docking: Dogs. *New Zealand Veterinary Association.*

Online: <http://www.vets.org.nz/News/Public/TailDock/taildocking.htm>

Description: Welfare and ethical issues regarding tail docking of dogs in New Zealand.

ThePetCenter.com. *Dunn, T.J.*

Online: <http://www.thepetcenter.com/>

Description: Award winning Web site created by veterinarians that contains extensive files on dog and cat health care information presented in non-medical terms. Disease, surgery, nutrition, and many other topics are covered.

Working with the Laboratory Dog: Training for the Enhancement of Animal Welfare in Research . *Department of Veterans Affairs (VA) American Association for Laboratory Animal Science (AALAS).*

Online: <http://grants.nih.gov/grants/olaw/TrainingVideos.htm#dog>

Description: An online training video resource available for individuals that work with laboratory dogs in research settings.

