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Acknowledgements

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We would also like to thank the editors of the *Scandinavian Journal of Laboratory Animal Science* for permission to load the previously published article *Comparative Anatomy and Physiology of the Pig* authored by M. M. Swindle, D.V.M. and A. C. Smith, D.V.M., to this online resource.

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Introduction

Swine have increasingly become utilized as biomedical research models in the last two decades. This increased use as an animal model is not only a result of regulatory pressure on other large animal species, but also because swine are recognized as a suitable animal model for human disease based upon their comparative anatomy and physiology. Swine are used as general surgical models of most organs and systems, for cardiovascular research including atherosclerosis, for digestive system models, and in recent years in transplantation and xenografic research.

They are being explored as models in many other systems because of the widespread availability of both domestic and miniature breeds. Hand-in-hand with this increase in the number of swine in research, have come technical developments in surgery, anesthesia, husbandry and handling techniques. These technical advancements have made it easier to use this species in research and have also improved the humane care and use of swine by research institutions worldwide.

This resource was developed to provide investigators, laboratory animal veterinarians, technicians, and others, using swine for biomedical purposes with access to baseline literature on common models and procedures. As the resources available on laboratory swine continues to expand, investigators are encouraged to review multiple publications and to find information that supports their particular research needs.

How to Use This Document

This document is divided into three major sections: Comparative Anatomy and Physiology of the Pig; Bibliography; and Web Resources on Swine.

Comparative Anatomy and Physiology of the Pig

This article provides information on the comparative anatomy and physiology of the porcine cardiovascular, digestive, dermal and urinary system. Differences between farm and miniature breeds are discussed. Comparisons and similarities between swine and human anatomy and physiology are also reviewed. The article is followed by a list of reference citations.

Bibliography

The bibliographic section of this document is divided into 29 subsections. Subsections range in topic from anatomy, anesthesia, surgical procedures, body systems, common biomedical models, and husbandry of laboratory swine. Citations in each subsection were compiled from a variety of medical, agricultural, and biological databases and other resources.

Citations were also generously contributed from the personal files of laboratory swine expert, M. Michael Swindle; D.V.M. Citations include NAL call numbers for sources available at the National Agricultural Library (NAL). 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/borrow-materials.

Web Resources on Swine

This section contains links to World Wide Web resources organized into eleven different categories: Articles, Pamphlets, and Handbooks; Bibliographies; Books; Courses/Learning Modules/Techniques; General Swine Sites; Genetics and Breeding; Journals; Proceedings; Literature Databases; Model Research; and Organizations. Emphasis was placed on information that would be helpful to researchers, laboratory animal veterinarians, and technicians. Web addresses were current as of August 1, 2000.

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Comparative Anatomy and Physiology of the Pig

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Abstract

Swine, *Sus scrofa domestics*, are widely used in research and testing. Most of the animals are small domestic farm breeds, but miniature swine such as the Yucatan, Hanford and Gottingen are widely used for chronic studies where the significant growth of the domestic breeds would be an issue. They share anatomic and physiologic characteristics with humans that make them a unique and viable model for biomedical research. The cardiovascular anatomy, physiology and response to atherogenic diets have made them a universally standard model for the study of atherosclerosis, myocardial infarction and general cardiovascular studies. Their gastrointestinal anatomy has some significant differences from that of humans, however, the physiology of their digestive processes has made them a valuable model for digestive diseases. The urinary system of swine is similar to humans in many ways, especially in the anatomy and function of the kidneys. Swine are also a standard model for skin and plastic surgical procedures and have been developed as models of transdermal toxicity. The anatomy and physiology of organs such as the liver, pancreas, kidney and heart have also made this species the primary species of interest as organ donors for xenografic procedures. This manuscript reviews the anatomy and physiology of swine as it relates to biomedical research.

Introduction

Swine have been used extensively in biomedical research and the most relevant models have been reviewed in a series of technical proceedings and books in the last two decades *(Stanton & Mersmann, 1986; Swindle, 1983; Swindle, 1992; Swindle, 1998; Swindle & Adams, 1988; Tumbleson, 1986; Tumbleson & Schook, 1996)*.

All swine commonly used in research and testing are *Sus scrofa domestics*, whether they are farm or miniature breeds. The main difference between breeds is size at sexual maturity. Domestic breeds typically reach 100 kg by 4 months of age and miniature breeds typically range from 25-50 kg at the same age. The predominant breeds of miniature swine used in research are the Yucatan, Hanford, Göttingen and Sinclair Hormel, although dozens of other breeds have been utilized in the scientific literature *(Swindle et al, 1994)*.

The predominant porcine systems studied in biomedical research are cardiovascular, digestive, dermal and urinary. However, a smaller number of models have utilized other systems. This manuscript reviews the relevant anatomy and physiology of the pig as it applies to biomedical research. The discussion is organized by systems with the glandular and endocrine structures discussed with the anatomically associated organs.

Cardiovascular and Pulmonary Systems

The heart of the pig is anatomically similar to humans with a notable exception being the presence of the left azygous (hemiazygous) vein, which drains the intercostal system into the coronary sinus *(Swindle et al, 1986)*. The coronary system is similar to 90% of the human population in anatomy and function. There are no preexisting collateral vessels in the myocardium *(Bloor et al, 1992)*. The heart of a 40-50 kg miniature pig is approximately the same size as an adult human heart. The heart is approximately 0.5% of the body weight at sexual maturity in miniature swine, however, the heart decreases as a percentage of body weight in domestic swine as the animal grows and is approximately 0.3% at the same age as the miniature swine. Differences in heart weight between species of miniature swine have been noted with the Yucatan having a significantly larger heart than the Hanford at the same age *(Smith et al, 1990; Swindle et al, 1988)*. The blood supply to the conduction system is from the posterior septal artery and thus is predominantly right side dominant like the human *(Gardner & Johnson, 1988)*. There are large numbers of adrenergi cholinergic fibers in the AV node and right and left bundle branches. However, nerve cells are sparse in the fibers. The endocardium and epicardium are activated simultaneously because of differences in the distribution of the conduction system. The Purkinje system has large subendocardial fibers. These characteristics give the pig a more neuromyogenic conduction system than the human. However, other species used in cardiac electrophysiology also have anatomic and functional differences in the conduction system from humans as well. Conduction system rates decrease as the animal matures, but in general are more rapid than for humans of equivalent maturity *(Gardner & Johnson, 1988); (Stanton & Mersmann, 1986)*.

The aorta of swine contains a vaso vasorum like humans. It also has a comparable histologic anatomy. However, blood vessels and the atria in swine tend to be more friable than other species, especially in neonates. The blood vessels are also more prone to vasospasm during manipulation. The external jugular vein and sheath are at approximately the same depth as the ventral surface of the cervical vertebrae. The jugular furrow may be visualized running from the ramus of the mandible to the point of the shoulder by pulling the forelimb caudally while the pig is in dorsal recumbency. Many of the peripheral blood vessels are located relatively deep in the tissues compared to other species, however, vascular access may be readily obtained with standard sized needles from the cephalic, external and internal jugular, auricular, anterior abdominal, saphenous and femoral veins with practice. All of these vessels as well as internal abdominal and thoracic vessels may be chronically catheterized surgically *(Swindle, 1983; Swindle, 1998; Swindle et al, 1986; Swindle et al, 1988)*.

Hemodynamically, swine have been demonstrated to be similar in cardiac function to humans. There are variations between breed and age of swine that need to be taken into consideration. For instance, the Yucatan micropig has a significantly higher pulmonary vascular resistance at the same age as the Yucatan and Hanford miniature breeds. The Hanford has a higher systolic blood pressure than either Yucatan under equivalent conditions. When reproducing studies between laboratories, caution should be taken in comparing hemodynamics between different breeds. Animals should be age and weight matched *(Smith et al, 1990; Swindle, 1998)*. The development of atherosclerosis occurs both spontaneously and by experimental induction in swine feed an atherogenetic diet. The metabolism of lipoproteins is similar to humans. Endothelial damage with balloon catheters can be utilized to localize the site of development of the atherosclerotic plaque, however, the distribution of the atherosclerotic plaques will be similar to humans if allowed to develop spontaneously over time. The histology and pathogenesis of the plaques appears to be similar to humans as well *(Gal & Isner, 1992; White et al, 1992)* .

Swine do have congenital cardiovascular anomalies including ventricular septal defect (VSD), atrial septal defect, patent foramen ovale, patent ductus arteriosus and tricuspid dysplasia. Hypertrophic cardiomyopathy also has a spontaneous occurrence i n some breeds of domestic and miniature swine *(Swindle et al, 1992)*. The model of VSD has been developed as a genetically reproducible model which has been shown to be analogous to human infants with VSD and failure to thrive syndrome. It consistently develops the various morphologies of high membranous defects and may be useful for the study of interventional closure of the defects. Congenital shunts may also be created by use of angioplasty balloon techniques. If shunts are reopened in neonates with balloon catheters they will remain open and develop volume overload hypertrophy. They also develop pressure overload hypertrophy following banding of the great vessels of the heart like other species *(Swindle, 1998)*.

Most of the cardiovascular models in swine (Stanton & Mersmann, 1986; Swindle, 1998) are related to testing of interventional catheter devices (Gal & Isner, 1992; Swindle, 1998), atherosclerosis White et al, 1992), myocardial infarction (Bloor et al, 1992; (Gardner & Johnson, 1988), coronary blood flow (Bloor et al, 1992; (Gardner & Johnson, 1988), intracardiac electrophysiology (Brownlee et al; (Smith et al, 1997) and cardiovascular surgery (Swindle, 1998; Swindle et al, 1986), predominantly with the implantation of biomechanical devices (Gal & Isner, 1992; Mehran et al, 1991).

The characteristics that have led to the use of swine over other species for these models are related to the anatomic and physiologic characteristics described above. The porcine model develops an infarction pattern like the human and develops arrhythmogenic activity with reperfusion. The canine model of infarction already has an existing collateral blood supply, but may represent the portion of the human population which has slowly developed collateral circulation due to gradual occlusion of a coronary artery. Gradual occlusion may be created in swine by causing endothelial damage with an angioplasty balloon and feeding an atherogenic diet of 2% cholesterol. The pattern of infarction and healing of the myocardium is almost identical to humans (Bloor et al, 1992; (Gal & Isner, 1992; (Gardner & Johnson, 1988); (Stanton & Mersmann, 1986; Swindle, 1998; White et al, 1992).

Likewise, the wound healing characteristics in the cardiovascular system mimic these in man following implantation of some devices, such as intracoronary stents. Unlike other models they develop coronary restenosis syndrome (Swindle, 1998; White et al, 1992). For intravascular healing, investigators may be required to use multiple models since no single species is exactly analogous to humans. The pig has the advantages of predictable size and platelet function, unlike the dog. Even the primate models are not exactly analogous. Wound healing in the myocardium has typically used swine, dogs and sheep. The myocardial wound healing characteristics of swine are more analogous to humans than sheep models since ruminants healing is characterized by the formation of collagenous scars (Mehran et al, 1991); National Institutes of Health, 1985; Von Recum, 1986).

The lungs are composed of apical, middle and diaphragmatic lobes with an additional accessory lobe for the right lung. The interlobular fissures are incomplete. The larynx is prominent with a large vestibule and lateral and middle ventricles that create a caudal narrowing of the structure. The trachea courses from approximately C3-4 into the thorax. The apical lobe of the right lung has a bronchus that stems from the trachea cranial to the tracheal bifurcation which supplies the other lobes of the lung. The bronchial tree divisions are typical of other species (Swindle, 1998). Functional studies of the airway, including neurochemical anatomy and smooth muscle function, make them useful in models of acute respiratory distress syndrome and asthma. The neonatal development of the lungs and airways is useful for extrapolation to humans (Brown & Terris, 1996). The thyroid gland is located on the ventral surface of the trachea at the thoracic inlet rather than near the larynx. The thymus gl and is located in the cranial thorax and neck coursing along the trachea. The paired parathyroid glands are located near the cranial thymus rather than the thyroid (Swindle, 1983; Swindle, 1998).

Digestive System

The digestive system of swine has anatomic differences from humans fig. 2, fig. 3, fig. 4, however, the physiology of digestion remains similar to humans. Swine are true omnivores.

The dental formula for swine is 2(I 3/3, C 1/1, P 4/4)=32 for deciduous teeth. For permanent teeth it is 2(I 3/3, C 1/1, P 4/4, M 3/3)=44. A full set of permanent teeth is usually present by 18 months of age (Swindle, 1998).

The salivary glands of the pig are large and consist of paired parotid, mandibular and sublingual glands. The parotid duct enters the oral cavity opposite the juncture of the premolars and molars. The mandibular and sublingual glandular ducts enter t he floor of the mouth near the frenulum. Buccal glands are located opposite the cheek teeth. The parotid gland is serous, the sublingual glands are mucous and the rest are mixed for glandular secretions. The tonsils are embedded in the oropharynx (Schantz et al, 1996).

There is a pharyngeal diverticulum dorsal to the larynx in the caudal portion of the nasopharynx. The muscular layers of the esophagus are mainly composed of smooth muscle until its termination cranial to the esophageal sphincter when it becomes partially striated muscle. The stomach is typical of monogastric animals with the exception of the torus pyloricus, which is a muscular outpouching near the pyloric sphincter. The small intestine is long and located mainly in the right side of the abdomen. The mesenteric vessels form a vascular arcade in the subserosa rather than in the mesentery as in other species. Mesenteric lymph nodes are prominent. The majority of the large intestine is located in the spiral colon in the left upper quadrant of the abdomen. it consists of the cecum, ascending, transverse and a portion of the descending colon coiled tightly into a series of centripetal and centrifugal coils. The outer coil contains two tenia. The descending colon passes caudally along the left abdominal wall to the rectum and anal sphincter. Neither a true sigmoid flexure nor an appendix are present. The pigs intestinal length is approximately 30 times its body length *(Schantz et al, 1996)*.

The liver contains six lobes and a gall bladder. The lobules of the liver are separated by fibrous septae. The common bile duct enters the duodenum separately from the pancreatic duct caudal to the pylorus. The pancreas is extensive and the tail follows the lesser curvature of the stomach from the spleen to the proximal duodenum. The body encircles the superior mesenteric vein and extends dorsally to the left kidney. The pancreatic ducts in the tail and body join at the juncture of the two lobes to enter the duodenum distal from the bile duct. The islet cells are relatively indistinct histologically. Functionally, both the liver and pancreas are similar to humans *(Mullen et al, 1992; Pennington & Sarr, 1988; (Schantz et al, 1996)*.

In spite of the anatomic differences, the pig has been used extensively as a gastrointestinal model. Most of the classical models involving the digestive system have been related to nutritional studies to study digestion of the pig and for studying human digestive phenomena. They will readily ingest such test substances as alcohol in its various forms. The metabolic functions, intestinal transport times, and characteristics of absorbtion of nutrients have made them useful in basic nutritional research. Other specific functional characteristics of swine that relate directly to humans include ion transport and motility, neonatal development of the gastrointestinal tract and splancnic blood flow characteristics. Development of host defenses and endotoxi c shock studies have made them useful as biomedical models in these areas. Like the human, these physiologic characteristics of the gastrointestinal tract are probably due to the omnivorous diet that they consume, unlike that of carnivores, ruminants, rabbits and rodents *(Brown & Terris, 1996; Reeds & Odle, 1996; Tumbleson, 1986; Tumbleson & Schook, 1996)*.

More recently endoscopic and laparoscopic surgical models have been developed and used extensively in the pig. The size and function of structures such as the biliary system and pancreatic duct make them amenable for studying human sized equipment an d biomaterial implants. Surgical modifications have made the intestinal tract amenable to the study of surgical and chronic fistulation procedures *(Swindle, 1998; Swindle & Adams, 1988)*.

Swine have a similar cytochrome P450 system to humans except for the absence of CYP2C19 and CYP2D6 *(Skaanild & Friis, 1997)*. However, metabolically the liver functions similar to humans and has been used for xenoperfusion protocols for humans in hepatic comas *(Collins et al, 1994; Swindle, 1998)*.

Urogenital System

The female reproductive system has a bicornuate uterus with torturous fallopian tubes. The fallopian tubes of an adult female are the same diameter as those of humans, however they are much longer. The sow has an estrous cycle of 2021 days rather tha n a menstrual cycle. Domestic farm breeds have larger litters, usually of 8-12 pigs, than miniature pigs which typically have litters of 4-6. The numbers are variable depending upon the breed and the parity of the sow. The gestation period of 112-114 days allows sows to have up to three litters per year. Uterine placentation is diffuse epitheliochorial. There are typically 12-14 paired mammary glands on the ventral abdomen *(Swindle, 1998; Tumbleson, 1986; Tumbleson & Schook, 1996)*.

The sow has been used in studies of fetal surgery to create models that mimic the human situation. Even though the placentation is unlike humans, the physiologic characteristics of transplacental transfer of antiarrhythmics has been shown to be more similar to the human situation than the traditional ewe model. This transplacental transfer of therapeutic agents may make the sow a predictable model of teratogenicity and efficacy of pharmaceutic agents *(Wiest et al, 1996)*.

The male reproductive system has the same structures as humans, however, the accessory sex glands which predominate are different. The scrotum and testicles are located in the perineal region. The penis is fibromuscular with a sigmoid flexure on the ventral abdomen. The penis has a corkscrew shaped tip. The prepuce is located caudal to the umbilicus and has a preputial diverticulum which contains foul smelling urine and secretory material. The accessory sex glands are: vesicular glands, prostate gland, and bulbo urethral glands. The, vesicular glands are prominent and located at the neck of the bladder. The prostate and bulbourethral glands are relatively small. The shape of the penis and the preputial diverticulum make it impossible to catheterize a male pig through the penile opening. Catheterization has to be performed in the perineal urethra percutaneously *(Swindle, 1983)*; *Swindle, 1998)*.

The kidneys of the pig are more like humans in anatomy and function than most other species of animals. The left kidney is cranial to the right and both are located ventrally to the transverse processes of LI-4. The adrenal glands are located near the cranial poles of both kidneys and the right gland is intimately associated with the wall of the postcava. The kidneys are multirenculate and multipapillate like humans. The blood supply to the kidney divides transversely between the cranial and caudal poles rather than longitudinally like most species *(Brown & Terris, 1996)*, *Pennington, 1992*; *Sachs, 1992*; *Terris, 1986)*.

The bladder is thin walled, but functionally is similar to other species. The innervation is derived from S2-4. The pelvic urethra courses along the ventral floor of the pelvis. The female urethra opens on the ventral floor of the vagina about 1/3 of the distance to the cervix. The male urethra courses through the penis as described above *(Swindle, 1983*; *Swindle, 1998*; *Swindle & Adams, 1988)*.

Swine have been used in studies of developmental and pediatric urology because of the unique anatomy of the kidneys which allows them to develop vesicoureteral and intrarenal reflux *(Swindle, 1998*; *Swindle & Adams, 1988*; *Terris, 1986)*. The kidney has also been used extensively in transplantation biology, including xenografic *studies* *(Institute of Medicine, 1996*; *Pennington, 1992*; *Sachs, 1992*; *Swindle, 1998)*.

The anatomic and physiologic characteristics of the porcine kidney may make it useful for the study of pharmacologic agents since the anatomy of the kidney is more similar to humans than even primates. Swine can be utilized in studies of renal hypertension and can be developed as a model of intact renal DOCA salt induced hypertension or as surgical ablation models of renin induced hypertension *(Swindle, 1998*; *Swindle & Adams, 1988*; *Terris, 1986)*.

Musculoskeletal System

The skeletal system of the pig is massive with relatively thick cortical bone. This is consistent with the support of a rapidly growing animal with a relatively small stature. The Vertebral formula for swine is C7, T14-15, L6-7, S4, Cy2O-23. There ar e 7 sternal and 7 asternal ribs. If a 15th rib is present, it is floating. The principle digits of the pig are III and IV. Digits 11 and V are vestigial and form the dewclaws. Swine are considered to be ungulent or hooved animals. The long bone epiphyses close by 3-4 years in domestic farm breeds and generally 1-2 years earlier in the miniature breeds *(Adams, 1988*; *Donovan et al, 1993*; *Swindle, 1998)*.

The muscles of the pig tend to be massive which is consistent with its primary use as a food source. The muscles have a predominance of Type IIB fibers with lesser numbers of Types IIA and IIC. The quadriped locomotion of swine is different from humans and the muscles reflect this characteristic in their morphology like other quadrupeds *(Adams, 1988)*.

Because of the massive nature of the musculoskeletal system and the quadriped locomotion characteristics, swine have rarely been used in studies of these systems. Recently, there has been increased interest in the model for temporomandibular joint studies as well as bone healing and grafting techniques *(Adams, 1988*; *Bermejo et al, 1993*; *Donovan et al, 1993*; *Swindle, 1998)*.

Integumentary and Lymphatic Systems

Swine are relatively hairless animals with a fixed skin tightly attached to the subcutaneous tissues like humans. Overall, the skin is thicker and less vascular than humans, however, the cutaneous blood supply characteristics are similar. Apocrine sweat glands are absent. Fat cells may be located in the dermis. As the animal grows a substantial amount of subcutaneous fat is deposited. The skin tends to be thicker on the neck and dorsum of the animal *(Bolton et al, 1988*; *Chvapil & Chvapil, 1992*; *Kerrigan et al, 1986*; *Montiero-Riviere & Riviere, 1996)*.

The lymph nodes of the pig have a unique histologic structure. The typical cortex and medulla are reversed with the germinal centers being located in the interior of the gland *(Swindle, 1983; Swindle, 1998)*.

The anatomy and physiology of the cutaneous blood supply and the wound healing characteristics have made the pig a standard model for plastic surgical and wound healing studies *(Kerrigan et al, 1986; Mertz et al, 1986)*. Recently interest has developed in the pig as a model of dermal and transdermal toxicology *Montiero-Riviere, 1986); Montiero-Riviere & Riviere, 1996; Riviere et al, 1986)*. Besides the anatomic similarities swine are equivalent to primates for percutaneous absorbtion studies and have similar lipid biophysical properties, epidermal turnover kinetics and carbohydrate metabolism in the skin *Montiero-Riviere & Riviere, 1996)*.

Central Nervous and Ophthalmic Systems

The brain is encased in a cranial vault formed by the massive cranial bones. The brain is relatively large with structures typical of those of other species. The spinal cord terminates at S2-3 with the origin of the cauda equina. The anatomy of the blood supply to the brain and spinal cord is similar to humans. A stereotactic atlas of the pig brain has been published *(Stodkilde-Jorgensen, 1986; Swindle, 1998)*.

The eye contains a nictitating membrane, Bowman's membrane and Descemet's membrane. Draining for the lacrimal glands is by either one or two puncta in the conjunctiva. The nictitating membrane contains a Harder's gland. The globe is relatively deep i n the orbit with seven extraocular muscles. The eye has an open field of vision with a pupil and retina that resembles humans. The tapetum is absent *(Adams, 1988)*.

Relatively little work has been performed to study the function of the central nervous system in this species. Because of the massive bone structure, surgical access to the brain and spinal cord is difficult. However, the brain development of swine a nd the similar topical, histologic and vascular anatomy make them useful as general mammalian models. Hypophysectomy and cannulation techniques have been described *(Swindle, 1998)*.

Discussion

This review of the anatomy of the pig details the unique characteristics that differentiate it from other species. It also describes characteristics that are significant when using the animal as a biomedical model for humans. More detailed descriptio ns of the anatomy are available *(Getty, 1975; Gilbert, 1966; Leman et al, 1992; Poppesko, 1977; Sack, 1982)*.

The anatomic and physiologic characteristics of swine have made them a valuable animal model of human diseases as well as a model for general mammalian physiology. The systems that are most often studied experimentally are the cardiovascular, digestive, integumentary and urinary (*(Stanton & Mersmann, 1986; Swindle, 1983; Swindle, 1992; Swindle, 1998; Swindle & Adams, 1988; Tumbleson, 1986; Tumbleson & Schook, 1996)*. Interest in the development of models using other systems is rapidly increasing because of the decreased availability and rising costs of other species such as nonhuman primates and dogs. It is likely that comparative descriptions of other systems will appear increasingly in the literature. The interest in swine as xenografic transplant donors is also likely to increase their characterization physiologically and at the molecular level *(Institute of Medicine, 1996; Swindle, 1998)*.

Swine can not replace all other large animal models in biomedical research, however, they are at least as similar to humans for many types of studies which use species such as ruminants and dogs. Consequently, they can be selected as a general mammalian model unless other models have been shown to develop unique physiologic responses to experimental manipulations.

References

Adams, RW: Musculoskeletal system. In: Swindle, MM and Adams, RJ (eds.), Experimental Surgery and Physiology: Induced Animal Models of Human Disease. Baltimore, MD: Williams and Wilkins, pp. 10-41, 1988.

Adams, RJ: Opthalmic system. In: Swindle, MM and Adams, RJ (eds.), Experimental Surgery and Physiology:

Induced Animal Models of Human Disease. Baltimore, MD: Williams and Wilkins, pp. 125-153, 1988.

Bermejo, A, 0 Gonzalez & JM Gonzalez: The pig as an animal model for experimentation on the temporomandibular articular complex. Oral Surg Oral Med Oral Path 75(l): 1823, 1993.

Bharati, S, M Levine, K Shoei, S Huang, B Handler, GVS Parr, R Bauernfeind & M Lev: The conduction system of the swine heart. Chest 100(l): 207-212, 1991.

Bloor, CM, FC White & DM Roth: The pig as a model of myocardial ischemia and gradual coronary artery occlusion. In Swindle, MM (ed.), Swine as Models in Biomedical Research, Ames, IA: Iowa State University Press, pp. 163-175, 1992.

Bolton, LL, E Pines & DT Rovee: Wound healing and integumentary system. In: Swindle, MM and Adams, RJ (eds.), Experimental Surgery and Physiology: Induced Animal Models of Human Disease, pp. 1-9, 1988.

Brown, DR & JM Terris: Swine in physiological and pathophysiological research. In: Tumbleson, ME and Schook, LB (eds.), Advances in Swine in Biomedical Research, Vol. 1, NY: Plenum Press, pp. 5-6, 1996.

Brownlee, RR, MM Swindle, R Bertolet & P Neff: Toward optimizing a preshaped catheter and system parameters to achieve single lead DDD pacing. PACE.

Chvapil, M & TA Chvapil: Wound healing models in the miniature Yucatan pig. In: Swindle, MM (ed.), Swine as Models in Biomedical Research, Ames, IA: Iowa State University Press, pp. 265-288, 1992.

Collins, BH, RS Chari, JC Maggee, RC Harland, BJ Lindman, JS Logan, RR Bollinger, WC Meyers & JL Platt: Mechanisms of injury in porcine livers perfused with blood of patients with fulminant hepatic failure, Transplantation 58(11): 1162-1171, 1994.

Donovan, MG, NC Dickerson, JW Hellstein & LJ Hanson: Autologous calvarial and iliac onlay bone grafts in miniature swine. Journal of Oral and Maxillofacial Surgery 51: 898-903, 1993.

Gal, D & JM Isner: Atherosclerotic Yucatan microswine as a model for novel cardiovascular interventions and imaging. In Swindle, MM (ed.), Swine as Models in Biomedical Research, Ames, IA: Iowa State University Press, pp. 118-140, 1992.

Gardner TJ & DL Johnson: Cardiovascular system. In: Swindle, MM and Adams, RJ (eds.), Experimental Surgery and Physiology: Induced Animal Models of Human Disease, pp. 74-124, 1988.

Getty, R (ed.): Sisson and Grossman's The anatomy of the domestic animals porcine, Vol. 2, Philadelphia, PA. W.B. Saunders, 1975.

Gilbert, SG: Pictoral Anatomy of the Fetal Pig, 2nd ed. Seattle, WA: University of Washington Press, 1966.

Institute of Medicine: Xenotransplantation: Swine, Ethics & Public Policy, Washington, D.C: National Academy Press, 1996.

Kerrigan, CL, RG Zelt, JG Thomson & E Diano: The pig as an experimental animal in plastic surgery research for the study of skin flaps, myocutaneous flaps and fasciocutaneous flaps. Lab Anim Sci, 36(4): 408-412, 1986.

Leman, AD, BE Straw, WL Mengeling, S D'Allaire & DJ Taylor: Diseases of Swine, 7th ed. Ames, IA: Iowa State University Press, 1992.

Mehran, RJ, MA Ricci, AM Graham, K Carter & JF Smyes: Porcine model for vascular graft studies. J Invest Surg 4(l): 37-44, 1991.

Mertz, PM, PA Hebda & WH Eaglstein: A porcine model for evaluation of epidermal wound healing. In:

Tumbleson, ME (ed.), Swine in Biomedical Research, Vol. 1, pp. 291-302, 1986.

Montiero-Riviere, NA & J Riviere: The pig as a model for cutaneous pharmacology and toxicology research. In: Tumbleson, ME and Schook, LB (eds.), Advances in Swine in Biomedical Research, Vol. 2, NY: Plenum Press, pp. 425-458, 1996.

Monteiro-Riviere, NA: Ultrastructural evaluation of the porcine integument. In: Swine in Biomedical Research, Vol. 1, Tumbleson, ME (ed.). NY. Plenum Press, pp. 641-655, 1986.

Mullen, Y, Y Taura, M Nagata, K Miyazawa & E Stein: Swine as a model for pancreatic betacell transplantation. In: Swindle, MM (ed.), Swine as Models in Biomedical Research, Ames, IA: Iowa State University Press, pp. 1634, 1992.

National Institutes of Health: Guidelines for blood-material interactions. Report of the National Heart, Lung and Blood Institute Working Group. Bethesda, MD: US Department of Health and Human Services, Public Health Services, NIH Publication 85-2185, 1985.

Pennington, L & MG Sarr: Liver transplantation. In: Experimental Surgery and Physiology: Induced Animal Models of Human Disease. Swindle, MM, RJ Adams, (eds.) Baltimore, MD: Williams and Wilkins. 294-295, 1988.

Pennington, LR: Renal transplantation in swine. In: Swindle, MM (ed.), Swine as Models in Biomedical Research, Ames, IA: Iowa State University Press, pp. 35-43, 1992.

Poppesko, P: Atlas of Topographical Anatomy of the Domestic Animals, Vol. 1, (2nd ed.) Philadelphia: W B Saunders Company, 1977.

Reeds, P & J Odle: Pigs as models for nutrient functional interaction. In: Tumbleson, ME and Schook LB (eds.), Advances in Swine in Biomedical Research, Vol. 2, NY: Plenum Publishers, pp. 709-711, 1996.

Riviere, JE, KF Bowman & NA Monteiro-Riviere: The isolated perfused porcine skin flap: A novel animal model for cutaneous toxicologic research. In: Swine in Biomedical Research, Vol. 1, Tumbleson, ME (ed.). NY: Plenum Press, pp. 657-666, 1986.

Sachs, DH: MHC-homozygous miniature swine. In: Swindle, MM (ed.), Swine as Models in Biomedical Research, Ames, IA: Iowa State University Press, pp. 3-15, 1992.

Sack, WO: Essentials of Pig Anatomy. In: Harowitz/ Kramer Atlas of Musculoskeletal Anatomy of the Pig, Veterinary Textbooks, Ithaca, NY, 1982.

Schantz, LD, K Laber-Laird, S Bingel & M Swindle: Pigs: Applied anatomy of the gastrointestinal tract, In: Jensen, SL, Gregersen, H, Moody, F and Shokouh-Amiri, MH (eds.), Essentials of Experimental Surgery: Gastroenterology, NY. Harwood Academic Publishers, pp. 2611-2619, 1996.

Skaanild, MT & C Friis: Characterization of the P450 system in Göttingen minipigs, Pharm Toxicol 80(Suppl 11): 28-33, 1997.

Smith, AC, B Knick, M Swindle & PC Gillette: A technique for conducting non-invasive cardiac electrophysiology studies in swine. J Invest Surg, 10(1-2): 25-30, 1997.

Smith, AC, FG Spinale & MM Swindle: Cardiac function and morphology of Hanford miniature swine and Yucatan miniature and micro swine. Lab Anim Sci. 40(l): 47-50, 1990.

Stanton, HC & HJ Mersmann: Swine in Cardiovascular Research, Vol. 1 & 2, CRC Press, Inc., Boca Raton, FL, 1986.

Stodkilde-Jorgensen, H, J Frokiaer, HJ Kirkeby, F Madsen & N Boye: Preparation of a cerebral perfusion model in the pig: Anatomic considerations. In: Tumbleson, ME (ed.), Swine in Biomedical Research, Vol. 1, NY. Plenum Publishers, pp. 719-725, 1986.

Swindle, MM: Basic Surgical Exercises Using Swine. New York, NY: Praeger Publishers, 1983.

Swindle, MM & RJ Adams: Experimental Surgery and Physiology: Induced Animal Models of Human Disease, Baltimore, MD: Williams & Wilkins, 1988.

Swindle MM: Surgery, Anesthesia and Experimental Techniques in Swine, Ames, IA: Iowa State University Press, 1998.

Swindle, MM, AC Smith, K Laber-Laird & L Dungan: Swine in biomedical research: management and models ILAR News, 36(l): 1-5, 1994.

Swindle, MM, PJ Horneffer, TJ Gardner, VL Gott, TS Hall, RS Sturat, WA Baumgartner, AM Borkon, E Galloway & BA Reitz: Anatomic and anesthetic considerations in experimental cardiopulmonary surgery in swine. Lab Anim Sci 36(4): 357-61, 1986.

Swindle, MM, AC Smith & BJS Hepburn: Swine as models in experimental surgery. J Invest Surg. l(l): 65-79, 1988.

Swindle, MM: Swine as Models in Biomedical Research, Ames IA: Iowa State University Press, 1992.

Swindle, MM, RP Thompson, BA Carabello, AC Smith, C Green & PC Gillette: Congenital cardiovascular disease. In: Swindle, MM (ed.), Swine as Models in Biomedical Research, Ames, IA: Iowa State University Press, pp. 176-184, 1992.

Terris, JM: Swine as a model in renal physiology and nephrology: An overview. In: Tumbleson, ME (ed.) Swine in Biomedical Research, Vol. II, pp. 1673-1690, 1986.

Tumbleson, ME: Swine in Biomedical Research, Vol. 1-3, New York, NY, Plenum Press, 1986.

Tumbleson, ME & LB Schook: In: Advances in Swine in Biomedical Research, (ed.) Vol. 1-2, Plenum Press, New York, NY, 1996.

Von Recum, AF (ed.): Handbook of Biomaterials Evaluation. NY: Macmillan Publishing, 1986.

White, CJ, SR Ramee, AK Banks, D Wiktor & HL Price: The Yucatan miniature swine: An atherogenic model to assess the early potency rates of an endovascular stent. In: Swindle, MM (ed.), Swine as Models in Biomedical Research, Ames, IA: Iowa State University Press, pp. 156-162, 1992.

Wiest, DB, MM Swindle, SS Garner, AC Smith & PC Gillette: Pregnant Yucatan miniature swine as a model for investigating fetal drug therapy. In: Tumbleson, M and Schook, L (eds.), Advances in Swine in Biomedical Research, Vo l. 2, p. 629-635, 1996.

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Bibliography

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---

ANATOMY

Done, S.H. (1982). **The anatomy and physiology of the porcine respiratory tract.** *The Pig Veterinary Society Proceedings* 9: 1-16.
NAL call number: SF971 P5

Frandson, R.D. (1981). ***Anatomy and Physiology of Farm Animals***, 3rd ed., Philadelphia: Lea and Febiger, Philadelphia.
NAL call number: SF761.F8 1981

Frandson, R.D. and T.L. Spurgeon (1992). ***Anatomy and Physiology of Farm Animals***, 5th ed., Philadelphia: Lea and Febiger, Philadelphia.
NAL call number: SF761.F8 1992

Gade, J., Norgaard, M.A., Andersen, C.B., et al. (Feb. 1999). **The porcine bronchial artery: surgical and angiographic anatomy.** *Journal of Anatomy* 194(Part 2): 241-247.

Getty, R. (1975). **Porcine**. In: *Sisson and Grossman's The Anatomy of Domestic Animals*, S. Sisson, J.D. Grossman, and R. Getty (eds.), Vol. 2, Philadelphia: W.B. Saunders, pp. 1215-1422.
NAL call number: SF761.S65 1975

Gilbert, S.G. (1966). ***Pictoral Anatomy of the Fetal Pig***, 2nd ed. Seattle: University of Washington Press.

Popesko, P. (1977). ***Atlas of Topographical Anatomy of the Domestic Animals***, Vol. 1, 2nd ed., Philadelphia: W.B. Saunders Company.
NAL call number: SF761.P63 1977

Sack, W.O. (1982). **Essentials of pig anatomy.** In: *Harowitz/Kramer Atlas of Musculoskeletal Anatomy of the Pig*, Veterinary Textbooks, Ithaca, NY.

Salinas-Zeballos, M.E., G.A. Zeballos, and P.M. Gootman (1986). **A stereotaxic atlas of the developing swine (*Sus scrofa*) forebrain.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 2, NY: Plenum Publishers, pp. 887-906.
NAL call number: RB125.C68 1985

Schantz, L.D., K. Laber-Laird, S. Bingel, and M. Swindle (1996). **Pigs: Applied anatomy of the gastrointestinal tract.** In: *Essentials of Experimental Surgery: Gastroenterology*, S.L. Jensen and H. Gregersen (eds.), NY: Harwood Academic Publishers, pp. 2611-2619, ISBN:3-7186-5496-2.

Sisson, S. (1975). **Appendages.** In: *Sisson and Grossman's The Anatomy of Domestic Animals*, S. Sisson, J.D. Grossman, and R. Getty (eds.), 5th ed., Vol. 2, Philadelphia: W.B. Saunders, pp. 1222-1230.
NAL call number: SF761.S65 1975

Sisson, S. and S.E. St. Clair (1975). **Porcine digestive system.** In: *Sisson and Grossman's The Anatomy of Domestic Animals*, S. Sisson, J.D. Grossman, and R. Getty (eds.), 5th ed., Vol. 2, Philadelphia: W.B. Saunders, pp. 1268-1282.
NAL call number: SF761.S65 1975

Swindle, M.M. (1998). **Biology, husbandry, handling, and anatomy.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 3-32.
NAL call number: RD29.5.S94S944 1998

Swindle, M.M. and D.L. Bobbie (1987). **Comparative anatomy of the pig.** *Charles River Technical Bulletin* 4(1): 1-4.

Swindle, M.M. and A.C. Smith (1998). **Comparative anatomy and physiology of the pig.** *Scandinavian Journal of Laboratory Animal Science* 25, 1-10.
NAL call number: QL55.S322

Truex, R.C. and M.Q. Smythe (1965). **Comparative morphology of the cardiac conduction tissue in animals.** *Annals of the New York Academy of Sciences* 127: 19-23.
NAL call number: 500 N484

ANESTHESIA

Updated information - AWIC Special Reference Brief: Swine Anesthesia and Analgesia, 2000-2010 (PDF | 2.17MB)

Aadahl, P., O.D. Saether, R. Stenseth, and H.O. Myhre (1995). **Haemodynamic effects of thoracic epidural anaesthesia during proximal aortic cross-clamping in pigs.** *Acta Anaesthesiolgica Scandinavica* 39: 23-7.

Adam, H.K., J.B. Glen, and P.A. Hoyle (1980). **Pharmacokinetics in laboratory animals of ICI 35 868: A new i.v. anaesthetic agent.** *British Journal of Anaesthesia* 52(8): 743-746.

Akeson, J., S. Bjorkman, K. Messeter, and I. Rosen (1993). **Low-dose midazolam antagonizes cerebral metabolic stimulation by ketamine in the pig.** *Acta Anaesthesiologica Scandinavica* 37: 525-531.

Akeson, J., S. Bjorkman, K. Messeter, I. Rosen, and M. Helfer (1993). **Cerebral pharmacodynamics of anaesthetic and subanaesthetic doses of ketamine in the normoventilated pig.** *Acta Anaesthesiologica Scandinavica* 37: 211-218.

Andersen, H., R. Fosse, K. Kuiper, and J. Nordrehaug (1998). **Ketorolac (Toradol(R)) as an analgesic in swine following transluminal coronary angioplasty.** *Laboratory Animals* 32: 307-315.
NAL call number: QL55.A1L3

Banic A., V. Krejci, D. Erni, A.M. Wheatley, and G.H. Sigurdsson (Jan. 1999). **Effects of sodium nitroprusside and phenylephrine on blood flow in free musculocutaneous flaps during general anesthesia.** *Anesthesiology* 90(1): 147-55.

Becker, M. (1986). **Anesthesia in Gottingen miniature swine used for experimental surgery.** *Laboratory Animal Science* 36(4): 417-419.
NAL call number: 410.9 P94

Benson, G.J. and J.C. Thurmon (1979). **Anesthesia of swine under field conditions.** *Journal of the American Veterinary Medical Association* 174(6): 594-596.
NAL call number: 41.8 Am3

Blobner M., R. Bogdanski, S. Jelen-Esselborn, J. Henke, W. Erhard, and E. Kochs (Feb. 1999). **Visceral resorption of intra-abdominal insufflated carbon dioxide in swine. [Viszerale Resorption von intraabdominell insuffliertem Kohlendioxid beim Schwein.]** *Anasthesiologie, Intensivmedizin, Notfallmedizin, Schmerztherapie* 34(2): 94-99.

Blum, J.R. (1988). **Laboratory animal anesthesia.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 329-345.
NAL call number: RB125 E9

Bollen, P.J., A.K. Hansen, and H.J. Rasmussen (2000). **Veterinary care: anesthesia and analgesia.** In: *The Laboratory Swine,* Boca Raton, FL: CRC Press LLC, pp. 61-82, ISBN: 0849310350.

Bolin, S.R., L.J. Runnels, and D.P. Bane (1992). **Chemical restraint and anesthesia.** In: *Diseases of Swine*, A.D. Leman, B. Straw, R.D. Glock, W.L. Mengeling, R.H.C. Penny, and E. Scholl (eds.), 7th ed., Iowa State University Press, Ames, IA, pp. 933-942.
NAL call number: SF971 D57 1992

Braun, W. (1993). **Anesthetics and surgical techniques useful in the potbellied pig.** *Veterinary Medicine* 88: 441-447.
NAL call number: 41.8 M69

Breese, C.E. and N.H. Dodman (1984). **Xylazine-ketamine-oxymorphone: An injectable anesthetic combination in swine.** *Journal of the American Veterinary Medical Association* 184(2): 182-183.
NAL call number: 41.8 Am3

Brower, R.W. and R.G. Merin (1979). **Left ventricular function and compliance in swine during halothane anesthesia.** *Anesthesiology* 50(5): 409-415.

Burrows, F.A., J.B. Norton, R.E. Creighton, and J. Fewel (1988). **Hemodynamic effect of ketamine in swine with mature autonomic nervous system.** *Anaesthesiologie und Reanimation* 13: 169-75.

Busund, R., L. Balteskard, G. Ronning, K. Hogasen, and A. Revhaug (1995). **Fatal myocardial depression and circulatory collapse associated with complement activation induced by plasma infusion in severe porcine sepsis.** *Acta Anaesthesiolgica Scandinavica* 39: 100-108.

Calzia, E., W. Stahl, T. Handschuh, T. Marx, G. Froba, M. Georgieff, and P. Rademacher (March 1999). **Continuous arterial P(O2) and P(CO2) measurements in swine during nitrous oxide and xenon elimination: prevention of diffusion hypoxia.** *Anesthesiology* 90(3): 829-834.

Cantor, G.H. D.B. Brunson, and T.W. Reibold (1981). **A comparison of four short-acting anesthetic combinations for swine.** *Veterinary Medicine. Small Animal Clinician* 76(5): 715-720.
NAL call number: 41.8 M69

Cheng, D., J. Moyers, R. Knutson, M. Gomez, and J. Tinker (1992). **Dose-response relationship of isoflurane and halothane versus coronary perfusion pressures.** *Anesthesiology* 76(1): 113-122.

Christiansen, I. J. (1976). **Caesarean section in sows anesthetized with Azaperone and Metomidate [Sedaperone og Hypnodil til anaestesi ved kejsersnit pa sooer].** *Nordisk Veterinaemedicin* 28: 88-99.
NAL call number: 41.8 N813

Conradie S., A. Coetzee, and J. Coetzee (Jan. 1999). **Anesthetic modulation of myocardial ischemia and reperfusion injury in pigs: comparison between halothane and sevoflurane.** *Canadian Journal of Anaesthesia* 46(1): 71-81.

Coppock, R.W., S.P. Swanson, H.B. Gelberg, and G.D. Koritz (1987). **Pharmacokinetics of diacetoxyscirpenol in cattle and swine: Effects of halothane.** *American Journal of Veterinary Research* 48(4): 691-695.
NAL call number: 41.8 Am3A

Crane, L., N. Gootman, and P.M. Gootman (1975). **Age-dependent cardiovascular effects of halothane anesthesia in neonatal pigs.** *Archive Internationales de Pharmacodynamie et de Therapie* 214(2): 180-187.

Danneberg, P., R. Bauer, K. Boke-Kuhn, W. Hoefke, F.J. Kuhn, E. Lehr, and A. Walland (1986). **General pharmacology of brotizolam in animals.** *Arzneimittel-Forschung* 36(3A): 540-51.

Dantzer, R., R.M. Bluthe and A. Tazi (1986). **Stress-induced analgesia in pigs.** *Annales de Recherches Veterinaires* 17: 147-151.
NAL call number: SF602 A5

Diederen, W. and R. Kadatz (1981). **Effects of AR-L 115BS, a new cardiotonic compound on cardiac contractility, heart rate and blood pressure in anaesthetized and conscious animals.** *Arzneimittel-Forschung. Drug Research* 31(1a): 146-150.
NAL call number: RS1 A7

Dimigen, J. and I. Reetz (1970). **Clinical trials with analgesia in the swine using the neuroleptic Azaperone and the hypnotic Metomidate. 1 [Versuche zur Schmerzausschaltung beim Schwein mit dem Neuroleptikum Azaperon und dem Hypnotikum Metomidat. 1.]** *Deutsch Tierarzliche Wochenschrift* 77: 470-473.
NAL call number: 41.8 D482

Dyess, D.L., E. Tacchi, R.Q. Powell, J.L Ardell, W.S. Roberts, and J.J. Ferrara (1994). **Development of a protocol to provide prolonged general anesthesia to pregnant sows.** *Journal of Investigative Surgery* 7: 235-242.

Eger, E., B. Johnson, R. Weiskopf, M. Holmes, N. Yasuda, A. Targ, and I. Rampil (1988). **Minimum alveolar concentration of I-653 and isoflurane in pigs: Definition of a supramaximal stimulus.** *Anesthesia and Analgesia* 67(12): 1174-1176.

Eger, E. II (1984). **Respiratory effects of nitrous oxide.** In: *Nitrous Oxide*, New York, NY, Elseiver, pp. 109-123, ISBN: 0-444-00860-8.

Ehler, W.J., J.W. Mack, D.L. Brown, and R.F. David (1985). **Avoidance of malignant hyperthermia in a porcine model for experimental open heart surgery.** *Laboratory Animal Science* 35(2):172-175.
NAL call number: 410.9 P94

Eisele, P.H., L. Talken, and J.H. Eisele (1985). **Potency of isoflurane and nitrous oxide in conventional swine.** *Laboratory Animal Science* 35(1): 76-78.
NAL call number: 410.9 P94

Ennis, M., C. Schneider, E. Nehring, and W. Lorenz (1991). **Histamine release induced by opioid analgesics: a comparative study using porcine mast cells.** *Agents Actions* 33: 20-22.

Erhardt, W., C. Ring, H. Kraft, A. Schmid, H.M. Weinmann, R. Ebert, B. Schlager, M. Schindele, R. Heinze, N. Lomholt, et al. (1989). **CO2-stunning of swine for slaughter from the anesthesiological viewpoint. [Die CO2-Betaubung von Schlachtschweinen aus anasthesiologischer Sicht].** *DTW Deutsche Tierarztliche Wochenschrift* 96: 92-99.
NAL call number: 41.8 D482

Errando, C.L., C. Sifre, S. Moliner, J.C. Valia, et al. (March-April 1999). **Subarachnoid ketamine in swine--pathological findings after repeated doses: acute toxicity study.** *Regional Anesthesia and Pain Medicine* 24(2): 146-52.

Fay, R. and E. Gallant (1990). **Halothane sensitivity of young pigs in vivo and in vitro.** *American Physiological Society* 259(1, Part2):R133-R138.

Flecknell, P.A. (1984). **The relief of pain in laboratory animals.** *Laboratory Animals* 18(2): 147-160.
NAL call number: QL55.A1L3

Flecknell, P.J. (1997). **Medetomidine and antipamezole: Potential uses in laboratory animals.** *Laboratory Animals* 26(2): 21-25.
NAL call number: QL55.A1L3

Flecknell, P.A. (1996). ***Laboratory Animal Anaesthesia: A Practical Introduction for Research Workers and Technicians***, 2nd ed., London; San Diego: Academic Press, 274p.
NAL call number: SF77 F54 1996

Foster, P.S., K.C. Hopkinson, and M.A. Denborough (1992). **Propofol anaesthesia in malignant hyperpyrexia susceptible swine.** *Clinical and Experimental Pharmacology and Physiology* 19(3): 183-186.

Ganter, M. and M. Kanngiesser (1991). **Effect of ketamine and its combinations with xylazine and climazolam on the circulation and respiration in swine. [Auswirkung von Ketamine und dessen Kombinationen mit Xylazin und Climazolam auf Kreislauf und Atmung beim Schwein.]** *Zentralblatt fur Veterinarmedizin A* 38: 501-509.
NAL call number: 41.8 Z5

Ganter, M. and K. Ruppert (1990). **The effect of the anesthetic Tilest in swine. [Uber die Wirkung des Anasthetikums Tilest beim Schwein.]** *DTW Deutsche Tierarztliche Wochenschrift* 97: 360-364.
NAL call number: 41.8 D482

Ganter, M., K. Ruppert, and M. Kanngiesser (1990). **The development of a residue-poor anesthesia in swine. [Untersuchungen zur Entwicklung einer belastungsarmen Anästhesia beim Schwein.]** *Berliner Muenchener Tierarztliche Wochenschrift* 103: 341-348.

Garrido S., M. Fraga , M.J. Martin, and J. Belda (1999). **Malignant hyperthermia during desflurane-succinylcholine anesthesia for orthopedic surgery.** *Anesthesiology* 90(4): 1208-1209.

Geers, R., C. Decanniere, H.Ville, P.V. Hecke, V. Goedseels, L. Bosschaerts, J. Deley, S. Janssens, and W. Nierynck (1992). **Identification of halothane gene carriers by use of in vivo 31P nuclear magnetic resonance spectroscopy in pigs.** *American Journal of Veterinary Research* 53: 1711-1714.
NAL call number: 41.8 Am3A

Gelman, S., E. Dillard, and E.L. Bradley (1987). **Hepatic circulation during surgical stress and anesthesia with halothane, isoflurane, or fentanyl.** *Anesthesia and Analgesia* 66(10): 936-943.

Gilbert, M., M. Mori and E. Myhre (1989). **Hemodynamic dose-responses to halothane and isoflurane are different in swine with and without critical coronary artery stenosis.** *Anesthesia and Analgesia* 68(6): 752-758.

Gilbert, M., S. Roberts, M. Mori, R. Blomberg, and J.H. Tinker (1988). **Comparative coronary vascular reactivity and hemodynamics during halothane and isoflurane anesthesia in swine.** *Anesthesiology* 68(2): 243-253.

Glen, J.B. (1980). **Animal studies of the anaesthetic activity of ICI 35 868.** *British Journal of Anaesthesia* 52(8): 731-742.

Glen, J.B., G.E. Davies, D.S. Thomson, S.C. Scarth, and A.V. Thompson (1979). **An animal model for the investigation of adverse responses to IV anaesthetic agents and their solvents.** *British Journal of Anaesthesia* 51(9): 819-827.

Gootman, P.M., H.L. Cohen, A.M. Steele, A.L. Sica, G. Condemi, M.R. Gandhi, and L.P. Eberle (1990). **Effects of anesthesia on efferent phrenic activity in neonatal swine.** *Brain Research* 522: 131-134.

Gordh, T. Jr., U. Feuk, and K. Norlen (1986). **Effect of epidural clonidine on spinal cord blood flow and regional**

and central hemodynamics in pigs. *Anesthesia and Analgesia* 65: 1312-1318.

Haasio, J., M.T. Pitkanen, J. Kytta, and P.H. Rosenberg, (1990). **Treatment of bupivacaine-induced cardiac arrhythmias in hypoxic and hypercarbic pigs with amiodarone or bretylium.** *Regional Anesthesia* 15: 174-179.

Hall, G.M., C. Young, A. Holdcroft, and J. Alaghband-Zadeh (1978). **Substrate mobilization during surgery. A comparison between halothane and fentanyl anesthesia.** *Anesthesiology* 33(10): 924-930.

Halsey, M.J., D.C. Sawyer, E.I. Eger, S.H. Bahlman, and D.M.K. Impelman (1971). **Hepatic metabolism of halothane, methoxyflurane, cyclopropane, ethrane, and forane in miniature swine.** *Anesthesiology* 35(1): 43-47.

Han, R.Y., J.Y. Fang, K.C. Sung, and O.Y.P. Hu (1999). **Mucoadhesive buccal disks for novel nalbuphine prodrug controlled delivery: effect of formulation variables on drug release and mucoadhesive performance.** *International Journal of Pharmaceutics* 177(2): 201-209.

Harrison, G.G. and D.F. Morrell (1980). **Response of MHS swine to i.v. infusion of lignocaine and bupivacaine.** *British Journal of Anaesthesia* 52: 385-387.

Harrison, G.G., D.F. Morrell, V. Brain, and G.G. Jaros (1987). **Acute calcium homeostasis in MHS swine.** *Canadian Journal of Anaesthesia* 34: 377-9.

Harter, M. and G. Wilsdorf (1914). ***Die bedeutung des schweines fur die fleischvrsorgung.*** Berlin, Arbeitne der Deutscher Landwirtschaftgesellschaft, Heft 270.

Heinritzi, K. and H.E. Konig (1988). **Anesthesia in swine. [Anasthesie beim Schwein.]** *Tierarztliche Praxis* 16: 45-52.

Henrikson, H., M. Jensen Waern, and G. Nyman (1995). **Anaesthetics for general anaesthesia in growing pigs.** *Acta Veterinaria Scandinavica* 36: 401-411.
NAL call number: 41.8 AC87

Hermansen, K., L.E. Pedersen, and H.O. Olesen (1986). **The analgesic effect of buprenorphine, etorphine and pethidine in the pig: a reandomized double blind cross-over study.** *Acta Pharmacologica et Toxicologica* 59(1): 27-35.

Hickey, R.F. (1994). **Regional vasodilating properties of isoflurane in normal swine myocardium.** *Anesthesiology* 80: 574-581.

Holmes, M., R. Weiskopf, E. Eger, B.H. Johnson, and I.J. Rampil (1990). **Hepatocellular integrity in swine after prolonged desflurane (I-653) and isoflurane anesthesia: evaluation of plasma alanine aminotransferase activity.** *Anesthesia and Analgesia* 71(3): 249-253.

Holzchuh, M.P. and E. Cremonesi (1991). **Anaesthesia in pigs. Analysis of azaperone and etomidate effects separately and in associations.** *Proceedings of the 4th International Congress of Veterinary Anaesthesia*, Utrecht, The Netherlands, pp. 197-200.

Hoyt, R.F. Jr, M.D. Hayre, K.T. Dodd, and Y.Y. Phillips (1986). **Long acting intramuscular anesthetic regimen for swine.** *Laboratory Animal Science* 36(4): 413-416.
NAL call number: 410.9 P94

Hudson, L.C. and B.A. Gilroy (1986). **Percutaneous transtracheal ventilation in swine.** *Laboratory Animal Science* 36(4): 420-424.
NAL call number: 410.9 P94

Hughes, J.M., J.C. Sill, M. Pettis, and D.K. Rorie (1993). **Nitrous oxide constricts epicardial coronary arteries in pigs: evidence suggesting inhibitory effects on the endothelium.** *Anesthesia and Analgesia* 77: 232-240.

Jenkins, W.L. (1987). **Pharmacologic aspects of analgesic drugs in animals: an overview.** *Journal of the American Veterinary Association* 191(10): 1231-1240.
NAL call number: 41.8 Am3

Jorgensen, J.S. and A.L. Cannedy (Nov. 1996). **Physiologic and pathophysiologic considerations for ruminant and swine anesthesia.** *The Veterinary Clinics of North America. Food Animal Practice* 12(3): 481-500.
NAL call number: SF601 V535

Kamal, G.D., E.L. Dove, D.J. Tatman, and S. Puzhankara (1995). **Estimating transient physiologic responses to rapid changes in inspired anesthetic agent concentration: A new approach using mathematical models.** *Anesthesiology* 83(3A): A439

Kanazawa, H., R. Nishimura, N. Sasaki, A. Takeuchi, N. Takai, Y. Nagata, and Y. Matsushima (1995). **Determination of medetomidine, atipamezole and midazolam in pig plasma by liquid chromatography-mass spectrometry.** *Biomedical Chromatography* 9: 188-191.

Kates, R.A., A.P. Zaggy, E.A. Norfleet, and K.R. Heath (1984). **Comparative cardiovascular effects of verapamil, nifedipine, and diltiazem during halothane anesthesia in swine.** *Anesthesiology* 61(1): 10-18.

Ko, J.C.H., B.L. Williams, C.J. McGrath, C.E. Short, and E.R. Rogers (1997). **Comparison of anesthetic effects of telazol-xylazine-xylazine, telazol-xylazine-butorphanol and telazol-xylazine-azaperone combinations in swine.** *Contemporary Topics in Laboratory Animal Science* 35(5): 71-74.
NAL call number: SF405.5 A23

Ko, J.C., B.L. Williams, E.R. Rogers, L.S. Pablo, W.C. McCaine, and C.J. McGrath, (1995). **Increasing xylazine dose-enhanced anesthetic properties of telazol-xylazine combination in swine.** *Laboratory Animal Science* 45: 290-294.
NAL call number: 410.9 P94

Ko, J.C.H., B.L. Williams, V.L. Smith, C.J. McGrath, and J.D. Jacobson (1993). **Comparison of Telazol, Telazol-Ketamine, Telazol-Xylazine and Telazol-Ketamine-Xylazine as chemical restraint and anesthetic induction combination in swine.** *Laboratory Animal Science* 43(5): 476-480.
NAL call number: 410.9 P94

Koblin, D.D., R.B. Weiskopf, M.A. Holmes, K. Konopka, I.J. Rampil, E.I. Eger, L. Waskell. (1989). **Metabolism of I-653 and isoflurane in swine.** *Anesthesia and Analgesia* 68(2): 147-149.

Kohn, D.H., S.K. Wixson, W.J. White, and G.J. Benson (1997). ***Anesthesia and Analgesia in Laboratory Animals***, Academic Press, New York, NY 426p.
NAL call number: SF996.5 A54 1997

Kyle, O.C., S. Novak, and H. Bolooki (1979). **General anesthesia in pigs.** *Laboratory Animal Science* 29(1): 123-124.
NAL call number: 410.9 P94

Kuipers, J.A., F. Boer, E. Olofsen, et. al. (April 1999). **Recirculatory and compartmental pharmacokinetic modeling of alfentanil in pigs: the influence of cardiac output.** *Anesthesiology* 90(4): 1146-57.

Kumar, A. and N. McCullough (1979). **General anesthesia for newborn pigs.** *Laboratory Animal Science* 29(2): 251-252.
NAL call number: 410.9 P94

Laber-Laird, K., A.C. Smith, M.M. Swindle and J. Colwell (1992). **Effects of isoflurane anesthesia on glucose clearance in Yucatan minipigs.** *Laboratory Animal Science* 42(6): 579-581.
NAL call number: 410.9 P94

Lauer, S., A. Zanella, A. Kortel, J. Henke, S. Scharvogel, J. Unshelm, M. Goldberg, H. Eichinger, O. Petrowicz, T.

Brill, and et al. (1994). **CO2/O2 anesthesia for the castration of male piglets (preliminary results). [Die CO2/O2-Anasthesie zur Kastration von mannlichen Ferkeln (vorlaufige Ergebnisse).]** *DTW Deutsche Tierarztliche Wochenschrift* 101: 110-113.
NAL call number: 41.8 D482

Loscher, W., G. Fredow, and M. Ganter (1991). **Comparison of pharmacodynamic effects of the non-competitive NMDA receptor antagonists MK-801 and ketamine in pigs.** *European Journal of Pharmacology* 192: 377-382.

Loscher, W., M. Ganter, and C.P. Fassbender (1990). **Correlation between drug and metabolite concentrations in plasma and anesthetic action of ketamine in swine.** *American Journal of Veterinary Research* 51(3): 391-398.
NAL call number: 41.8 Am3A

Lundeen, G., M. Manohar, and C. Parks (1983). **Systemic distribution of blood flow in swine while awake and during 1.0 and 1.5 MAC isoflurane anesthesia with or without 50% nitrous oxide.** *Anesthesia and Analgesia* 62(5): 499-512.

Lunn, J.K., T.H. Stanley, J. Eisele, L. Webster, and A. Woodard (1979). **High dose fentanyl anesthesia for coronary artery surgery: Plasma fentanyl concentrations and influence of nitrous oxide on cardiovascular responses.** *Anesthesia and Analgesia* 58(5): 390-395.

Manohar, M. (1985). **Regional distribution of porcine brain blood flow during 50% nitrous oxide administration.** *American Journal of Veterinary Research* 46(4): 831-835.
NAL call number: 41.8 Am3A

Manohar, M. and C. Parks (1984). **Porcine regional brain and myocardial blood flows during halothane-0_2 and halothane-nitrous oxide anesthesia: Comparisons with equipotent isoflurane anesthesia.** *American Journal of Veterinary Research* 45(3): 465-473.
NAL call number: 41.8 Am3A

Manohar, M. and C. Parks (1984). **Regional distribution of brain and myocardial perfusion in swine while awake and during 1.0 and 1.5 MAC isoflurane anaesthesia produced without or with 50% nitrous oxide.** *Cardiovascular Research* 18(6): 344-353.

McGlone, J.J. and J.M. Hellman (1988). **Local and general anesthetic effects on behavior and performance of two and seven week old castrated and uncastrated piglets.** *Journal of Animal Science* 66(12): 3049-3058.
NAL call number: 49 J82

Merin, R.G., P.D. Verdouw, and J.W. deJong (1982). **Myocardial functional and metabolic responses to ischemia in swine during halothane and fentanyl anesthesia.** *Anesthesiology* 56(2): 84-92.

Merin, R.G., P.D. Verdouw, and J.W. deJong (1977). **Dose-dependent depression of cardiac function and metabolism by halothane in swine (*Sus scrofa*).** *Anesthesiology* 46(6): 417-423.

Mobley, D., M. Mitchell, M. Landi, and T. Halve (1994). **Comparative study on the effects of isoflurane, isoflurane with nitrous oxide, and thiamylal on percent myocardial infarct and percent area at risk in acute and chronic pigs.** *Contemporary Topics in Laboratory Animal Science* 33(3): 63-66.
NAL call number: SF405.5 A23

Modig, J. (1987). **Positive effects of ketamine v. metomidate anesthesia on cardiovascular function, oxygen delivery and survival. Studies with a porcine endotoxin model.** *Acta Chirurgica Scandinavica* 153: 7-13.

Mongan, P. D. and Peterson, R. E. (1993). **Intravenous anesthetic alterations on the spinal-sciatic evoked response in swine.** *Anesthesia and Analgesia* 77: 149-154.

Moon, P. F. and Smith, L. J. (1996). **General anesthetic techniques in swine.** *The Veterinary Clinics of North*

America. Food Animal Practice 12: 663-691.
NAL call number: SF601 V535

Musser, J.B., J.L. Fontana, and P.D. Mongan (March 1999). **The anesthetic and physiologic effects of an intravenous administration of a halothane lipid emulsion (5% vol/vol).** *Anesthesia and Analgesia* 88(3): 671-675.

Nagano, K., S. Gelman, D. Parks, and E.L. Bradley (1990). **Hepatic circulation and oxygen supply-uptake relationships after hepatic ischemic insult during anesthesia with volatile anesthetics and fentanyl in miniature pigs.** *Anesthesia and Analgesia* 70: 53-62.

Nishimura, R., H. Kim, S. Matsunaga, K. Hayashi, N. Sasaki, H. Tamura, and A. Takeuchi (1993). **Antagonistic effects of atipamezole and flumazenil on medetomidine-midazolam induced sedation in laboratory pigs.** *Journal of Veterinary Medical Science* 55: 789-793.
NAL call number: SF604 J342

Nishimura, R., H.Y. Kim, S. Matsunaga, K. Hayashi, H. Tamura, N. Sasaki, and A. Takeuchi (1994). **Effects of medetomidine-midazolam on plasma glucose and insulin concentrations in laboratory pigs.** *Journal of Veterinary Medical Science* 56: 559-561.
NAL call number: SF604 J342

Nishimura, R., H.Y. Kim, S. Matsunaga, K. Hayashi, H. Tamura, N. Sasaki, and A. Takeuchi (1994). **Cardiopulmonary effects of medetomidine-midazolam and medetomidine-midazolam- atipamezole in laboratory pigs.** *Journal of Veterinary Medical Science* 56: 359-63.
NAL call number: SF604 J342

Nishimura, R., H. Kim, S. Matsunaga, K. Hayashi, H. Tamura, N. Sasaki, and A. Takeuchi (1993). **Comparison of sedative and analgesic/anesthetic effects induced by medetomidine, acepromazine, azaperone, droperidol and midazolam in laboratory pigs.** *Journal of Veterinary Medical Science* 55: 687-690.
NAL call number: SF604 J342

Nishimura, R., H. Kim, S. Matsunaga, K. Hayashi, H. Tamura, N. Sasaki, and A. Takeuchi (1993). **Sedative effect induced by a combination of medetomidine and midazolam in pigs.** *Journal of Veterinary Medical Science* 55: 717-722.
NAL call number: SF604 J342

Nishimura, R., H. Kim, S. Matsunaga, M. Sakaguchi, N. Sasaki, H. Tamura, and A. Takeuchi (1992). **Antagonism of medetomidine sedation by atipamezole in pigs.** *Journal of Veterinary Medical Science* 54: 1237-1240.
NAL call number: SF604 J342

Nishimura, R., M. Sakaguchi, M. Mochizuki, N. Sasaki, H. Takahashi, H. Tamura, and A. Takeuchi (1992). **A balanced anesthesia with a combination of xylazine, ketamine and butorphanol and its antagonism by yohimbine in pigs**. *Journal of Veterinary Medical Science* 54: 615-620.
NAL call number: SF604 J342

Nishimura, R., M. Sakaguchi, N. Sasaki, H. Tamura, and A. Takeuchi (1991). **Medetomidine-ketamine and medetomidine-butorphanol-ketamine anesthesia in pigs.** In: *Proceedings of the 4th International Congress of Veterinary Anesthesia*, L.W. Hall (ed.), pp. 177-200.

Noldge, G.F., H.J. Priebe, W. Bohle, K.J. Buttler, and K. Geiger (1991). **Effects of acute normovolemic hemodilution on splanchnic oxygenation and on hepatic histology and metabolism in anesthetized pigs.** *Anesthesiology* 74: 908-918.

Noldge, G.F., H.J. Priebe, and K. Geiger (1992). **Splanchnic hemodynamics and oxygen supply during acute normovolemic hemodilution alone and with isoflurane-induced hypotension in the anesthetized pig.** *Anesthesia and Analgesia* 75: 660-674.

Noldge, G.F.E., H.J. Priebe, K.H. Kopp, T. Pelchen, W. Riegel, and K. Geiger (1990). **Differences in effects of isoflurane and enflurane on splanchnic oxygenation and hepatic metabolism in the pig.** *Anesthesia and Analgesia* 71: 258-267.

Nystrom, E.U., J.E. Heavner and C.W. Buffington (May 1999). **Blood pressure is maintained despite profound myocardial depression during acute bupivacaine overdose in pigs.** *Anesthesia and Analgesia* 88(5): 1143-1148.

Ochs, H.R., D.J. Greenblatt, W. Eichelkraut, C. Bakker, R. Gobel and N. Hahn. (1987). **Hepatic vs. gastrointestinal presystemic extraction of oral midazolam and flurazepam.** *The Journal of Pharmacology and Experimental Therapeutics* 243(3): 852-856.

Otto, K.A. (Aug. 1998). **Pharmaceutical control of pain in large animals.** *Applied Animal Behaviour Science* 59(1/3): 157-169.
NAL call number: QL750 A6

Pabelick, C.M., M.S. Kannan, Y.S. Prakash, D.O. Warner, and G.C. Sieck (Jan. 1999). **Halothane induces calcium release via IP3 receptor channels in airway smooth muscle.** *Biophysical Journal* 76(1, Part 2): A291.

Pabelick, C.M., Y.S. Prakash, M.S. Kannan, K.A. Jones, D.O. Warner, and G.C. Sieck (Jan. 1999). **Effect of halothane on intracellular calcium oscillations in porcine tracheal smooth muscle cells.** *American Journal of Physiology* 276(1 Part 1): L81-89.

Pender, E.S., C.V. Pollack, B.N. Woodall, and B.R. Parks (1991). **Intraosseous administration of lorazepam: Same-dose comparison with intravenous administration in the weanling pig.** *Journal of the Mississippi State Medical Association* 32(10): 365-368.

Pfenninger, E., A. Grunert, W. Muller, and W. Siegler (1984). **Buprenorphine-nitrous oxide-oxygen anesthesia in swine as an animal model.** *Zeitschrift Fur Versuchstierkunde* 26, 67-76.
NAL call number: 410 Z36

Portier, D.B. and C.A. Slusser (1985). **Azaperone: a review of a new neuroleptic agent for swine.** *Veterinary Medicine* 80(3): 88-92.
NAL call number: 41.8 M69

Priebe, H.J. (1989). **Isoflurane and coronary hemodynamics.** *Anesthesiology* 71(6): 960-976.

Quintin, L., D.G. Whalley, J.E. Wynands, J.E. Morin, and J. Burke (1981). **High dose fentanyl anesthesia with oxygen for aorta-coronary bypass surgery.** *Canadian Anaesthetists' Society Journal* 28(4): 314-320.

Raff, M. and G. Harrison (1989). **The screening of propofol in MHS swine.** *Anesthesia and Analgesia* 68(6): 750-751.

Ragan, H.A., M.F. Gillis (1975). **Restraint, venipuncture, endotracheal intubation and anesthesia of miniature swine.** *Laboratory Animal Science* 25(4): 409-419.
NAL call number: 410.9 P94

Rampil, I., R. Weiskopf, J. Brown, E. Eger, B. Johnson, M. Holmes, and J. Donegan (1988). **I653 and isoflurane produce similar dose-related changes in the electroencephalogram of pigs.** *Anesthesiology* 69(3): 298-302.

Ramsey, D.E., N. Aldred, and J.M. Power (1993). **A simplified approach to the anesthesia of porcine laparoscopic surgical subjects.** *Laboratory Animal Science* 43(4): 336-337.
NAL call number: 410.9 P94

Randolph, M.M. (Spring 1994). **Post-operative care and analgesia of farm animals used in biomedical research.** *Animal Welfare Information Center Newsletter* 5(1): 11-13. Available at
http://www.nal.usda.gov/awic/newsletters/v5n1.htm

NAL call number: aHV4701 A952

Riebold, T.W., D.O. Goble, and D.R. Geiser (1982). ***Large Animal Anesthesia: Principles and Techniques***, 2nd ed., Ames, IA: Iowa State University Press, 304p.
NAL call number: SF914 R53 1995

Riebold, T.W. and J.C. Thurmon (1986). **Anesthesia in swine.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, NY: Plenum Press, p. 243-254.
NAL call number: RB125.C68 1985

Riesgo Benito, M. J., J. Elizaga, M.J. Gomez Nebreda, M. Galinanes, J. Penas, and D. Garcia Dorado (1985). **Anesthesia in swine for experimental surgery. Ligation of the anterior descending coronary artery. [Anestesia en cerdos para cirugia experimental. Ligadura de la arteria coronaria descendente anterior.]** *Revista Espanola de Anestesiologia Y Reanimacion* 32: 208-209.

Riou, B., A. Rimailho, M. Galliot, R. Bourdon, and Y. Huet (1988). **Protective cardiovascular effects of diazepam in experimental acute chloroquine poisoning.** *Intensive Care Medicine*, 14(6): 610-616.

Roberts, S.L., M. Gilbert, and J.H. Tinker (1987). **Isoflurane has a greater margin of safety than halothane in swine with and without major surgery or critical coronary stenosis.** *Anesthesia and Analgesia* 66(6): 485-491.

Rogers, G.P., D.M. Cromeens, S.T. Minor, and M.M. Swindle (1988). **Bretylium and diltiazem in porcine cardiac procedures.** *Journal of Investigative Surgery* 1(4): 321-326.

Rosenberg, H. (1988). **Management of patients in whom trismus occurs following succinylcholine.** *Anesthesiology* 68(4): 653-654.

Sager, M. (1993). **Pain prevention and pain treatment in small and large domestic animals. [Schmerzprophylaxe und Schmerztherapie bei kleinen und grossen Haustieren.]** *Tierarztliche Praxis* 21: 87-94

Sakaguchi, M., R. Nishimura, N. Sasaki, T. Ishiguro, H. Tamura, and A.Takeuchi (1996). **Anesthesia induced in pigs by use of a combination of medetomidine, butorphanol, and ketamine and its reversal by administration of atipamezole.** *American Journal of Veterinary Research* 57: 529-534.
NAL call number: 41.8 Am3A

Sakaguchi, M., R. Nishimura, N. Sasaki, T. Ishiguro, H. Tamura, and A. Takeuchi (1993). **Cardiopulmonary effects of a combination of medetomidine and butorphanol in atropinized pigs.** *Journal of Veterinary Medical Science* 55: 497-499.
NAL call number: SF604 J342

Sakaguchi, M., R. Nishimura, N. Sasaki, T. Ishiguro, H. Tamura, and A. Takeuchi (1995).**Chemical restraint by medetomidine-ketamine and its cardiopulmonary effects in pigs.** *Zentralblatt fur Veterinarmedizin A* 42: 293-299.
NAL call number: 41.8 Z5

Sakaguchi, M., R. Nishimura, N. Sasaki, T. Ishiguro, H. Tamura, and A. Takeuchi (1992). **Enhancing effect of butorphanol on medetomidine-induced sedation in pigs.** *Journal of Veterinary Medical Science* 54: 1183-1185.
NAL call number: SF604 J342

Sakaguchi, M., R. Nishimura, N. Sasaki, T. Ishiguro, H. Tamura, and A. Takeuchi (1992). **Sedative effects of medetomidine in pigs.** *Journal of Veterinary Medical Science* 54: 643-647.
NAL call number: SF604 J342

Schieber, R.A., A. Namnoum, A. Sugden, G.K. Shiu, R. Orr, and D. Cook (1986). **Hemodynamic effects of isoflurane in the newborn piglet: comparison with halothane.** *Anesthesia and Analgesia* 65(6): 633-638.

Schleman, M., N. Gootman, and P.M. Gootman (1979). **Cardiovascular and respiratory responses to right atrial injections of phenyl diguanide in pentobarbital-anesthetized newborn piglets.** *Pediatric Research* 13(11): 1271-1274.

Schumann, R.E., M.M. Swindle, B.J. Knick, C.L. Case, and P.C. Gillette (1994). **High dose narcotic anesthesia using sufentanil in swine for cardiac catheterization and electrophysiologic studies.** *Journal of Investigative Surgery* 7(3): 243-248.

Schumann, R.E., M. Harold, P.C. Gillette, M.M. Swindle, and C.H. Gaymes (1993). **Prophylactic treatment of swine with bretylium for experimental cardiac catheterization.** *Laboratory Animal Science* 43(3): 244-246.
NAL call number: 410.9 P94

Schwilden, H. and H. Stoeckel (1990). **Effective therapeutic infusions produced by closed-loop feedback control of methohexital administration during total intravenous anaesthesia with fentanyl.** *Anaesthesiology* 73: 225-229.

Segal, B.S., J.G. Inman, and I.R. Moss (1991).**Occlusion pressure response to inspiratory flow-resistive loading in anesthetized swine.** *Journal of Applied Physiology* 71: 1774-1779.

Sellke, F.W., K.W. Park, and E. Lowenstein (March 1999). **Vascular effects of isoflurane: no inconsistency between data [letter].** *Anesthesiology* 90(3): 919-920.

Shawley, R.V. (Spring 1994). **Large animal anesthesia.** *Animal Welfare Information Center Newsletter* 5(1): 8-10.
Available at http://www.nal.usda.gov/awic/newsletters/v5n1.htm
NAL call number: aHV4701 A952

Short, C.E. (1987). **Inhalant anesthetics.** In: *Principles and Practice of Veterinary Anesthesia*, Baltimore, MD: Williams and Wilkins, pp. 70-90.
NAL: SF914 P74

Short, L.H., R.E. Peterson, and P.D. Mongan (1993). **Physiologic and anesthetic alterations on spinal-sciatic evoked responses in swine.** *Anesthesia and Analgesia* 76: 259-65.

Silverman, J. and W.W. Muir III (1993). **A review of lab animal anesthesia with chloral hydrate and chloralose.** *Laboratory Animal Science* 43(3): 210-216.
NAL call number: 410.9 P94

Skarda, R.T. (1986). **Techniques of local analgesia in ruminants and swine.** *Veterinary Clinics of North America. Food Animal Practice* 2: 621-663.
NAL call number: SF601 V535

Skarda, R. (1987). **Local and regional analgesia.** In: *Principles and Practice of Veterinary Anesthesia* C.E. Short (ed.), Baltimore, MD: Williams and Wilkins, pp. 91-133.
NAL call number: SF914 P74

Skarda, R.T. (1996). **Local and regional anesthesia in ruminants and swine.** *Veterinary Clinics of North America. Food Animal Practice* 12: 579-626.
NAL call number: SF601 V535

Slogoff, S. and A.S. Keats (1989). **Randomized trial of primary anesthetic agents on outcome of coronary artery bypass operations.** *Anesthesiology* 70(2): 179-188.

Smith, A.C., W. Ehler, and M.M. Swindle (1997). **Anesthesia and analgesia in swine.** In: *Anesthesia and Analgesia in Laboratory Animals*, D.H. Kohn, S.K. Wixson, W.J. White, and G.J. Benson (eds.), NY: Academic Press, pp. 313-366.
NAL call number: SF996.5 A54 1997

Smith, A.C. and M.M. Swindle (1994). ***Research Animal Anesthesia, Analgesia and Surgery***, Greenbelt, MD., SCAW, 170p.
NAL call number: SF914 R49 1994

Smith, A.C., J.L. Zellner, F.G. Spinale, and M.M. Swindle (1991). **Sedative and cardiovascular effects of midazolam in swine.** *Laboratory Animal Science* 41(2): 157-161.
NAL call number: 410.9 P94

Softeland, E., T. Framstad, T. Thorsen, and H. Holmsen (1995). **Evaluation of thiopentone-midazolam-fentanyl anaesthesia in pigs.** *Laboratory Animals* 29, 269-75.
NAL call number: QL55.A1L3

Softeland, E., T. Hillestad, T. Framstad, T. Thorsen, and H. Holmsen (1995). **A transport and monitoring unit for piglets under general anaesthesia.** *Laboratory Animals* 29: 282-285.
NAL call number: QL55.A1L3

Steffey, E.P. and E.I. Eger (1985). **Nitrous oxide in veterinary practice and animal research.** In: *Nitrous Oxide*, New York, NY, Elseiver, pp. 305-312, ISBN: 0-444-00860-8.

Stevens, W.C., E.I. Eger, A. White, M.J. Halsey, W. Munger, R.D. Gibbons, W. Dolan, and R. Sharge (1975). **Comparative toxicities of halothane, isoflurane, and diethyl ether at subanesthetic concentrations in laboratory animals.** *Anesthesiology* 42(4): 408-419.

Stromskag, K.E., J. Pillgram Larsen, F. Reiestad, and P.A. Steen (1990). **Hemodynamic effects of interpleural analgesia in pigs.** *Acta Anaesthesiolgica Scandinavica* 34: 342-345.

Stump, K.C., L.R. Pennington, J.F. Burdick, T. Hoshino, and M.M. Swindle (1986). **Practical anesthesia for orthotopic liver transplantation in swine.** In: *Proceedings of the 2nd annual meeting of the Academy of Surgical Research*, Powers, D.L. (ed.) Clemson, SC: Clemson University Press, pp. 10-12.

Svendsen, P. and A.M. Carter (1989). **Blood gas tensions, acid-base status and cardiovascular function in miniature swine anaesthetized with halothane and methoxyflurane or intravenous metomidate hydrochloride.** *Pharmacology and Toxicology* 64(1): 88-93.

Swindle, M.M. (1998). **Anesthesia and analgesia.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 33-64.
NAL call number: RD29.5.S94S944 1998

Swindle, M.M. (1991). **Anesthetic and perioperative techniques in swine.** *Charles River Digest* 9: 1.
NAL call number: 442.8 C38

Swindle, M.M. (1994). **Anesthetic and perioperative techniques in swine: An update.** *Charles River Technical Bulletin* 12(1): 1-4.
NAL call number: QL55 C53

Swindle, M.M., R.E. Schumann, W.S. Johnson, B. Knick, A.C. Smith, B.A. Carabello, M. Zile, C.L. Case, and P.C. Gillette (1993). **High dose narcotic anesthesia using sufentanyl in swine and dogs.** In: *Proceedings of the 4th International Conference of Veterinary Anesthesia*, L.W. Hall (ed.), Utrecht, NTH: *Journal of Veterinary Anesthesia (Special Supplement)*: 273-276.

Swindle, M.M. and A.C. Smith (1994). **Swine: Anesthesia and analgesia.** In: *Research Animal Anesthesia, Analgesia and Surgery*, A.C. Smith and M.M. Swindle (eds.), Greenbelt, MD., SCAW, pp. 107-110.
NAL call number: SF914 R49 1994

Swindle, M.M., D.B. Wiest, A.C. Smith, S.S. Garner, C.C. Case, R.P. Thompson, D.A. Fyfe, and P.C. Gillette (1996).

Fetal surgical protocols in Yucatan miniature swine. *Laboratory Animal Science* 46(1): 90-95.
NAL call number: 410.9 P94

Taga, K., S. Fukuda, N. Nishimura, A. Tsukui, M. Morioka, and K. Shimoji (1990). **Effects of thiopental, pentobarbital, and ketamine on endothelin-induced constriction of porcine cerebral arteries.** *Anesthesiology* 72: 939-941.

Tendillo, F.J., A. Mascias, M. Santos, I.A. Segura, F. San Roman, and J.L. Castillo Olivares (1996). **Cardiopulmonary and analgesic effects of xylazine, detomidine, medetomidine, and the antagonist atipamezole in isoflurane-anesthetized swine.** *Laboratory Animal Science* 46: 215-219.
NAL call number: 410.9 P94

Tendillo, F.J., A.M. Pera, A. Mascias, M. Santos, I.A. Gomez de Segura, F. San Roman, and J.L. Castillo Olivares (1995). **Cardiopulmonary and analgesic effects of epidural lidocaine, alfentanil, and xylazine in pigs anesthetized with isoflurane.** *Veterinary Surgery* 24: 73-77.
NAL call number: SF911 V43

Tendillo, F.J., A. Mascias, M. Santos, I.A. de Segura, and J.L. Castillo Olivares (1996). **Cardiorespiratory and analgesic effects of continuous infusion of propofol in swine as experimental animals. [Efectos cardiorrespiratorios y analgesicos de la infusion continua de propofol en el cerdo como animal de experimentacion.]** *Revista Espanola de Anestesiologia Y Reanimacion* 43: 126-9.

Thurmon, J.C. and G.J. Benson (1987). **Special anesthesia considerations of swine.** In: *Principles and Practice of Veterinary Anesthesia*, Baltimore, MD: Williams and Wilkins, pp. 308-322.
NAL call number: SF914 P74

Thurmon, J.C., W.J. Tranquilli, and G.J. Benson (1996). ***Lumb and Jones' Veterinary Anesthesia***, 3rd ed., Williams and Wilkins, Baltimore, MD, 928p.
NAL call number: SF914 L82 1996

Thurmon, J.C. and G.J. Benson (1987). **Pharmacologic consideration in selection of anesthetics for animals.** *Journal of the American Veterinary Medical Association*191(10): 1245-1251.
NAL call number: 41.8 Am3

Thurmon, J.C., G.J. Benson and W.J. Tranquilli, and W.A. Olson (1988). **The anesthetic and analgesic effects of telazol and xylazine in pigs: evaluating clinical trials.** *Veterinary Medicine* 83(8): 841-845.
NAL call number: 41.8 M69

Thurmon, J.C. and W.J. Tranquilli (1986). **Anesthesia for cardiovascular research.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J. Mersmann (eds.), Vol. 1, Boca Raton, FL: CRC Press, pp. 39-59.
NAL call number: RC669 S87

Thurmon, J.C., W.J. Tranquilli, and G.J. Benson (1986). **Cardiopulmonary responses of swine to intravenous infusion of guaifenesin, ketamine, and xylazine.** *American Journal of Veterinary Research* 47: 2138-2140.
NAL call number: 41.8 Am3A

Thurmon, J.C., W.J. Tranquilli, and G.J. Benson (1996). **Perioperative Pain and Distress** In: *Lumb and Jones' Veterinary Anesthesia*. Williams and Wilkins, Baltimore, MD, pp. 40-60, ISBN: 0-683-08238-8.
NAL call number: SF914 L82 1996

Tranquilli, W.J., J.C. Thurmon, and G.J. Benson (1985). **Anesthetic potency of nitrous oxide in young swine (*Sus scrofa*).** *American Journal of Veterinary Research* 46(1): 58-60.
NAL call number: 41.8 Am3A

Tranquilli, W., J. Thurmon, and G. Benson (1986). **Halothane-cathechalomine arrhythmias in swine *(Sus scrofa*).**

American Journal of Veterinary Research 47(10): 2134-2137.
NAL call number: 41.8 Am3A

Tranquilli, W.J., J.C. Thurmon, and G.J. Benson (1983). **Organ blood flow and distribution of cardiac output in hypocapnia ketamine-anesthetized swine.** *American Journal of Veterinary Research* 44(8): 1578-1582.
NAL call number: 41.8 Am3A

Tranquilli, W.J., J.C. Thurmon, G.J. Benson, and E.P. Steffey (1988). **Determination of halothane MAC in swine.** *Anesthesia and Analgesia* 67(6): 597-598.

Tranquilli, W.J., J.C. Thurmon, G.J. Benson, and E.P. Steffey (1983). **Halothane potency in pigs (*Sus scrofa*).** *American Journal of Veterinary Research* 44(6): 1106-1107.
NAL call number: 41.8 Am3A

Trim, C.M. and G.A. Gilroy (1985). **Cardiopulmonary effects of a xylazine and ketamine combination in pigs.** *Research in Veterinary Science* 38(1): 30-34.
NAL call number: 41.8 R312

Trudeau, V.L., J.C. Meijer, D.F.M. van de Wiel, and M.M. Bevers (1988). **Effects of morphine and naloxone on plasma levels of LH, FSH, prolactin and growth hormone in the miniature male pig.** *Journal of Endocrinology* 119(3): 501-508.

Tuman, K. J., R.J. McCarthy, B.D. Spiess, M. DaValle, R. Dabir, and A.D. Ivankovich (1989). **Does choice of anesthetic agent significantly affect outcome after coronary artery surgery?** *Anesthesiology* 70(2): 189-198.

Vainio, O.M., B.C. Bloor, and C. Kim (1992). **Cardiovascular effects of a ketamine-medetomidine combination that produces deep sedation in Yucatan mini swine.** *Laboratory Animal Science* 42(6): 582-588.
NAL call number: 410.9 P94

Waldmann, V., K.H. Otto, and W. Bollwahn (1994). **Piglet castration--pain sensation and pain elimination. [Ferkelkastration--Schmerzempfindung und Schmerzausschaltung.]** *DTW Deutsche Tierarztliche Wochenschrift* 101: 105-109.
NAL call number: 41.8 D482

Wedel, D., P. Iaizzo, and J. Milde (1991). **Desflurane is a trigger of malignant hyperthermia in susceptible swine.** *Anesthesiology* 74(3): 508-512.

Weiskopf, R.B. and M.S. Bogetz (1984). **Minimum alveolar concentration (MAC) of halothanae and nitrous oxide in swine.** *Anesthesia and Analgesia* 63: 529.

Weiskopf, R.B., M.S. Bogetz, M.F. Roizen, and I.A. Reid (1984). **Cardiovascular and metabolic sequelae of inducing anesthesia with ketamine or thiopental in hypovolemic swine.,** *Anesthesiology* 60(3): 214-219.

Weiskopf, R., E. Eger, M. Holmes, I.J. Rampil, B. Johnson, J.G. Brown, N. Yasuda, and A.G. Targ (1989). **Epinephrine-induced premature ventricular contractions and changes in arterial blood pressure and heart rate during I-653, isoflurane and halothane anesthesia in swine.** *Anesthesiology* 70(2): 293-298.

Weiskopf, R., E. Eger, M. Holmes, N. Yasuda, B.H. Johnson, and A.G. Targ (1990). **Cardiovascular actions of common anesthetic adjuvants during desflurane (I-653) and isoflurane anesthesia in swine.** *Anesthesia and Analgesia* 71(2): 144-148.

Weiskopf, R., M. Holmes, E. Eger, B.H. Johnson, I.J. Rampil, and J.G. Brown (1988). **Cardiovascular effects of I653 in swine.** *Anesthesiology* 69(3): 303-309.

Weiskopf, R.B., M.A. Holmes, E.I. Eger II, N. Yasuda, I.J. Rampil, B.H. Johnson, A.G. Targ, I.A. Reid, and L.C. Keil

(1992). **Use of swine in the study of anesthetics.** In: *Swine as Models in Biomedical Research*. M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 96-117.
NAL call number: RB125.S79 1992

Weiskopf, R., M. Holmes, I. Rampil, B.H. Johnson, N. Yasuda, A.G. Targ, and E.I. Eger (1989). **Cardiovascular safety and actions of high concentrations of I-653 and isoflurane in swine.** *Anesthesiology* 70(5): 793-798.

Whelan, G. and Flecknell, P.A. (1992). **The assessment of depth of anaesthesia in animals and man.** *Laboratory Animals* 26: 153-162.
NAL call number: QL55.A1L3

Williams, L.L. (1992). **The Vietnamese pot-bellied pig: Anesthetic friend or foe?** *Symposium of the American College of Veterinary Surgery*.

Wilson, L.E., D.J. Hatch, and K. Rehder (1993). **Mechanisms of the relaxant action of ketamine on isolated porcine trachealis muscle.** *British Journal of Anaesthesia* 71: 544-550.

Wemyss-Holden, S.A., K.J. Porter, P. Baxter, G.E. Rudkin, and G.J. Maddern (1999). **The laryngeal mask airway in experimental pig anaesthesia.** *Laboratory Animals* 33(1): 30-34.
NAL call number: QL55.A1L3

Worek, F.S. G. Blumel, J. Zeravik, G.J. Zimmerman, and U.J. Pfeiffer (1988). **Comparison of ketamine and pentobarbital anesthesia with the conscious state in a porcine model of Pseudomonas aeruginosa septicemia.** *Acta Anaesthiologica Scandinavica* 32(7): 509-515.

Wright, M. (1982). **Pharmacologic effects of ketamine and its use in veterinary medicine.** *American Journal of Veterinary Research* 180: 1462-1471.

Wynn, J.M. (1985). **Physics, chemistry, and manufacture of nitrous oxide.** In: *Nitrous Oxide*, New York, NY, Elseiver, ISBN: 0-444-00860-8.

Zhao, H., H. Sun, and M.S. Chow (Feb. 1999). **Prediction of the effect of systemic acidosis (SA) on lidocaine (L) disposition kinetics in pigs using a physiologically based pharmacokinetic (PBPK) model.** *Clinical Pharmacology and Therapeutics* 65(2): 181.

ATHEROSCLEROSIS

Antoniucci, D.M., V.M. Miller, and L.A. Fitzpatrick (1997). **Gender-related differences in atherosclerosis: Role of endothelin-1 in proliferation of vascular smooth muscle cells.** *Journal of the American College of Cardiology* 29(2 Suppl. A): 386A.

Attie, A.D., R.J. Aiello, and W.J. Checovich (1992). **The spontaneously hypercholesterolemic pig as an animal model of human hypercholesterolemia.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 141-155.
NAL call number: RB125.S79 1992

Augier, T., C. Bertolotti, A. Friggi, P. Charpiot, A. Barlatier, et al. (May 1996). **Therapeutic effects of nitric oxide-donor isosorbide dinitrate on atherosclerosis-induced alterations in hemodynamics and arterial viscoelasticity are independent of the wall elastic component.** *Journal of Cardiovascular Pharmacology* 27(5): 752-759.

Barbeau, M.L., K.F. Klemp, J.R. Guyton, and K.A. Rogers (April 1997). **Dietary fish oil. Influence on lesion regression in the porcine model of atherosclerosis.** *Arteriosclerosis, Thrombosis, and Vascular Biology* 17(4): 688-

694.

Becker, R.H.A. (1994). **ACE-inhibition and experimental atherosclerosis. [ACE-Hemmung und Atherosklerose im Tiermodell.]** *Zeitschrift fur Kardiologie* 83(SUPPL 4): 15-20.

Bocan, T.M. (Feb. 1998). **Animal models of atherosclerosis and interpretation of drug intervention studies.** *Current Pharmaceutical Design (Netherlands)* 4(1): 37-52.

Carew, T.E., R.P. Saik, K.H. Johansen, C.A. Dennis, and D. Steinberg (1976). **Low density and high density lipoprotein turnover following portocaval shunt in swine.** *Journal of Lipid Research* 17(5): 441-450.

Cerda, J.J., S.J. Normann, M.P. Sullivan, C.W. Burgin, et al. (March 1994). **Inhibition of atherosclerosis by dietary pectin in microswine with sustained hypercholesterolemia.** *Circulation* 89(3): 1247-1253.

Chen, W.X., and J.Z. Li (March 1993). **Correlation of serum cholesteryl ester fatty acid composition with susceptibility to atherosclerosis in different species.** *Chinese Medical Journal* 106(3): 163-166.

Chuapetcharasopon, C., K.C. Wright, S. Wallace, and R.L. Dobben (1992). **Treatment of experimentally induced atherosclerosis in swine iliac arteries: a comparison of self-expanding and balloon-expanded stents.** *Cardiovascular and Interventional Radiology* 15(3): 143-150.

Cromeens, D.M., G.P. Rodgers, and S.T. Minor (1990). **Warfarin sodium for anticoagulation of atherosclerotic miniature swine.** *Journal of Investigative Surgery* 3(2): 141-145.

Dashwood, M.R., S.G.E. Barker, J.R. Muddle, M.H. Yacoub, and J.F. Martin (1993). **(sup 1sup 2sup 5I)-endothelin-1 binding to vasa vasorum and regions of neovascularization in human and porcine blood vessels: A possible role for endothelin in intimal hyperplasia and atherosclerosis.** *Journal of Cardiovascular Pharmacology* 22(Suppl. 8): S343-S347.

de Smet, B.J., G. Pasterkamp, Y.J. van der Helm, C. Borst, and M.J. Post (May 1998). **The relation between de novo atherosclerosis remodeling and angioplasty-induced remodeling in an atherosclerotic Yucatan micropig model.** *Arteriosclerosis, Thrombosis, and Vascular Biology* 18(5): 702-707.

DuPont, J., W.V. Lumb, A.W. Nelson, J.P. Seegmiller, D. Hotchkiss, and H.P. Chase (1985). **Portocaval shunt as treatment for hypercholesterolemia. Metabolic and morphorlogical effects in a swine model.** *Atherosclerosis* 58(1-3): 205-222.

Fekete, S. (1993). **Animal models in experimental atherosclerosis: a critical review.** *Acta Veterinaria Hungarica* 41(1-2): 3-9.

Fitzpatrick, L.A. (March 1996). **Gender-related differences in the development of atherosclerosis: studies at the cellular level.** *Clinical and Experimental Pharmacology and Physiology* 23(3): 267-269.

Fitzpatrick, LA., M. Ruan, J. Anderson, T. Moraghan, and V. Miller (1999). **Gender-related differences in vascular smooth muscle cell proliferation: implications for prevention of atherosclerosis.** *Lupus* 8(5): 397-401.

Gal, D. and J.M. Isner (1992). **Atherosclerotic Yucatan microswine as a model for novel cardiovascular interventions and imaging.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, p. 118-140.
NAL call number: RB125.S79 1992

Gerrity, R.G., and J.L. Nadler (1997). **Oxidant stress in a new swine model of diabetes-induced accelerated atherosclerosis.** *Circulation* 96(8 Suppl.): I175.

Gillet, M.P.T., A.B. Lima-Filho, D.N.G. Oliveira, and J.L. Lima-Filho (1989). **Relationship between lecithin:**

cholesterol acyltransfer and lipid and lipoprotein levels in plasma of mammals susceptible or resistant to atherosclerosis. *Arquivos de Biologia e Tecnologia* 32(4): 645-659.

Hackman, A.M., W.G. Pond, H.J. Mersmann, W.W. Wong, L.P. Krook, and S. Zhang (Feb. 1996). **Obese pigs fed a high cholesterol diet from birth to 2 months are less susceptible than lean pigs to atherosclerosis.** *Journal of Nutrition* 126(2): 564-573.

Hsiang, Y., M. Stonefield, R.D. Bower, M. Fragoso, V. Tsang, M.T. Crespo, and A. Lundkvist (1993). **Assessing Photofrin uptake in atherosclerosis with a fluorescent probe: comparison with photography and tissue measurements.** *Lasers in Surgery and Medicine* 13(3): 271-278.

Jacobsson, L. (1989). **Comparison of experimental hypercholesterolemia and atherosclerosis in male and female mini-pigs of the Goettingen strain.** *Artery* 16(2): 105-117.

Kobari, Y., M. Koto, and M. Tanigawa (April 1991). **Regression of diet-induced atherosclerosis in Gottingen Miniature Swine** *Laboratory Animals* 25(2): 110-116.
NAL call number: QL55.A1L3

Kolb, E., T. Bauer, and J. Seehawer (1998). **Pathogenesis of atherosclerosis, occurrence in domestic animals and significance of vitamin E and selenium in its prevention: A review. [Entstehung der Arteriosklerose, Vorkommen bei Haustieren sowie Bedeutung des Vitamins E und des Selens fur die Verhutung: Eine Ubersicht.]** *Praktische Tierarzt* 79(10): 980-988.

Krams, R., J.J. Wentzel, J.A. Oomen, J.C. Schuurbiers, I. Andhyiswara, et al. (March 1998). **Shear stress in atherosclerosis, and vascular remodelling.** *Seminars in Interventional Cardiology* 3(1): 39-44.

Krupski, W.C. (1994). **Regression of atherosclerosis.** *Annals of Vascular Surgery* 8(3): 303-317.

Kummerow, F.A., R. Przybylski, and E. Wasowicz (1994). **Changes in arterial membrane lipid composition may precede growth factor influence in the pathogenesis of atherosclerosis.** *Artery* 21(2): 63-75.

Lee, K.T., D.N. Kim, and W.A. Thomas (1986). **Atherosclerosis in swine.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J. Mersmann (eds.), Vol. 1, Boca Raton, FL: CRC Press, pp. 33-48.
NAL call number: RC669 S87

Lih, K., M.J. Davis, M.S. Cannon, and W.M. Chilian (1992). **Pathophysiological consequences of atherosclerosis extend into the coronary microcirculation: restoration of endothelium-dependent responsesby L-arginine.** *Circulation Research* 70(3): 465-476.

Lusis, A.J., J.I. Rotter, and R.S. Sparkes (1992). ***Monographs in Human Genetics, Vol. 14. Molecular Genetics of Coronary Artery Disease: Candidate Genes and Processes in Atherosclerosis*** S. Karger AG: Basel, Switzerland; New York, NY, 453p., ISBN 3-8055-5558-X.

Morris, Sharon A. (1998). ***The effects of gender and exercise on risk factors for atherosclerosis in Yucatan miniature swine.*** Thesis (M.S.): University of New Hampshire.

Mortensen, A. (1996). **Use of laboratory animals in atherosclerosis research.** *Dansk Veterinaertidsskrift* 79(17): 759-765.

Nestruck, A.C., S. Lussier-Cacan, M. Bergseth, M. Bidallier, J. Davignon, and Y.L. Marcel. (1977). **The effect of portocaval shunt on plasma lipids and lipoproteins in swine.** *Biochimica Biophysica Acta* 488(1): 43-54.

Newby, A.C. (1997). **Molecular and cell biology of native coronary and vein-graft atherosclerosis: Regulation of plaque stability and vessel-wall remodelling by growth factors and cell-extracellular matrix interactions.** *Coronary Artery Disease* 8(3-4): 213-224.

Nichols, T.C., D.A. Bellinger, D.A. Tate, R.L. Reddick, et al. (1990). **Von Willebrand factor and occlusive arterial thrombosis: a study in normal and von Willebrand's disease pigs with diet-induced hypercholesterolemia and atherosclerosis.** *Arteriosclerosis* 10(3): 449-461.

Nichols, T.C., D.A. Bellinger, K.E. Davis, G.G. Koch, et al. (1992). **Porcine von Willebrand disease and atherosclerosis: influence of polymorphism in apolipoprotein B100 genotype.** *American Journal of Pathology* 140(2): 403-415.

Norman, J.F. and C.W. Miller (Oct. 1994). **Prostacyclin, thromboxane A2, and atherosclerosis in young hypercholesterolemic swine.** *Prostaglandins Leukotrienes and Essential Fatty Acids* 51(4): 293-298.

Norman, J.F., C.W. Miller, and K.G.D. Allen (March 1995). **Thoracic aorta prostacyclin production is not altered during early atherosclerosis development in young swine.** *The Journal of Nutritional Biochemistry* 6(3): 163-169.
NAL call number: QP141.A1J54

Numan, F., and R. Ross (1997). ***Annals of the New York Academy of Sciences: Atherosclerosis IV. Recent Advances in Atherosclerosis Research***, New York Academy of Sciences: New York, NY, 551p., ISBN: 1-57331-022-0 (cloth); 1-57331-023-9 (paper).
NAL call number: 500 N484 v.811

Ooyama, T. and H. Sakamato (1995). **Elastase in the prevention of arterial aging and the treatment of atherosclerosis.** *Ciba Foundation Symposium* 192: 307-317.

Orekhov, A.N., and J. Grunwald (July-Aug. 1997). **Effects of garlic on atherosclerosis.** *Nutrition* 13 (7-8): 656-663.

Orimo, H., S.Z. Han, R.E. Tabata, K. Stergiopoulos, Y. Ouchi, and H. Karaki (Jan. 1995). **Calcium channel blocking substances for prevention of atherosclerosis.** *Annals of the New York Academy of Sciences* 748: 447-460.
NAL call number: 500 N484

Prescott, M.F., J. Hasler-Rapacz, J. von Linden-Reed, and J. Rapacz (Jan. 1995). **Familial hypercholesterolemia associated with coronary atherosclerosis in swine bearing different alleles for apolipoprotein B.** *Annals of the New York Academy of Sciences* 748: 283-292.

Qin Shucun, et al (1992). **Inhibition of experimental atherosclerosis in swine by nifedipine.** *Zhonghua Xinxueguanbing Zazhi* 20(1): 41-44.

Rapacz, J. and J. Hasler-Rapacz (1990). **The pig and its plasma lipoprotein polymorphism in studies of atherosclerosis. Fortschritte der Tierzuchtung und Zuchtungsbiologie.** *Advances in Animal Breeding and Genetics* (5): 131-146.
NAL call number: SF105.A1F6

Sassen, L.M., J.M. Hartog, J.M. Lamers, et al (1989). **Mackerel oil and atherosclerosis in pigs.** *European Heart Journal* 10(9): 838-846.

Sassen, L.M., J.M. Lamers, W. Sluiter, J.M. Hartog, D.H. Dekkers, A. Hogendoorn, and P.D. Verdouw (May 1993). **Development and regression of atherosclerosis in pigs. Effects of n-3 fatty acids, their incorporation into plasma and aortic plaque lipids, and granulocyte function.** *Arteriosclerosis and Thrombosis* 13(5): 651-660.

Sassen L.M., J.M. Lamers, and P.D. Verdouw (1994). **Fish oil and the prevention and regression of atherosclerosis.** *Cardiovascular Drugs and Therapy* 8(2): 179-191.

Sawchuk, A.P., J.L. Unthank, T.E. Davis, and M.C. Dalsing (Jan. 1994). **A prospective, in vivo study of the relationship between blood flow hemodynamics and atherosclerosis in a hyperlipidemic swine model.** *Journal of Vascular Surgery* 19(1): 58-63.

Shimokawa, H. (Jan. 1999). **Primary endothelial dysfunction: atherosclerosis.** *Journal of Molecular and Cellular Cardiology* 31(1): 23-37.

Shimokawa, H. and P. Vanhoutte (1989). **Impaired endothelium-dependent relaxation to aggregating platelets and related vasoactive substances in porcine coronary arteries in hypercholesterolemia and atherosclerosis.** *Circulation Research* 64(5): 900-914.

Siow, R.C.M, H. Sato, and G.E. Mann (Feb. 1999). **Heme oxygenase-carbon monoxide signalling pathway in path in atherosclerosis: Anti-atherogenic actions of bilirubin and carbon monoxide?** *Cardiovascular Research* 41(2): 385-394.

Smith, M.J., K.G. Allen, J.F. Norman, M.A. Harris, and C.W. Miller (Nov. 1995). **Low-dose aspirin does not attenuate platelet aggregation or atherosclerosis in miniature swine but decreases production of aortic wall prostacyclin.** *Prostaglandins Leukotrienes and Essential Fatty Acids* 53(5): 331-340.

Spady, D.K. (1999). **Dietary fatty acids and atherosclerosis regression.** *British Journal of Nutrition* 82(5): 337-338.

Stefanadis, C., K. Toutouzas, E. Tsiamis, C. Vlachopoulos, S. Vaina, D. Tsekoura, L. Haldi, E. Stefanadi, M. Gravanis, and P. Toutouzas (1999). **Stents covered by an autologous arterial graft in porcine coronary arteries: feasibility, vascular injury and effect on neointimal hyperplasia. Atherosclerosis and plaque rupture.** *Cardiovascular Research* 41(2): 433-442.

Tarugi, P. (1994). **Animal models in the study of atherosclerosis.** *Giornale della Arteriosclerosi* 19(3): 183-190.

Thorpe, P.E., W.J. Hunter, X.X. Zhang, P.S. Dovgan, and D.K. Agrawal (Sept. 1996). **A noninjury, diet-induced swine model of atherosclerosis for cardiovascular-interventional research.** *Angiology* 47(9): 849-857.

Van Tol, A., T. Van Gent, L.M. Scheek, J.E.M. Groener, L.M.A. Sassen, J.M.J. Lamers, and P.D. Verdouw (1991). **Lipoprotein structure and metabolism during progression and regresson of atherosclerosis in pigs fed with fish oil-derived fatty acids.** *Advances in Experimental Medicine and Biology* 285: 417-421.
NAL call number: QP901.A33

Weber, P.C. and A. Leaf (1992). ***Atherosclerosis Reviews: Atherosclerosis: Cellular Interactions, Growth Factors, and Lipids***, Raven Press: New York, NY, ISBN: 0-7817-0099-X.

White, C.J., S.R. Ramee, A.K. Banks, D. Wiktor and H.L. Price (1992). **The Yucatan miniature swine: An atherogenic model to assess the early potency rates of an endovascular stent.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 156-162.
NAL call number: RB125.S79 1992

Wissler, R.T. (1994). **Atherosclerosis: Advantages and shortcomings of animal models in atherosclerosis research.** *Journal of Vascular Surgery* 20(1): 114-116.

Woodford, F.P., J. Davignon, and A. Sniderman (1995). ***International Congress Series: Atherosclerosis X.***, Elsevier Science Publishers: Amsterdam, Netherlands; New York, NY, ISBN: 0-444-82007-8

CARDIOPULMONARY BYPASS

Braimbridge, M.V. (1988). **Myocardial protection hypothermia and cardioplegia.** In: *Cardiopulmonary Bypass*, K.M. Taylor, (ed.), Chapman and Hall Ltd, London, pp. 375-392.

Bain, W.H. (1988). **Measurement and monitoring for cardiopulmonary bypass.** In: *Cardiopulmonary Bypass*, K.M.

Taylor (ed.), Chapman and Hall Ltd, London, pp. 13-28.

Buylaert, W.A., L.L. Herregods, E.P. Mortier, and M.G. Bogaert (1989). **Cardiopulmonary bypass and the pharmacokinetics of drugs: An update.** *Clinical Pharmacokinetics* 17(1): 10-26.

Cameron, D.E., K.M. Tam, W. Cheng, and M. Braxton (1992). **Studies in the physiology of cardiopulmonary bypass using a swine model.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 185-196.
NAL call number: RB125.S79 1992

Conroy, B.P., D. Black, C.Y. Lin, L.W. Jenkins, R.C. Crumrine, D.S. DeWitt, and W.E. Johnston (March 1999). **Lamotrigine attenuates cortical glutamate release during global cerebral ischemia in pigs on cardiopulmonary bypass.** *Anesthesiology* 90(3): 844-854.

Dapunt, O.E., R.M. Rehza, S. Jeschkeit, et al. (1999). **Intracoronary shunt insertion prevents myocardial stunning in a juvenile porcine MIDCAB model absent of coronary artery disease.** *European Journal of Cardio-Thoracic Surgery* 15(2): 173-179.

Dewanjee, M.K., S.M. Wu, G.W. Burke, and L.C. Hsu (1998). **Tumor necrosis factor-alpha in plasma during cardiopulmonary bypass in a pig model: Correlation with marginated neutrophils and cerebral edema by magnetic resonance imaging.** *ASAIO Journal* 44(3): 212-218.

Emery, R.W. (1997). ***Techniques for Minimally Invasive Direct Coronary Artery Bypass Surgery***, Hanley and Belfus, ISBN: 1-56053-218-1.

Gravlee, G.P. (1991a). **Management of cardiopulmonary bypass.** American Society of Anesthesiology, *Annual Refresher Course Lectures*, San Francisco, California, no. 176, pp. 1-7.

Gravlee, G.P. (1991b). **Heparin monitoring for cardiopulmonary bypass. Does it really matter?** *Anesthesiology* 5: 2.

Holley, F.O., K.V. Pongani, and D.R. Stanski (1982). **Effect of cardiopulmonary bypass in the pharmacokinetics of drugs.** *Clinical Pharmacokinetics* 7(3): 234-251.

Kaplan, D.K., N. Atsumi, M.N. D'Ambra, and G.J. Vlahakes (1995). **Distal circulatory support for thoracic aortic operations--effects on intracranial pressure.** *Annals of Thoracic Surgery* 59(2): 448-452.

Moores, W.Y., R.B. Weiskopf, M. Baysinger, and J.R. Utley (1981). **Effects of halothane and morphine sulfate on myocardial compliance following total cardiopulmonary bypass.** *Journal of Thoracic and Cardiovascular Surgery* 81(2): 163-170.

Okutani, R., D.M. Philbin, C.E. Rosow, G. Koski, and R.C. Schneider (1988). **Effect of hypothermic hemodilutional cardiopulmonary bypass on plasma sufentanil and catecholamine concentrations in humans.** *Anesthesia and Analgesia* 67(7): 667-670.

Purohit, D.M., M.M. Swindle, C.D. Smith, H.B. Othersen Jr. and J.M. Kazanovicz (1993). **Hanford miniature swine model for extracoporeal membrane oxygenation (ECMO).** *Journal of Investigative Surgery* 6(6): 503-508.

Reed, C.C. and T.B. Stafford (1989). **Conduct of Perfusion.** In: *Cardiopulmonary Bypass*, 2nd ed., Surgimedics/TMP, The Woodlands, Texas, pp. 399-414.

Reed, C.C. and T.B. Stafford (1989). **Myocardial Protection.** In: *Cardiopulmonary Bypass*, 2nd ed., Surgimedics/TMP, The Woodlands, Texas, pp. 415-426.

Reves, J.G., N. Croughwell, J.R. Jacobs, and W. Greeley (1989). **Anesthesia during cardiopulmonary bypass: Does it**

matter? In: *Cardiopulmonary Bypass: Current Concepts and Controversies*, J.H. Tinker (ed.), W.B. Saunders, Philadelphia, pp. 69-98, ISBN: 0-7216-8831-4 (1989/01).

Serraf, A., M. Robotin, N. Bonnet, H. Detruit, B. Helene, et al. (Dec. 1997). **Alteration of the neonatal pulmonary physiology after total cardiopulmonary bypass.** *Journal of Thoracic and Cardiovascular Surgery* 114(6): 1061-1069.

Smith, A.C., W.J. Ehler, and M.M. Swindle (1997). **Anesthesia and analgesia in swine.** In: *Anesthesia and Analgesia in Laboratory Animals*, Kohn, D.H., S.K. Wixson, W.J. White, and G.J. Benson (eds.), Academic Press, New York, NY, pp. 313-336.
NAL call number: SF996.5 A54 1997

Swan, H. and D.M. Meagher (1971). **Total body bypass in miniature pigs.** *Journal of Thoracic and Cardiovascular Surgery* 61(6): 956-967.

Swindle, M.M. (1998). **Anesthesia and analgesia.** In: *Surgery, Anesthesia and Experimental Techniques in Swine, Ames*, IA: Iowa State University Press, pp. 33-64.
NAL call number: RD29.5.S94S944 1998

Undar, A., A.J. Lodge, T.M. Runge, C.W. Daggett, R.M. Ungerleider, and J.H. Calhoon (1996). **Design and performance of a physiologic pulsatile flow neonate-infant cardiopulmonary bypass system.** *ASAIO Journal* 42(5): M580-M583.

Undar, A., T. Masai, R. Inman, E.A. Beyer, M.A. Mueller, M.C. McGarry, O.H. Frazier, and C.D. Fraser Jr. (Jan.-Feb. 1999). **Evaluation of a physiologic pulsatile pump system for neonate-infant cardiopulmonary bypass support.** *ASAIO Journal* 45(1): 53-58.

CARDIOVASCULAR

Bergelson, B.A., T.K. Yu, and N.A. Ruocco (1996). **Effects of hypercholesterolaemia on physiological recruitment of coronary vascular reserve in swine.** *Clinical Science* 90(4): 261-268.

Bharati, S., M. Levine, K. Shoei, S. Huang, B. Handler, G.V.S. Parr, R. Bauernfeind, and M. Lev (1991). **The conduction system of the swine heart.** *Chest* 100(1): 207-212.

Bloor, C.M., F.C. White, and D.M. Roth (1992). **The pig as a model of myocardial ischemia and gradual coronary occlusion.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 163-175.
NAL call number: RB125.S79 1992

Bloor, C.M., F.C. White, and R.J. Lammers (1986). **Cardiac ischemia and coronary blood flow in swine.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J. Mersmann (eds.), Vol. 2, Boca Raton, FL: CRC Press, pp. 87-119.
NAL call number: RC669 S87

Brownlee, R.R., M.M. Swindle, R. Bertolet, and P. Neff. **Toward optimizing a preshaped catheter and system parameters to achieve single lead DDD pacing.** *PACE* 20(85, Part 1): 1354-1358.

Brutel de la Riviere, A., J.M. Quaegebeur, P.J. Hennis, G. Brutel de la Riviere, and G. Van Herpen (1983). **Growth of an aorta-coronary anastomosis. An experimental study in pigs.** *Journal of Thoracic Cardiovascular Surgery* 86(3): 393-399.

Buckley, N.M., P.M. Gootman, P. Brazeau, B.P. Matanic, I.D. Frasier, and E.L. Gentles. (1979). **Cardiovascular**

function in anesthetized miniature swine. *Laboratory Animal Science* 29(2): 200-208.
NAL call number: 410.9 P94

Calne, R.Y., T.A. English, D.C. Dunn, P. McMaster, D.C. Wilkins, and B.M. Herbertson (1976). **Orthotopic heart transplantation in the pig. The pattern of rejection.** *Transplantation Proceedings* 8(1): 27-30.

Calne, R.Y., K. Rolles, D.J. White, D.P. Smith, and B.M. Herbetson (1978). **Prolonged survival of pig orthotopic heart grafts treated with cyclosporin A.** *Lancet* 1(8075): 1183-1185.

Carroll, S.M., L.E. Nimmo, P.S. Knoepfler, F.C. White, and C.M. Bloor (1995). **Gene expression in a swine model of right ventricular hypertrophy.** *Journal of Molecular and Cellular Cardiology* 27(7): 1427-1441.

Chaloupka, J.C., F. Vinuela, J. Robert, and J. Duckwiller (1994). **An in vivo arteriovenous malformation model in swine: Preliminary feasibility and natural history study.** *American Journal Neuroradiology* 15(5): 945-950.

Chen L., A.L. Sica, and S.M. Scharf (April 1999). **Mechanisms of acute cardiovascular response to periodic apneas in sedated pigs.** *Journal of Applied Physiology* 86(4): 1236-1246.

Corin, W.J., M.M. Swindle, J.F. Spann Jr., M. Frankis, W.W.R. Biederman, A. Smith, A. Taylor, and B.A. Carabello (1988). **The mechanism of decreased stroke volume in children and swine with ventricular septal defect and failure to thrive.** *Journal of Clinical Investigation* 82(2): 544-551.

Curley, M.A. (1985). ***Pediatric Cardiac Dysrhythmias***, Appleton and Lange, 224p., ISBN: 0-89303-758-3 (1984/04)

Dawson, R.C., A.F. Krisht, D.L. Barrow, G.J. Joseph, G.G. Shengelaia, and B. Bonner (1995). **Treatment of experimental aneurysms using collagen-coated microcoils.** *Neurosurgery* 36(1): 133-140.

Ehler, W.J., J.H. Cissik, V.C. Smith, and G.B. Hubbard (1990). **Evaluation of Gore-Tex graft material in the repair of right ventricular outflow tract defect.** *Journal of Investigative Surgery* 3(2): 119-127.

Feletou, M. and B. Teisseire (1992). **Vascular pharmacology of the micropig: Importance of the endothelium.**In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 74-95.
NAL call number: RB125.S79 1992

Frimerman A., Welch P.J., Jin X., et al. (Feb. 1999). **Chimeric DNA-RNA hammerhead ribozyme to proliferating cell nuclear antigen reduces stent-induced stenosis in a porcine coronary model.** *Circulation* 99(5): 697-703.

Fujino, H., R.P. Thompson, P.G. Germroth, M.E. Harold, M.M. Swindle, and P.C. Gillette. (1993). **Histological study of chronic catheter cryoablation of atrioventricular conduction in swine.** *American Heart Journal* 125(6): 1632-1637.

Gardner, T.J. and D.L. Johnson (1988). **Cardiovascular system.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), pp. 74-124.
NAL call number: RB125 E9

Gillette, P.C., M.M. Swindle, R.P. Thompson, and C.L. Case (1991). **Transvenous cryoablation of the bundle of His.** *PACE* 14(4, Part 1): 504-510.

Gillette, P.C. and J.C. Griffin (1986). ***Practical Cardiac Pacing,*** Baltimore, MD: Williams and Wilkins, 296p., ISBN: 0-683-03526-6.

Gillette, P.C. and A. Garson, Jr. (1981). ***Pediatric Cardiac Dysrhythmias,*** NY: Grune and Stratton.

Goodman, S.L. (1999). **Sheep, pig, and human platelet-material interactions with model cardiovascular biomaterials.** *Journal of Biomedical Materials Research* 45(3): 240-250.

Gootman, N., P.M. Gootman, B.J. Buckley, and N.M. Buckley (1986). **Cardiovascular effects of catecholamine infusions in developing swine.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 3, NY: Plenum Pubishers, pp. 1615-1622.
NAL call number: RB125.C68 1985

Grifka, R.G., G.W. Vick III, M.P. O'Laughlin, T.J. Myers, W.R. Morrow, M.R. Nihill, D.L. Kearney, and C.E. Mullins (1993). **Balloon-expandable intravascular stents: aortic implantation and later furthur dilation in growing mini-pigs.** *American Heart Journal* 126(4): 979-984.

Hall, T.S., M. Borkon, W.A. Baumgartner, R. Scott Stuart, M.M. Swindle, E. Galloway, B.A. Reitz (1986). **Use of Swine in heart transplantation research.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.). Vol. 1, pp. 373-376.
NAL call number: RB125.C68 1985

Harvey, R.C. and E.F. Jones (1982). **A technique for bioinstrumentation of the thorax of miniature swine.** *Laboratory Animal Science* 32(1): 94-96.
NAL call number: 410.9 P94

Hendrick, D.A., A.C. Smith, J.M. Kratz, F.A. Crawford, and F.G. Spinale (1990). **The pig as a model of tachycardia and dilated cardiomyopathy.** *Laboratory Animal Science* 40(5): 495-501.
NAL call number: 410.9 P94

Hickey, R.F., B.A. Cason, and I. Shubayev (1994). **Regional vasodilating properties of isoflurane in stunned swine myocardium.** *Journal of Cardiac Surgery* 9(3, Suppl.): 430-436.

Ho, S.Y., R.P. Thompson, S. Gibbes, M.M. Swindle, and R.H. Anderson (1991). **Ventricular septal defects in a family of Yucatan miniature pigs.** *International Journal of Cardiology* 33(3): 419-426.

Horneffer, P.J., V.J. Gott, and T.J. Gardner (1986). **Swine as a cardiac surgical model.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), NY: Plenum Press, Vol. 1, pp. 321-326.
NAL call number: RB125.C68 1985

Hughes, I.E. (1987). **Computer simulation of cardiovascular responses from in-vivo preparations.** *Alternatives to Laboratory Animals: ATLA* 11: 204-213.
NAL call number: Z7994.L3A5

Hughes, H.C. (1986). **Swine in cardiovascular research.** *Laboratory Animal Science* 36(4): 348-350.
NAL call number: 410.9 P94

Hughes, H.C. and T.A. Bowman (1986). **Intracardiac electrophysiology of swine for design and testing of cardiac pacemakers.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, pp. 327-331.
NAL call number: RB125.C68 1985

Idris, A.H., L.B. Becker, J.P. Omato, J. Hedges, N. Chandra, R.O. Cummins, U. Ebmeyer, H. Halperin, R. Kerber, K. Kern, P. Safar, P. Steen, M.M. Swindle, J. Tsitlik, I. vonPlanta, M. vonPlanta, R. Wears, and M.H. Weil (1996). **Utstein-Style guidelines for uniform reporting of laboratory CPR research.** *Circulation* 94(9): 2324-2336, Simultaneous publication in *Annals of Emergency Medicine and Resuscitation* 33(1): 69-84.

Johnson, T.B., D.A. Fyfe, R.P. Thompson, C.H. Kline, M.M. Swindle, and R.H. Anderson (1993). **Echocardiographic and anatomic correlation of ventricular septal defect morphology in newborn miniature pigs.** *American Heart Journal* 125(4): 1067-1072.

Jumrussirikul, P., J.T. Chen, M. Jenkins, R. Hui, K. Taylor, P.J. Wang, G.M. Hutchins, and H. Calkins (July 1998). **Prospective comparison of temperature guided microwave and radiofrequency catheter ablation in the swine heart.** *Pacing and Clinical Electrophysiology* l21(7): 1364-1374.

Korvald, C., O.P. Elvenes, L.M. Ytrebo, D.G. Sorlie, and T. Myrmel (April 1999). **Oxygen-wasting effect of inotropy in the "virtual work model".** *American Journal of Physiology* 276(4, Pt. 2): 1339-1345.

Kratz, J.M., W.S. Johnson, R. Mukherjee, J. Hu, F.A. Crawford, and F.G. Spinale (1994). **The relation between latissimus dorsi skeletal muscle structure and contractile function after cardiomyoplasty.** *Journal of Thoracic and Cardiovascular Surgery* 107(3): 868-878.

Kumar A., M.P. Villani, U.K. Patel, J.C. Keith Jr., and R.G. Schaub (March 1999). **Recombinant soluble form of PSGL-1 accelerates thrombolysis and prevents reocclusion in a porcine model.** *Circulation* 99(10): 1363-1369.

Lee, K.T. (1986). **Swine as animal models in cardiovascular research.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 3, NY: Plenum Press, pp. 1481-1496.
NAL call number: RB125.C68 1985

Leeson-Dietrich, J., D. Boughner, and I. Vesely (1995). **Porcine pulmonary and aortic valves: A comparison of their tensile viscoelastic properties at physiological strain rates.** *Journal of Heart Valve Disease* 4(1): 88-94.

LeGrice, I.J., Y. Takayama, J.W. Holmes, and J.W. Covell (1995). **Impaired subendocardial function in tachycardia-induced cardiac failure.** *American Journal of Physiology* 268(5, Part 2): H1788-1794.

Litzke, L.F. and R. Berg (1977). **Quantitative-morphological studies of the heart of mini-lewe miniature swine. 2: Atrioventricular and semilunar valves.** *Archiv fur Experimentelle Veterinarmedizin* 31(4): 547-556.
NAL call number: 41.8 EX7

Lock, J.E., J.L. Bass, G. Lund, J.A. Rysavy, and R.V. Lucas Jr. (1985). **Transcatheter closure of patent ductus arteriosus in piglets.** *American Journal of Cardiology* 55(6): 826-829.

Lock, J.E., T. Niemi, B.A. Burke, S. Einzig, and W. Castaneda-Zuniga (1982). **Transcutaneous angioplasty of experimental aortic coarctation.** *Circulation* 6(6): 1280-1286.

Louttit, J.B., A.A. Hunt, M.P. Maxwell, and G.M. Drew (Feb. 1999). **The time course of cardioprotection induced by GR79236, a selective adenosine A1-receptor agonist, in myocardial ischaemia-reperfusion injury in the pig.** *Journal of Cardiovascular Pharmacology* 33(2): 285-91.

Lund, G., J. Rysavy, A. Cragg, E. Salomonowitz, Z. Vlodaver, W.C. Zuniga, and K. Amplatz (1984). **Long-term patency of the ductus arteriosus after ballon dilatation: an experimental study.** *Circulation* 69(4): 772-775.

Macdonald, A.A., A.J. Llanos, M.A. Heymann, and A.M. Rudolph (1981). **Cardiovascular responsiveness of the pig fetus to autonomic blockade.** *Pflugers Archives* 390(3): 262-264.

Marijianowski, M.M., I.R. Crocker, T. Styles, D.M. Forestner, R. Waksman, G.D. Cipolla, S.B. King III, and K.A. Robinson (June 1999). **Fibrocellular tissue responses to endovascular and external beam irradiation in the porcine model of restenosis.** *International Journal of Radiation Oncology, Biology, Physics* 44(3): 633-41.

McKirnan, M.D., F.C. White, B.D. Guth and C.M. Bloor (1986). **Exercise and hemodynamic studies in swine.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J. Mersmann (eds.), Vol. 2, pp. 105-120.
NAL call number: RC669 S87

Mehran, R.J., M.A. Ricci, A.M. Graham, K. Carter, and J.F. Smyes (1991). **Porcine model for vascular graft studies.** *Journal of Investigative Surgery* 4(1): 37-44.

Merin, R.G., P.D. Verdouw, and J.W. deJong (1982). **Myocardial functional and metabolic responses to ischemia in swine during halothane and fentanyl anesthesia.** *Anesthesiology* 56(2): 84-92.

Mitchell, S.E., J.H. Anderson, M.M. Swindle, J.D. Strandberg, and J. Kan (1994). **Atrial septostomy: Stationary**

angioplasty balloon technique. Experimental work and preliminary clinical applications. *Pediatric Cardiology* 15(1): 1-7.

Mobley, D., M. Mitchell, M. Landi, and T. Halve (1994). **Comparative study on the effects of isoflurane, isoflurane with nitrous oxide, and thiamylal on percent myocardial infarct and percent area at risk in acute and chronic pigs.** *Contemporary Topics in Laboratory Animal Science* 33(3): 63-66.
NAL call number: SF405.5 A23

Moffitt, E. A., J.W. Kirklin, and R.A. Theye (1962). **Physiologic studies during whole body perfusion in Tetralogy of Fallot.** *Journal of Thoracic and Cardiovascular Surgery* 44(2): 180.

Morrow, W.R., V.C. Smith, W.J. Ehler, A.F. Van Dellen, and C.E. Mullins (1994). **Balloon angioplasty with stent implantation in experimental coarctation of the aorta.** *Circulation* 89(6): 2677-2683.

Murphy, J.G., R.S. Schwartz, W.D. Edwards, A.R. Camrud, R.E. Vliestra, D.R. Holmes Jr. (1992). **Percutaneous polymeric stents in porcine coronary arteries: Initial experience with polyethylene terephthalate stents.** *Circulation* 86(5): 1596-1604.

National Institutes of Health (1985). **Guidelines for blood-material interactions.** *Report of the National Heart, Lung and Blood Institute Working Group*, Bethesda, MD: US Department of Health and Human Services, Public Health Services, NIH Publication 85-2185.

Nicolau, D.P., Y.J. Feng, A.H.B. Wu, S.P. Bernstein, and C.H. Nightingale (1996). **Swine model of continuous arteriovenous hemofiltration.** *Laboratory Animal Science* 46(3): 355-357.
NAL call number: 410.9 P94

Pae, W.E. Jr., J.L. Myers, J.A. Waldhausen, G.A. Prophet, and W.S. Pierce (1981). **Subclavian flap angioplasty. Experimental study in growing piglets.** *Journal of Thoracic and Cardiovascular Surgery* 82(6): 922-927.

Randsbaek, F., C.J. Riordan, J.H. Storey, W.D. Montgomery, W.P. Santamore, and E.H. Austin III. (1996). **Animal model of the univentricular heart and single ventricular physiology.** *Journal of Investigative Surgery* 9(4): 375-384.

Rashkind, W.J., C.E. Mullins, W.E. Hellenbrand, and M.A. Tait. (1987). **Nonsurgical closure of patent ductus arteriosus: clinical application of the Rashkind PDA occluder system.** *Circulation* 75(3): 583-592.

Ricci, M.A., R.J. Mehran, D. Petsikas, F. Mohamed, R. Guidoin, Y. Marois, N.V. Christou, A. Graham, and J.F. Symes (1991). **Species differences in the infectability of vascular grafts.** *Journal of Investigative Surgery* 4(1): 45-52.

Ricci, M.A., R. Mehran, N.V. Christou, F. Mohamed, A.M. Graham and J.F. Smyes (1991). **Species differences in the clearance of *Staphyococcus Aureus* bacteremia.** *Journal of Investigative Surgery* 4(1): 53-58.

Rohl, L., L. Ostergaard, C.Z. Simonsen, P. Vestergaard-Poulsen, L. Sorensen, A. Bjornerud, K.B. Saebo, and C. Gyldensted (May 1999). **NC100150-enhanced 3D-SPGR MR angiography of the common carotid artery in a pig vascular stenosis model. Quantification of stenosis and dose optimization.** *Acta Radiology* 40(3): 282-90.

Rysavy, J.A., G.E. Lund, J.E. Lock, J.L. Bass, S.S. Einzig, and K. Amplatz (1986). **A method for nonsurgical creation of patent ductus arteriosus and its applications in piglets.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, pp. 351-361.
NAL call number: RB125.C68 1985

Schoffstall, J.M., W.H. Spivey, S. Davidheiser, L. Fuhs, and R. Kirkpatrick Jr. (1990). **Endogenous and exogenous plasma catecholamine levels in cardiac arrest in swine.** *Resuscitation* 19: 241-251.

Schumann, R.E., M.M. Swindle, B.J. Knick, C.L. Case, and P.C. Gillette (1994). **High dose narcotic anesthesia using sufentanil in swine for cardiac catheterization and electrophysiologic studies.** *Journal of Investigative Surgery*

7(3): 243-248.

Schumann, R.E., M. Harold, P.C. Gillette, M.M. Swindle, and C.H. Gaymes (1993). **Prophylactic treatment of swine with bretylium for experimental cardiac catheterization.** *Laboratory Animal Science* 43(3): 244-246.
NAL call number: 410.9 P94

Shimokawa, S., H. Matsumoto, S. Ogata, T. Komokata, S. Nishida, T. Ushijima, H. Saigenji, Y. Moriyama, and A. Taira (1996). **A new experimental model for simultaneous evaluation of aortic and pulmonary allograft performance in a composite graft.** *Journal of Investigative Surgery* 9(5): 487-493.

Smith, A.C., B. Knick, M.M. Swindle, and P.C. Gillette (1997). **A technique for conducting non-invasive cardiac electrophysiology studies in swine.** *Journal of Investigative Surgery* 10(1-2): 25-30.

Smith, A.C., F.G. Spinale, and M.M. Swindle (1990). **Cardiac function and morphology of Hanford miniature swine and Yucatan miniature and micro swine.** *Laboratory Animal Science* 40(1): 47-50.
NAL call number: 410.9 P94

Spinale, F.G., D.A. Hendrick, F.A. Crawford, A.C. Smith, Y. Hamada, and B.A. Carabello. (July 1990). **Chronic supraventricular tachycardia causes ventricular dysfunction and subendocardial injury in swine.** *American Journal of Physiology* 259(1, Pt. 2): H218-H229.

Stanton, H.C., and H.J. Mersmann (1986). ***Swine in Cardiovascular Research**,* Vol. 1 and 2, Boca Raton, FL: CRC Press.
NAL call number: RC669 S87

Starling, M.B., J.M. Neutze,, R.L. Elliott, I.M. Taylor, and R.B. Elliott (1978). **The effects of some methyl prostaglandin derivatives on the ductus arteriosus of swine in vivo.** *Prostaglandins and Medicine* 1: 267-281.

Sudhir, K., E. Ko, C. Zellner, H.E. Wong, S.J. Hutchison, T.M. Chou, and K. Chatterjee (1997). **Physiological concentrations of estradiol attenuate endothelin 1- induced coronary vasoconstriction in vivo.** *Circulation* 96(10): 3626-3632.

Swindle, M.M. (1998). **Cardiothoracic and vascular system.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 157-202.
NAL call number: RD29.5.S94S944 1998

Swindle, M.M. (1998). **Cardiovascular catheterization laboratory procedures.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 225-264.
NAL call number: RD29.5.S94S944 1998

Swindle, M.M. (1998). **Magnetic resonance angiography.** In: *Surgery, Anesthesia and Experimental Techniques in Swine, Ames*, IA: Iowa State University Press, pp. 291-296.
NAL call number: RD29.5.S94S944 1998

Swindle, M.M., P.J. Horneffer, T.J. Gardner, V.L. Gott, T.S. Hall, R.S. Stuart, W.A. Baumgartner, A.M. Borkon, E. Galloway, and B.A. Reitz (1986). **Anatomic and anesthetic considerations in experimental cardiopulmonary surgery in swine.** *Laboratory Animal Science* 36(4): 357-361.
NAL call number: 410.9 P94

Swindle, M.M., R.P. Thompson, A.C. Smith, G.B. Keech, B.A. Carabello, W. Radtke, D. Fyfe, and P.C. Gillette (1996). **The Yucatan miniature pig model of ventricular septal defect.** In: *Advances in Swine in Biomedical Research*, M. Tumbleson and L. Schook (eds.), Vol. 2, pp. 613-620.
NAL call number: RB125.A36 1996

Swindle, M.M., R.P. Thompson, B.A. Carabello, A.C. Smith, C. Green, and P.C. Gillette (1992). **Congenital**

cardiovascular disease. In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 176-184.
NAL call number: RB125.S79 1992

Teoh, H. and R.Y.K. Man (1999). **Progesterone modulates estradiol actions: Acute effects at physiological concentrations.** *European Journal of Pharmacology* 378(1): 57-62.

Teoh, H., S.W.S. Leung, and R.Y.K. Man (1999). Short-term exposure to physiological levels of 17beta-estradiol enhances endothelium-independent relaxation in porcine coronary artery. *Cardiovascular Research* 42(1): 224-231.

Truex, R.C. and M.Q. Smythe (1965). **Comparative morphology of the cardiac conduction tissue in animals.** *Annals of the New York Academy of Sciences* 127: 19-23.
NAL call number: 500 N484

Turjman, F., T.F. Massoud, C. Ji, G. Guglielmi, F. Vinuela, and J. Robert (1994). **Combined stent implantation and endosaccular coil placement for treatment of experimental wide-necked aneurysms: A feasibility study in swine.** *American Journal of Neuroradiology* 15(6): 1087-1090.

Van Vleet, J.F. and V.J. Ferrans (1986). **Cardiovascular diseases of swine.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J. Mersmann (ed.), Vol. 1 Boca Raton, FL: CRC Press, pp. 121-168.
NAL call number: RC669 S87

Vatner, D.E and S.F. Vatner S.F (1998). **Physiological and biochemical adrenergic regulation of the stunned myocardium.** *Molecular and Cellular Biochemistry* 186(1-2): 131-137.

Verdouw, P.D. and J.M. Hartog (1986). **Provocation and suppression of ventricular arrhythmias in domestic swine.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J. Mersmann (eds.), Vol. 2, Boca Raton, FL: CRC Press, pp. 121-156.
NAL call number: RC669 S87

Von Recum, A.F. (1986). ***Handbook of Biomaterials Evaluation***, NY: Macmillan Publishing.

White, C.J., S.R. Ramee, A.K. Banks, D. Wiktor, and H.L. Price (1992). **The Yucatan miniature swine: An atherogenic model to assess the early potency rates of an endovascular stent.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 156-162.
NAL call number: RB125.S79 1992

White, F.C., D.M. Roth, and C.M. Bloor (1986). **The pig as a model for myocardial ischemia and exercise.** *Laboratory Animal Science* 36(4): 351-356.
NAL call number: 410.9 P94

Wittnich, C., M.P. Belanger, B.S. Oh, and T.A. Salerno (1991). **Surgical model of volume overload-induced ventricular myocardial hypertrophy to study a clinical problem in humans.** *Journal of Investigative Surgery* 4(3): 333-338.

CENTRAL NERVOUS SYSTEM

Alitalo, I. (1979). **Ventral interbody implantation for fusion of the lumbar spine using polytetrafluoroethylene-carbonfiber and porous high density polyethylene: An experimental study in growing pigs.** *Acta Veterinaria Scandinavica* 71(Suppl): 1-58.
NAL call number: 41.8 AC87

Armstead, W.M., C.W. Leffler, D.W. Busija, D.G. Beasley, and R. Mirro (April 1988). **Adrenergic and prostanoid mechanisms in control of cerebral blood flow in hypotensive newborn pigs.** *American Journal of Physiology* 254(4, Part 2): H671-H677.

Boogerd, W. and A.C.B. Peters (1986). **A simple method for obtaining cerebrospinal fluid from a pig model of herpes enecephalitis.** *Laboratory Animal Science* 36(4): 386-388.
NAL call number: 410.9 P94

Boyce, R.W., D.C. Ebert, T.A. Youngs, C.L. Paddock, L. Mosekilde, M.L. Stevens, and H.J.G. Gundersen (1995). **Unbiased estimation of vertebral trabecular connectivity in calcium restricted ovariectomized minipigs.** *Bone* 16(6): 637-642.

Drisko, J.E., T.D. Faidley, D.F. Hora Jr., G.W. Niebauer, W.P. Feeney, B.H. Friscino, and G.J. Hickey (1996). **Transorbital approach to the porcine pituitary.** *Journal of Investigative Surgery* 9(4): 305-311.

Franke, H., H.J. Galla, and C.T. Beuckmann (Feb. 1999). **An improved low-permeability in vitro-model of the blood-brain barrier: transport studies on retinoids, sucrose, haloperidol, caffeine and mannitol.** *Brain Research* 818(1): 65-71.

Ganz, J.C. and N.N. Zwetnow (1990). **A quantitative study of some factors affecting the outcome of experimental epidural bleeding in swine.** *Acta Neurochirurgica* 102(3-4): 164-172.

Helfaer, M.A., J.R. Kirsch, S.E. Haun, R.C. Koehler, and R.J. Traystman (1991). **Age-related cerebrovascular reactivity to CO2 after cerebral ischemia in swine.** *American Journal of Physiology* 260: H1482-1488.

Kailasnath, P., and J.C. Chaloupka (Aug. 1996). **Mathematical modeling of AVM physiology using compartmental network analysis: theoretical considerations and preliminary in vivo validation using a previously developed animal model.** *Neurological Research* 18(4): 361-366.

Kraeling, R.R., C.R. Barb, and G.B. Rampacek (1986). **Hypophysectomy and hypophysial stalk transection in the pig: Technique and application to studies of ovarian follicular development.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, NY: Plenum Publishers, pp. 425-436.
NAL call number: RB125.C68 1985

Laferriere, A., J.K. Liu, and I.R. Moss (Jan. 1999). **Mu- and delta-opioid receptor densities in respiratory-related brainstem regions of neonatal swine.** *Brain Research. Developmental Brain Research* 112(1): 1-9.

MacIntyre, C.J., B.Y. Ong, and D.S. Sitar (1987). **Cerebral blood flow in intoxicated newborn piglets.** *Canadian Journal of Physiology and Pharmacology* 65(1): 92-95.

Manohar, M. and C. Parks (1984). **Porcine regional brain and myocardial blood flows during halothane-0_2 and halothane-nitrous oxide anesthesia: Comparisons with equipotent isoflurane anesthesia.** *American Journal of Veterinary Research* 45(3): 465-473.
NAL call number: 41.8 Am3A

Manohar, M. and C. Parks (1984). **Regional distribution of brain and myocardial perfusion in swine while awake and during 1.0 and 1.5 MAC isoflurane anaesthesia produced without or with 50% nitrous oxide.** *Cardiovascular Research* 18(6): 344-353.

Manohar, M. (1985). **Regional distribution of porcine brain blood flow during 50% nitrous oxide administration.** *American Journal of Veterinary Research* 46(4): 831-835.
NAL call number: 41.8 Am3A

McKernan, R. M., S. Castro, J.A. Poat, and E.H. Wong (1989). **Solubilization of the N-methyl-D-aspartate receptor channel complex from rat and porcine brain.** *Journal of Neurochemistry* 52: 777-785.

Paulsen, K.D., Miga, M.I., and F.E. Kennedy (Feb. 1999). **A computational model for tracking subsurface tissue deformation during stereotactic neurosurgery.** *IEEE Transactions on Biomedical Engineering* 46(2): 213-225.

Punto, L. (1980). **Lumbar leptomenigeal and radicular reactions after the subarachnial injection of water-soluble contrast media, meglumine iocarmate and metrizamide: an experimental study in the pig.** *Acta Veterinaria Scandinavica* 73(Suppl): 1-52.
NAL call number: 41.8 AC87

Salinas-Zeballos, M.E., G.A. Zeballos, and P.M. Gootman (1986). **A stereotaxic atlas of the developing swine *(Sus scrofa)* forebrain.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 2, NY: Plenum Publishers, pp. 887-906.
NAL call number: RB125.C68 1985

Stodkilde-Jorgensen, H., J. Frokiaer, H.J. Kirkeby, F. Madsen, and N. Boye (1986). **Preparation of a cerebral perfusion model in the pig: Anatomic considerations.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, NY: Plenum Publishers, pp. 719-725.
NAL call number: RB125.C68 1985

Swindle, M.M. (1998). **Head and neck surgery/ central nervous system.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 203-214.
NAL call number: RD29.5.S94S944 1998

Wagner, K.R., Xi, G., Hua, Y., et al. (March 1999). **Ultra-early clot aspiration after lysis with tissue plasminogen activator in a porcine model of intracerebral hemorrhage: edema reduction and blood-brain barrier protection.** *Journal of Neurosurgery* 90(3): 491-498.

Wasowicz, K. and Panula, P. (1994). **Distribution of neuropeptide FF in porcine spinal cord in comparison with other neuropeptides and serotonin.** *Journal of Comparative Neurology* 346: 530-540.

Zink, B.J., M.A. Sheinberg, X. Wang, M. Mertz, S.A. Stern, and A.L. Betz (Dec. 1998). **Acute ethanol intoxication in a model of traumatic brain injury with hemorrhagic shock: effects on early physiological response.** *Journal of Neurosurgery* 89(6): 983-990.

ENDOSCOPIC and LAPAROSCOPIC SURGERY

Assimos, D.G., W.H. Boyce, M. Lively, N. Weidner, J.C. Lewis, G. Howard, E. Furr, M. Sorrell, D.L. McCullough, B.C. Bullock, and T.E. Palmer (1986). **Porcine urologic models including jejunoileal bypass.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.),Vol. 1, NY: Plenum Press, pp. 399-424.
NAL call number: RB125.C68 1985

Bailey, R.W., A.L. Imbembo, and K.A. Zucker (1991). **Establishment of a laparoscopic cholecystectomy training program.** *American Surgeon* 57(4): 231-236.

Bessell, J.R., G. Pike, G.G. Jamieson, and G.J. Maddern (Dec. 1995). **Physiological outcome following laparoscopic highly selective vagotomy. A controlled study in a pig model.** *Surgical Endoscopy* 9(12): 1283-1288.

Brunt, L.M., E.P. Molmenti, K. Kerbl, N.J. Soper, A.M. Stone, and R.V. Clayman (1993). **Retroperitoneal endoscopic adrenalectomy: an experimental study.** *Surgical Laparoscopy and Endoscopy* 3(4): 300-306.

Carreno, O.J., W.R. Wilson, and P.K. Nootheti (1999). **Exploring endoscopic neck surgery in a porcine model.** *The Laryngoscope* 109(2, Part 1): 236-240.

Chiu, A.W., M.T. Chen, W.J. Huang, S.T. Young, C. Cheng, S.W. Huang, C.L. Chu, and L.S. Chang (1992). **Laparscopic nephrectomy in a porcine model.** *European Urology* 22(3): 250-254.

Fleshman, J.W., L.M. Brunt, R.D. Fry, E.H. Birnbaum, C.L. Simmang, A. Mazor, N. Soper, L. Freeman, and I.J. Kodner (1993). **Laparoscopic anterior resection of the rectum using a triple stapled intracorporeal anastomosis in the pig.** *Surgical Laparoscopy and Endoscopy* 3(2): 119-126.

Freeman, L.J. (1994). **Laparoscopic surgery courses.** In: *Research Animal Anesthesia, Analgesia and Surgery.* A.C. Smith and M.M. Swindle (eds.), Greenbelt, MD: SCAW, pp. 15-24.
NAL call number: SF914 R49 1994

Freys, S.M., J. Heimbucher, and K.H. Fuchs (1995). **Teaching upper gastrointestinal endoscopy: the pig stomach.** *Endoscopy* 27(1): 73-76.

Garrard, C.L., R.H. Clements, L. Nanney, et al. (Jan. 1999). **Adhesion formation is reduced after laparoscopic surgery.** *Surgical Endoscopy* 13(1): 10-13.

Gholson, C.F., J.M. Provenza, R.C. Silver, and B. Bacon (1990). **Endoscopic retrograde cholangiography in the swine: a new model for endoscopic training and hepatobiliary research.** *Gastrointestinal Endoscopy* 36(6): 600-603.

Guglielmi, G., F. Vinuela, J. Dion, and G. Duckwiler (1991). **Electrothrombosis of saccular aneurysms via endovascular approach. Part 2: Preliminary clinical experience.** *Journal of Neourosurgery* 75(1): 8-14.

Jones, D.R., G.M. Graeber, G.G. Tanguilig, G. Hobbs, and G.F. Murray (1993). **Effects of insufflation on hemodynamics during thoracoscopy.** *Annals of Thoracic Surgery* 55(6): 1379-1382.

Jones, J.A., S. Johnston, and M. Campbell (May 1999). **Endoscopic surgery and telemedicine in microgravity: developing contingency procedures for exploratory class spaceflight.** *Urology* 53(5): 892-897.

Jorgensen, J.O., R.B. Gillies, N.J. Lalak, and D.R. Hunt (1994). **Lower limb venous hemodynamics during laparoscopy: an animal study.** *Surgical Laparoscopy and Endoscopy* 4(1): 32-35.

Josephs, L.G., J.H. Arnold, and J.L. Sawyers (1992). **Laparoscopic highly selective vagotomy.** *Journal of Laparoendoscopic Surgery* 2(3): 151-153.

Kelly, J.J., W.C. Meyers, A. Sandor, and D.E. Litwin (Jan. 1999). **Laparoscopic gastrectomy in the porcine model: our initial experience with a new hand-assist device.** *Surgical Laparoscopy and Endoscopy* 9(1): 49-52.

Kerbl, K., R.S. Figneshau, R.V. Clayman, P.S. Chadhoke, L.R. Kavoussi, D.M. Albala, and A.M. Stone (1993). **Retroperiotoneal laparoscopic nephrectomy: laboratory and clinical experience.** *Journal of Endourology* 7(1):23-26.

Kopchok, G.E., D.M. Cavaye, S.R. Klein, M.P. Mueller, J.L. Lee, and R.A. White (1993). **Endoscopic surgery training: Application of an in vitro trainer and in vivo swine model.** *Journal of Investigative Surgery* 6(4): 329-337.

Kronowitz, S.J. (April 1999)**. Endoscopic subcutaneous surgery: a new surgical approach.** *Annals of Plastic Surgery* 42(4): 357-364.

Lakshmanan, Y., R.I. Mathews, J.A. Cadeddu, R.N. Chen, B.L. Slaughenhoupt, R.G. Moore, and S.G. Docimo (Feb. 1999). **Feasibility of total intravesical endoscopic surgery using mini-instruments in a porcine model.** *Journal of Endourology* 13(1): 41-45.

Layman, T.S., R.P. Burns, K.E. Chandler, W.L. Russell, and R.G. Cook (1993). **Laparoscopic inguinal herniorrhaphy in a swine model.** *American Surgeon* 59(1): 13-19.

Lee, F.T. Jr, Chosy, S.G., Weber, S.M., et. al. (March 1999). **Hepatic cryosurgery via minilaparotomy in a porcine model: an alternative to open cryosurgery.** *Surgical Endoscopy* 13(3): 253-259.

Leighton, T.A., S.Y. Liu, and F.S. Bongard (1993). **Comparative cardiopulmonary effects of carbon dioxide versus helium pneumoperitoneum.** *Surgery* 113(5): 527-531.

Liu, J.B., R.I. Feld, B.B. Goldberg, D.J. Barbot, L.N. Nazarian, D.A. Merton, N.M. Rawool, F.E. Rosato, C.A. Winkel, D.R. Gillum (1995). **Laparoscopic gray-scale and color Doppler US: preliminary animal and clinical studies.** *Radiology* 194(3): 851-857.

Long, J.P. and G.T. Faller (Feb 1999). **Percutaneous cryoablation of the kidney in a porcine model.** *Cryobiology* 38(1): 89-93.

Lyons, J.M.and R.E. Sosa (1992). **Laparoscopy: new applications of an established technique.** *Urologic Nursing* 12(1): 2-8.

Ma, S., and R.H. Fang (1994). **Endoscopic mandibular angle surgery. A swine model.** *Annals of Plastic Surgery* 33(5): 473-475.

Margossian, H, A. Garcia-Ruiz, T. Falcone (1998) **Robotically assisted laparoscopic tubal anastomosis in a porcine model: A pilot study.** *Journal of Laparoendoscopic and Advanced Surgical Techniques*. Part A, 8(2): 69-73.

Moncure, M., R. Salem, K. Moncure, M. Testaiuti. R. Marburger, X. Ye, C. Brathwaite, and S.E. Ross (1999). **Central nervous system metabolic and physiologic effects of laparoscopy.** *American Surgeon* 65(2): 168-172.

Nguyen, N.T., J.D. Lukerich, S. Schatz, et al. (1999). **Effect of open and laparoscopic surgery on cellular immunity in a swine model.** *Surgical Laparoscopy and Endoscopy* 9(3): 176-180.

Noar, M.D. (1995). **An established porcine model for animate training in diagnostic and therapeutic ERCP.** *Endoscopy* 27(1): 77-80.

Noel, P., H. Fagot, J.M. Fabre, C. Mann, F. Quenet, F. Guillon, H. Baumel, and J. Domergue (1994). **Resection anastomosis of the small intestine by celioscopy in swine. Comparative experimental study between manual and mechanical anastomosis.** *Annales de Chirurgie* 48(10): 921-929.

Olinger, A., G. Pistorius, and W. Lindemann (Feb. 1999). **Effectiveness of a hands-on training course for laparoscopic spine surgery in a porcine model.** *Surgical Endoscopy* 13(2): 118-122.

Olson, K.H., E.G. Balcos, M.C. Lowe, and M.P. Bubrick (1995). **A comparative study of open, laparoscopic intracorporeal and laparoscopic assisted low anterior resection and anastomosis in pigs.** *American Surgeon* 61(3): 197-201.

Ou, C.S., J. Presthus, and E. Beadle (1993). **Laparoscopic bladder neck suspension using hernia mesh and surgical staples.** *Journal of Laparoendoscopic Surgery* 3(6): 563-566.

Pasricha, P.J., T.G. Tietjen, and A.N. Kalloo (1995). Biliary manometry in swine: A unique endoscopic model for teaching and research. *Endoscopy* 27(1): 70-72.

Pietrafitta, J.J., L.S. Schultz, J.N. Graber, and D.F. Hickok (1992). **An experimental technique of laparoscopic bowel resection and anastomosis.** *Surgical Laparoscopy and Endoscopy* 2(3): 205-211.

Ramsey, D.E., N. Aldred, and J.M. Power (1993). **A simplified approach to the anesthesia of porcine laparoscopic surgical subjects.** *Laboratory Animal Science* 43(4): 336-337.
NAL call number: 410.9 P94

Rey, J.F. and T. Romanczk (1995). **The development of experimental models in the teaching of endoscopy: an overview.** *Endoscopy* 27(1): 101-105.

Rodriguez, J., K. Kensing, C. Cardenas, and P. Stoltenberg (1993). **Laparoscopy-guided subhepatic cholecystostomy: a feasibility study in swine.** *Gastrointestinal Endoscopy* 39(2): 176-178.

Said, S. (Jan. 1999). **Gasless videoendoscopic implantation of aortobifemoral vascular prostheses via transperitoneal or extraperitoneal approach in an animal model [letter].** *Surgical Endoscopy* 13(1): 94.

Savioz, D., Jeanjacquot, A., Savioz, M., et. al. (1999). **Optimization of the kinetics of cooling of kidneys: a pig model.** *European Surgical Research* 31(1): 3-8.

Shekarriz, H., B. Shekarriz, and J.,Upadhyay (April 1999). **Experimental laparoscopic partial nephrectomy: Hydro-jet dissection in a porcine model: Initial experience.** *Journal of Urology* 161(4, Suppl.): 2.

Siegel, J.H. and M.A. Korsten (1989). **ERCP in a nonhuman primate.** *Gastrointestinal Endoscopy* 35(6): 557-559.

Soper, N.J., L.M. Brunt, J. Fleshman Jr., D.L. Dunnegan, and R.V. Clayman (1993). **Laparoscopic small bowel resection and anastomosis.** *Surgical Laparoscopy and Endoscopy* 3(1): 6-12.

Soper, N.J., J.A. Barteau, R.V. Clayman, and M.J. Becich (1991). **Safety and efficacy of laparoscopic cholecystectomy using monopolar electrocautery in the porcine model.** *Surgical Laparoscopy and Endoscopy* 1(1): 17-22.

Soper, N.J. and J.G. Hunter (1992). **Suturing and knot tying in laparoscopy.** *Surgical Clinics of North America* 72(5): 1139-1152.

Swindle, M.M. (1998). **Endoscopic/laparoscopic surgery.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 265-282.
NAL call number: RD29.5.S94S944 1998

Travis, D.L., A.W. Paulsen, and Y. Genyk (March-April 1996). **Development of an in situ isolated porcine liver perfusion model for tightly controlled physiologic and pharmacologic studies.** *Journal of Investigative Surgery* 9(2): 131-147.

Vancaillie, T.G. (1993). **Laparoscopic bladder neck suspension.** In: *Atlas of the Urologic Clinics of North America: Urologic Laparoscopic Surgery.* H.N. Winfield (ed.), Philadelphia: WB Saunders, pp. 73-86.

FETAL

Care, A.D., I.W. Caple, R. Singh, and M. Peddie (1986). **Studies on calcium homeostasis in the fetal Yucatan miniature pig.** *Laboratory Animal Science* 36(4): 389-392.
NAL call number: 410.9 P94

Dungan, L.J., D.B. Wiest, D.A. Fyfe, A.C. Smith, and M.M. Swindle (1995). **Hematology, serology and serum protein electrophoresis in fetal miniature Yucatan swine: normal data.** *Laboratory Animal Science* 45(3): 285-289.
NAL call number: 410.9 P94

Haworth, S.G. and A.A. Hislop (1981). **Adaptation of the pulmonary circulation to extra-uterine life in the pig and its relavance to the human infant.** *Cardiovascular Research* 15(2): 108-119.

Jackson, B.T. and H. Egdahl (1960). **The performance of complex fetal operations in utero without amniotic fluid**

loss or other disturbances of fetal-maternal relationships. *Surgery* 48: 564-570.

Jones, M.D. and B.B. Hudak (1988). **Fetal and neonatal surgery.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 300-308.
NAL call number: RB125 E9

Macdonald, A.A., A.J. Llanos, M.A. Heymann and A.M. Rudolph (1981). **Cardiovascular responsiveness of the pig fetus to autonomic blockade.** *Pflugers Archiv* 390(3): 262-264.

Randall, G.C.B. (1986). **Chronic implantations of catheters and other surgical techniques in fetal pigs.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 2, NY: Plenum Press, pp. 1179-1186.
NAL call number: RB125.C68 1985

Rosenkrantz, J.G., R.C. Simon, and J.H. Carlisle (1968). **Fetal surgery in the pig with a review of other mammalian fetal techniques.** *Journal of Pediatric Surgery* 3(3): 392-397.

Sasaki, N., K. Yoneda, C. Bigger, J. Brown, and Y. Mullen (1984). **Fetal pancreas transplantation in miniature swine. Developmental characteristics of fetal pig pancreases.** *Transplantation* 38(4): 335-340.

Sims, C.D., P.E.M. Butler, R. Casanova, M.A. Randolph, and M.J. Yaremchuk (1997). **Prolonged general anesthesia for experimental craniofacial surgery in fetal swine.** *Journal of Investigative Surgery* 10(1-2): 53-57.

Swindle, M.M., D.B. Wiest. S.S. Garner, A.C. Smith, and P.C. Gillette (1996). **Pregnant Yucatan miniature swine as a model for investigating fetal drug therapy.** In: *Advances in Swine in Biomedical Research*, M. Tumbleson and L. Schook (eds.), Vol. 2, NY: Plenum Press, pp. 629-635.
NAL call number: RB125.A36 1996

Swindle, M.M., D.B. Wiest, A.C. Smith, S.S. Garner, C.C. Case, R.P. Thompson, D.A. Fyfe, and P.C. Gillette (1996). **Fetal surgical protocols in Yucatan miniature swine.** *Laboratory Animal Science* 46(1): 90-95.
NAL call number: 410.9 P94

West D.A., Moore R.G., Vogler G.A., et al. (April 1999). **Pneumosleeve-assisted laparoscopy reduces warm ischemia time for live-donor nephrectomy in the porcine model.** *Journal of Urology* 161(4, Suppl.): 23.

GASTROINTESTINAL

Brown, D.R. and J.M. Terris (1996). **Swine in physiological and pathophysiological research.** In: *Advances in Swine in Biomedical Research*, M.E. Tumbleson and L.B. Schook (eds.), Vol. 1, NY: Plenum Press, pp 5-6.
NAL call number: RB125.A36 1996

Dudgeon, D.L., T.R. Gadacz, H.E. Gladen, K.D. Lillemoe, and M.M. Swindle (1988). **Alimentary tract and liver.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 217-257.
NAL call number: RB125 E9

Eaton, K.A. (1999). **Animal models of *Helicobacter gastritis*.** *Current Topics in Microbiology and Immunology* 241: 123-154.

Fleming, S.E., and D. Arce (1986). **Using the pig to study digestion and fermentation in the gut.** In: M.E. Tumbleson (ed.), *Swine in Biomedical Research*, Vol. 1, NY: Plenum Publishers, pp.123-134.
NAL call number: RB125.C68 1985

Hand, M.S., R.W. Phillips, C.W. Miller, R.A. Mason, and W.V. Lumb (1981). **A method for quantitation of hepatic, pancreatic and intestinal function in conscious Yucatan miniature swine.** *Laboratory Animal Science* 31(6): 728-731.
NAL call number: 410.9 P94

Hennig, U., B. Idzior, J. Wunsche, and H.D. Bock (1980). **Fistulation technique for the digestive tract of swine for the examination of protein metabolism.** *Archiv fur Experimentelle Veterinarmedizin* 34(3): 325-331.
NAL call number: 41.8 EX7

Hennig, U., W.B. Souffrant, J.P. Laplace, C. Fevrier, and M. Anke (1997). **Retention of minerals by pigs with four models of ileorectostomy compared with intact animals.** In: *EAAP Publication: Digestive Physiology of the Pig*, Proceedings of the 7th International Symposium Saint Malo, France. 26-28 May 1997, J.P. Laplace, C. Fevrier, and A. Barbeau (eds.), Institut National de la Recherche Agronomique (INRA): Paris, France, pp. 344-347, ISBN: 2-7380-0749-X.
NAL call number: 49.9 Eu7 no.88

Hoban, L.D., J.A. Paschall, J. Eckstein, V. Nadkarni, R.L. Che-Hung, T.J. Williams, D. Rensch, J.J. Nevola, and J.A. Carcillo (1992). **Awake porcine model of intraperitoneal sepsis.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 246-264.
NAL call number: RB125.S79 1992

Hoebler, C., C. Cherbut, M.F. Devaux, G. Lecannu, C.H. Malbert, J.P. Laplace, and J.L. Barry (1997). **Size of particles of bread and pasta emptied from the stomach of pigs, used as human models.** In: *EAAP Publication: Digestive Physiology of the Pig*, Proceedings of the 7th International Symposium Saint Malo, France. 26-28 May 1997, J.P. Laplace, C. Fevrier, and A. Barbeau (eds.), Institut National de la Recherche Agronomique (INRA): Paris, France, pp. 526-529, ISBN: 2-7380-0749-X.
NAL call number: 49.9 Eu7 no.88

Kadirkamanathan, S.S., E. Yazaki, D.F. Evans, C.C. Hepworth, F. Gong, and C.P. Swain (June 1999). **An ambulant porcine model of acid reflux used to evaluate endoscopic gastroplasty.** *Gut* 44(6): 782-788.

Kjar, H.A. (1976). **Amputation of prolapsed rectum in young pigs.** *Journal of the American Veterinary Association* 168(3): 229-230.
NAL call number: 41.8 Am3

Kreimeier, U., U.B. Brueckner, S. Gerspach, K. Veitinger, and K. Messmer (1993). **A porcine model of hyperdynamic endotoxinemia: Patterns of respiratory, macrocirculatory, and regional blood flow changes.** *Journal of Investigative Surgery* 6(2): 143-156.

Malbert, C.H. and M. Horowitz (1997). **The pig as a model for human digestive motor activity.** In: *EAAP Publication: Digestive Physiology in Pigs*, Proceedings of the 7th International Symposium Saint Malo, France. 26-28 May 1997, J.P. Laplace, C. Fevrier, and A. Barbeau (eds.), Institut National de la Recherche Agronomique (INRA): Paris, France, pp. 3-12, ISBN: 2-7380-0749-X.
NAL call number: 49.9 Eu7 no.88

Maurer, C.A., K. Z'graggen, W. Zimmermann, H.J. Hani, D. Mettler, and M.W. Buchler (Nov. 1999). **Experimental study of neorectal physiology after formation of a transverse coloplasty pouch.** *British Journal of Surgery* 86(11): 1451-1458.

Mosenthin, R. (Oct. 1998). **Physiology of small and large intestine of swine--review.** *Asian-Australasian Journal of Animal Sciences* 11(5): 608-619.
NAL call number: SF55.A78A7

Nishijima, M.K., M.J. Breslow, C.F. Miller, and R.J. Traystman (1988). **Effect of naloxone and iluprofen on organ**

blood flow during endotoxic shock in pig. *American Journal of Physiology* 255(1, Pt. 2): H177-H184.

O'Bichere, A., P. Sibbons, and C. Green (April 1999). **Prospective randomised controlled comparison of the effect of GTN and diltiazem on colonic emptying in a porcine model.** *Gut* 44(Suppl. 1): A135.

Pallauf, J. (1997). ***Proceedings of the Society of Nutrition Physiology, Gottingen, Germany, 4-6 March 1997.*** Proceedings of the Society of Nutrition Physiology: Volume 6, 51st, Gottingen, Germany, 04.-06.03.1997 vol. 6, DLG Verlags GmbH: Frankfurt am Main, Germany, 236 pp., ISBN: 3-7690-4090-2.

Pekas, J.C. (1983). **A method for direct gastric feeding and the effect on voluntary ingestion in young swine.** *Appetite* 4(1): 23-30.

Pritchard, T.J., W.A. Kottun, and R.L. Kirkman (1986). **Technical aspects of small intestinal transplantation in young pigs.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, NY: Plenum Publishers, pp. 391-398.
NAL call number: RB125.C68 1985

Pritchard, T.J. and R.L. Kirkman (1988). **Transplantation of the gastrointestinal tract: small intestine.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 291-293.
NAL call number: RB125 E9

Reeds, P. and J. Odle (1986). **Pigs as models for nutrient functional interaction** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 2, NY: Plenum Publishers, pp. 709-711.
NAL call number: RB125.C68 1985

Ricour, C.,Y. Revillon, F. Arnaud-Battandier, D. Ghnassia, P. Weyne, A. Lauffenburger, J. Jos, J.L. Fontaine, P. Gallix, and M. Vaiman (1983). **Successful small bowel allografts in piglets using cyclosporine.** *Transplantation Proceedings* 15(Suppls. 1-2): 3019-3026.

Salzman, A.L., K.E. Strong, H.L. Wang, P.S. Wollert, T.J. Vandermeer, and M.P. Fink (1994). **Intraluminal balloonless air tonometry: a new method for determination of gastrointestinal mucosal carbon dioxide tension.** *Critical Care Medicine* 22(1): 126-134.

Sarr, M.G. (1996). **Enteric physiology of the transplanted gut: Absorption and motility.** *Digestive Surgery* 13(3): 181-193.

Schantz, L.D., K. Laber-Laird, S. Bingel, and M. Swindle (1996). **Pigs: Applied anatomy of the gastrointestinal tract.** In: *Essentials of Experimental Surgery: Gastroenterology*, S.L. Jensen and H. Gregersen (eds.), NY: Harwood Academic Publishers, pp. 2611-2619, ISBN: 3-7186-5496-2.

Schranz, D., R.G. Huth, H. Stopfkuchen, and B.K. Jungst (1988). **The effect of nifedipine alone or combined with low dose acetylsalicylic acid on endotoxin-induced pulmonary hypertension in the piglet.** *Intensive Care Medicine* 14(6): 595-601.

Swindle, M.M. (1998). **Gastrointestinal procedures.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 81-104.
NAL call number: RD29.5.S94S944 1998

Swindle, M.M., A.C. Smith, and J.A. Goodrich (1998). **Chronic cannulation and fistuation procedures in swine: a review and recommendations.** *Journal of Investigative Surgery* 11: 7-20.

Terblanche, J. and R. Van Horn-Hickman (1978). **The prevention of gastric ulceration by highly selective vagotomy in a new peptic ulcer experimental model, the bile duct-ligated pig.** *Surgery* 84(2): 206-211.

Vonderfecht, H.E. (1978). **Amputation of rectal prolapse in pigs.** *Veterinary Medicine. Small Animal Clinician* 73(2):

201-206.
NAL call number: 41.8 M69

Westrom, B.R. (1997). **The young pig as a model for intestinal absorption of macromolecules.** In: *EAAP Publication: Digestive Physiology of the Pig*, Proceedings of the 7th International Symposium Saint Malo, France. 26-28 May 1997, J.P. Laplace, C. Fevrier, and A. Barbeau (eds.), Institut National de la Recherche Agronomique (INRA): Paris, France, pp. 37-40, ISBN: 2-7380-0749-X.
NAL call number: 49.9 Eu7 no.88

Yen, J.T., J.A. Nienaber, D.A. Hill, and W.G. Pond (1991). **Potential contribution of absorbed volatile fatty acids to whole animal energy requirement in conscious swine.** *Journal of Animal Science* 69(5): 2001-2012.
NAL call number: 49 J82

GENERAL

Allen, T. (1998). ***Information Resources for Institutional Animal Care and Use Committees 1985-1999. (AWIC resource series no. 7)***, Beltsville, MD: National Agricultural Library, 600p.
NAL call number: aHV4701.A94 no.7

Benson, G.J., J.C. Thurmon, D.R. Nelson, P.H. Langner, B. Gustafsson, C. Neff Davis, and L.E. Davis (1985). **A method for the objective assessment of stress in pigs.** In: *Porcine Stress Syndrome*, International Pig Veterinary Society. Proceedings 8th IPVS Congress Ghent, Belgium. August 27-31, 1984, M. Pensaert, J. Hoorens, P. Lampo, P. Bonte, W. Coussement, and P. Debouck (eds.), Chapter 11.

Bobbie, D.L. and M.M. Swindle (1986). **Pulse monitoring, intramuscular, and intravascular injection sites in swine.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), NY: Plenum Press, pp. 273-277.
NAL call number: RB125.C68 1985

Boldrick, L. (1993). ***Veterinary Care of Pot-Bellied Pet Pigs***, Orange, CA: All Publishing Co.

Bollen, P.J., A.K. Hansen, and H.J. Rasmussen (2000). **Experimental techniques.** In: *The Laboratory Swine*, Boca Raton, FL: CRC Press LLC, pp. 83-106, ISBN: 0849310350.

Bollen, P.J., A.K. Hansen, and H.J. Rasmussen (2000). ***The Laboratory Swine***, Boca Raton, FL: CRC Press LLC, 135p., ISBN: 0849310350.

Bollen, P.J., A.K. Hansen, and H.J. Rasmussen (2000). **Important biological features.** In: *The Laboratory Swine*, Boca Raton, FL: CRC Press LLC, pp. 1-16, ISBN: 0849310350.

Broom, D.M. (1996). **A review of animal welfare measurement in pigs.** *Pig News and Information* 17(4): 109N-114N.
NAL call number: SF391 P55

Broom, D.M. and K.G. Johnson (1993). ***Stress and Animal Welfare***Chapman and Hall, London, 211p.
NAL call number: QP82.2 S8B76 1993

Close, B., K. Banister, V. Baumans, E.M. Bernoth, N. Bromage, J. Bunyan, W. Erhardt, P. Flecknell, and N. Gregory, H. Hackbarth, D. Morton, and C. Warwick (1996). **Recommendations for euthanasia of experimental animals: Part 1. DGXI of the European Commission.** *Laboratory Animals* 30: 293-316.
NAL call number: QL55 A1L3

Close, B., K. Banister, V. Baumans, E.M. Bernoth, N. Bromage, J. Bunyan, W. Erhardt, P. Flecknell, and N. Gregory,

H. Hackbarth, D. Morton, and C. Warwick (1997). **Recommendations for euthanasia of experimental animals: Part 2. DGXT of the European Commission.** *Laboratory Animals* 31: 1-32.
NAL call number: QL55 A1L3

Cramer, D.V., L. Podesta, and L. Makowka (1994). ***Handbook of Animal Models in Transplantation Research***, Boca Raton, FL: CRC Press, 352p.
NAL call number: RD120.7 H36 1994

Dougherty, R.W. (1981). ***Experimental Surgery in Farm Animals***, Ames, IA: Iowa State University Press, 146p.
NAL call number: RD29 D68 1981

Ethicon. (1988). ***Wound Closure Manual***, Sommerville, NJ: Ethicon, Inc.

Frandsson, R.D. (1981). ***Anatomy and Physiology of Farm Animals***, 3rd ed., Philadelphia: Lea and Febiger, 553p.
NAL call number: SF761 F8 1981

Frieling, W.J.A.M., Virat, M., Richard, S., et al. (1998). **Zootechny, ophthalmology, ECG and clinical pathology of the Yucatan micropig: results of a 28-day study, preliminary to a European ring evaluation trial.** *Scandinavian Journal of Laboratory Animal Science* 25(Suppl. 1): 153-159.
NAL call number: QL55.S322

Gilbert, S.G. (1966). ***Pictoral Anatomy of the Fetal Pig***, 2nd ed. Seattle: University of Washington Press.

Gillette, P.C. and J.C. Griffin (1986). ***Practical Cardiac Pacing***, Baltimore, MD: Williams and Wilkins, 296p., ISBN: 0-683-03526-6.

Gillette, P.C. and A. Garson Jr. (1981). ***Pediatric Cardiac Dysrhythmias,*** NY: Grune and Stratton.

Hannon, J.P., C.A. Bossone, and C.E. Wade (1990). **Normal physiological values for conscious pigs used in biomedical research.** *Laboratory Animal Science* 40: 293-298.
NAL call number: 410.9 P94

Houpt, T.R. (1986). **The handling of swine in research.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J. Mersmann (eds.), Vol. 1, Boca Raton, FL: CRC Press, pp. 25-38.
NAL call number: RC669 S87

Hu, C., A. Cheang, L. Retnam, and E.H. Yap (1993). **A simple technique for blood collection in the pig.** *Laboratory Animals* 27: 364-367.
NAL call number: QL55.A1L3

Institute of Laboratory Animal Resources, Commission on Life Sciences, National Research Council (1996). ***Guide for the Care and Use of Laboratory Animals,*** National Academy Press, Washington, DC, 7th ed., 125p.
NAL call number: SF406 G95 1996

Leman, A.D., B.E. Straw, W.L. Mengeling, S. D'Allaire, and D.J. Taylor (1992). ***Diseases of Swine***, 7th ed., Ames, IA: Iowa State University Press, 7th ed., 1021p.
NAL call number: SF971 D57 1992

Markowitz, J., J. Archibald, and H.G. Downie (1964). ***Experimental Surgery***, 5th ed., Baltimore, MD: Williams and Wilkins.

National Research Council (1998). ***The Nutrient Requirements of Swine***, 10th ed., Washington DC: National Academy Press, 189p.
NAL call number: SF396.5 N87 1998

National SPF Swine Accrediting Agency (1994). ***Rules and regulations***, Conrad, IA.

O'Driscoll, J. (1998). ***Information Resources for Livestock and Poultry Handling and Transport 1990-1998. (AWIC resource series no. 4)***, Beltsville, MD: National Agricultural Library, 158p. Available at http://www.nal.usda.gov/awic/pubs/livestock/lvstchap.htm
NAL call number: aHV4701.A94 no.4

Pond, W.G. and K. Houpt (1978). ***Biology of the Pig,*** Ithaca, NY: Comstock Publishing Associates, 371p.
NAL call number: SF768.2 S95P66

Reeves, D.E. (1993). ***Care and Management of Miniature Pet Pigs,*** Santa Barbara, CA: Veterinary Practice Publishing Co., 117p.
NAL call number: SF393 M55C37 1993

Ruys, T. (1991).***Handbook of Facilities Planning: Laboratory Animal Facilities***, Van Nostrand Reinhold, New York, NY, 422p.
NAL call number: Q180.57 H36

Saffron, J. and J.C. Gonder (1997). **The SPF Pig in Research.** *ILAR Journal* 38(1): 28-31.
NAL call number: QL55.A1I43

Smith, A.C. and M.M. Swindle (1994). ***Research Animal Anesthesia, Analgesia and Surgery***, Greenbelt, MD, SCAW, 170p.
NAL call number: SF914 R49 1994

Smith, C.P. (Dec. 1993). **Animal models in biomedical research: swine.** *NAL Special Reference Briefs* 94-01, Beltsville, MD: National Agricultural Library, 124p. Available at http://www.nal.usda.gov/awic/pubs/oldbib/srb94-01.htm
NAL call number: aS21.D27S64

Smith, C.P. (March 1991). **Animal models in biomedical research: swine.** *NAL Special Reference Briefs* 91-06, Beltsville, MD: National Agricultural Library, 61p.
NAL call number: aS21.D27S64

Stanton, H.C. and H.J. Mersmann (1986). ***Swine in Cardiovascular Research***, Vol. 1 and 2, Boca Raton, FL: CRC Press.
NAL call number: RC669 S87

Svendsen, O. (1998). **Proceedings of the Satellite Symposium to Eurotox '97: The Minipig in Toxicology, Aarhus, Denmark, June 24-25, 1997.** *Scandinavian Journal of Laboratory Animal Science* 25(Suppl. 1): 1-243.
NAL call number: QL55.S322

Swindle, M.M., A.C. Smith, K. Laber-Laird, and L. Dungan (1994). **Swine in biomedical research: management and models.** *ILAR News* 36(1): 1-5.
NAL call number: QL55.A1I43

Swindle, M.M. (1993). **Minipigs as pets.** *Proceedings of the North American Veterinary Conference* pp. 648-649.

Swindle, M.M. and A.C. Smith (1994). **Swine: Anesthesia and analgesia.** In: *Research Animal Anesthesia, Analgesia and Surgery*, A.C. Smith and M.M. Swindle (eds.), Greenbelt, MD: SCAW, pp. 107-110.
NAL call number: SF914 R49 1994

Swindle, M.M. (1983). ***Basic Surgical Exercises Using Swine***, New York, NY: Praeger Press, 237p.
NAL call number: RD29.5 S94S94

Swindle, M.M. (1998). ***Surgery, Anesthesia and Experimental Techniques in Swine***, Ames, IA: Iowa State University Press, 329p.
NAL call number: RD29.5.S94S944 1998

Swindle, M.M., A.C. Smith, and B.J.S. Hepburn (1988). **Swine as models in experimental surgery.** *Journal of Investigative Surgery* 1(1): 65-79.

Swindle, M.M. (1992). ***Swine as Models in Biomedical Research***, Ames, IA: Iowa State University Press.
NAL call number: RB125.S79 1992

Swindle, M.M. and R.J. Adams (1988). ***Experimental Surgery and Physiology: Induced Animal Models of Human Disease***, Baltimore, MD: Williams and Wilkins, 350p.
NAL call number: RB125 E9

Swindle, M.M. (1986). **Surgery and anesthesia.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), NY: Plenum Press, pp. 233-433.
NAL call number: RB125.C68 1985

Thurmon, B., W.J. Tranquilli, and G.J. Benson (1996). ***Lumb and Jones Veterinary Anesthesia***, 3rd ed, Baltimore, MD: Williams and Wilkins, 928p.
NAL call number: SF914 L82 1996

Tumbleson, M.E. and L.B. Schook (1996). ***Advances in Swine in Biomedical Research***, Vol. 1 and 2, NY: Plenum Press.
NAL call number: RB125.A36 1996

Tumbleson, M.E. (1986). ***Swine in Biomedical Research***, Vol. 1-3, NY: Plenum Press, 1988p.
NAL call number: RB125.C68 1985

Wallace, J., J. Sanford, M.W. Smith, and K.V. Spencer (1990). **The assessment and control of the severity of scientific procedures on laboratory animals. (Report of the Laboratory Animal Science Association working party: Assessment and control of severity.** *Laboratory Animals* 24: 97-130.
NAL call number: QL55.A1L3

HEAD and NECK

Bradley, P.F. (1982). **A two-stage procedure for reimplantation of autogenous freeze-treated mandibular bone.** *Journal of Oral and Maxillofacial Surgery* 40(5): 278-284.

Bermejo, A., O. Gonzalez, and J.M. Gonzalez (1993). **The pig as an animal model for experimentation on the temporomandibular articular complex.** *Oral Surgery, Oral Medicine, and Oral Pathology* 75(1): 18-23.

Campbell, W.M. and E.B. Kern (1981). **The nasal cycle in swine.** *Rhinology* 19(3): 127-148.

Courey, M.S., D. Fomin, T. Smith, S. Huang, D. Sanders, and L. Reinisch (Aug. 1999). **Histologic and physiologic effects of electrocautery, CO2 laser, and radiofrequency injury in the porcine soft palate.** *Laryngoscope* 109(8): 1316-1319.

Hargreaves, J.A. and B. Mitchell (1969). **Features of the dentition of the pig for experimental work.** *Journal of Dental Research* 48(21): 1103.

Ma, S. and R.H. Fang (1994). **Endoscopic mandibular angle surgery--a swine model.** *Annals of Plastic Surgery*

33(5): 473-475.

North, A.F. (1988). **Oral and maxillofacial surgery.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 173-203.
NAL call number: RB125 E9

Ouhayoun J.P., A.H.M. Shabana, S. Issahakian, J.L. Patat, G. Guillemin, M.H. Sawaf, and N. Forest (1992). **Histological evaluation of natural coral skeleton as a grafting material in miniature swine mandible.** *Journal of Materials Science: Materials in Medicine* 3(3): 222-228.

Pracy, J.P., A. White, Y. Mustafa, D. Smith, and M.E. Perry (April, 1998). **The comparative anatomy of the pig middle ear cavity: A model for middle ear inflammation in the human?** *Journal of Anatomy* 192(3): 359-368.

Swindle, M.M. (1998). **Head and neck surgery/ Central nervous system.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 203-214.
NAL call number: RD29.5.S94S944 1998

Weaver, M.E., F.M. Sorenson, and E.B. Jump (1962). **The miniature pig as an experimental animal in dental research.** *Archives of Oral Biology* 7(1): 17-24.

HEMODYNAMICS, CARDIOVASCULAR CATHETERIZATION and ELECTROPHYSIOLOGY

Arden, W.A., R.R. Fiscus, X. Wang, L. Yang, R. Maley, M. Nielsen, S. Lanzo, and Gross, D.R. (1994). **Elevations in circulating calcitonin gene-related peptide correlate with hemodynamic deterioration during endotoxic shock in pigs.** *Circulatory Shock* 42: 147-153.

Armstead, W.M., C.W. Leffler, D.W. Busija, D.G. Beasley, and R. Mirro (April 1988). **Adrenergic and prostanoid mechanisms in control of cerebral blood flow in hypotensive newborn pigs.** *American Journal of Physiology* 254(4, Part 2): H671-H677.

Benharkate, M., V. Zanini, R. Blanc, O. Boucheix, F. Coyez, J.P. Genevois, and M. Pairet. (1993). **Hemodynamic parameters of anesthetized pigs: A comparative study of farm piglets and Gottingen and Yucatan miniature swine.** *Laboratory Animal Science* 43(1): 68-72.
NAL call number: 410.9 P94

Bathe, O.F., A.W. Chow, and P.T. Phang (Jan. 1998). **Splanchnic origin of cytokines in a porcine model of mesenteric ischemia-reperfusion.** *Surgery* 123(1): 79-88.

Bloor, C.M., F.C. White, and D.M. Roth (1992). **The pig as a model of myocardial ischemia and gradual coronary occlusion.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 163-175.
NAL call number: RB125.S79 1992

Bloor, C.M., F.C. White, and R.J. Lammers (1986). **Cardiac ischemia and coronary blood flow in swine.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J. Mersmann (eds.), Vol. 2, Boca Raton, FL: CRC Press, pp. 87-119.
NAL call number: RC669 S87

Bollen, P.J., A.K. Hansen, and H.J. Rasmussen (2000). **Experimental techniques: catheterization.** In: *The Laboratory Swine*, Boca Raton, FL: CRC Press LLC, pp. 94-96, ISBN: 0849310350.

Brody, S., J.E. Comfort, and J.S. Mathews (1928). **Further investigations on surface area with special reference to**

its significance in energy metabolism. *Research Bulletin [microform]*, University of Missouri, College of Agriculture, Agricultural Experiment Station 115.
NAL call number: Film S-1588

Brody, S. and H.H. Kibler (1944). **Table for measuring the body surface area of swine.** *Research Bulletin [microform]*, University of Missouri, College of Agriculture, Agricultural Experiment Station 380.
NAL call number: Film S-1588

Brody, S. and H.H. Kibler (1944). **Resting energy metabolism and pulmonary ventilation in growing swine.** *Research Bulletin [microform]*, University of Missouri, College of Agriculture, Agricultural Experiment Station 380.
NAL call number: 100 M693 (3) no.380

Chaloupka, J.C., D.C. Huddle, J. Alderman, S. Fink, R. Hammond, and H.V. Vinters (March 1999). **A reexamination of the angiotoxicity of superselective injection of DMSO in the swine rete embolization model.** *American Journal of Neuroradiology* 20(3): 401-410.

Corin, W.J., M.M. Swindle, J.F. Spann Jr., M. Frankis, W.W.R. Biederman, A. Smith, A. Taylor, and B.A. Carabello (1988). **The mechanism of decreased stroke volume in children and swine with ventricular septal defect and failure to thrive.** *Journal of Clinical Investigation* 82(2): 544-551.

Crespo, S.G., J.M. Schoffstall, L.R. Fuhs, and W.H. Spivey (1991). **Comparison of two doses of endotracheal epinephrine in a cardiac arrest model.** *Annals of Emergency Medicine* 20: 230-234.

Dalibon, N., S. Schlumberger, M. Saada, M. Fischler, and B. Riou (Jan.1999). **Haemodynamic assessment of hypovolaemia under general anaesthesia in pigs submitted to graded haemorrhage and retransfusion.** *British Journal of Anaesthesia* 82(1): 97-103.

Dawson, R.C., A.F. Krisht, D.L. Barrow, G.J. Joseph, G.G. Shengelaia, and B. Bonner (1995). **Treatment of experimental aneurysms using collagen-coated microcoils.** *Neurosurgery* 36(1): 133-140.

Donaldson, M.D., C.J. Vesey, P.M. Bouloux, J.D. Watson, G.M. Besser, and C. Hinds (1993). **Plasma catecholamine levels in porcine *Escherichia coli* septicaemia and following treatment with buprenorphine or naloxone.** *Circulatory Shock* 39: 169-177.

Donaldson, M.D., C.J. Vesey, M. Wilks, and C.J. Hinds (1988). **Beneficial effects of buprenorphine (a partial opiate agonist) in porcine *Escherichia coli* septicaemia: a comparison with naloxone.** *Circulatory Shock* 25: 209-221.

Donaldson, M.D., C.J. Vesey, M. Wilks, and C.J. Hinds (1991). **Lack of effect of ACTH in porcine Escherichia coli septic shock.** *Circulatory Shock* 35(3): 152-158.

Drougas, J.G., S.E. Barnard, J.K. Wright, M. Sika, R.R Lopez, K.A. Stokes, P.E. Williams, and C.W. Pinson (1996). **A model for the extended studies of hepatic hemodynamics and metabolism in swine.** *Laboratory Animal Science* 46(6): 648-655.
NAL call number: 410.9 P94

Feuk, U., S. Jakobson, and K. Norlen (1987). **Central haemodynamics and regional blood flows during thoracicepidural analgesia combined with positive pressure ventilation. An experimental study in the pig.** *Acta Anaesthesiolgica Scandinavica* 31: 479-486.

Fujino, H., R.P. Thompson, P.G. Germroth, M.E. Harold, M.M. Swindle, and P.C. Gillette. (1993). **Histological study of chronic catheter cryoablation of atrioventricular conduction in swine.** *American Heart Journal* 125(6): 1632-1637.

Fujino, H., R.P. Thompson, P.G. Germroth, M.M. Swindle, C.L. Case, and P.C. Gillette. (1991). **Histological comparison of cryothermia and radiofrequency catheter ablation in swine.** *Circulation* 84(4): II-514.

Gal, D. and J.M. Isner (1992). **Atherosclerotic Yucatan microswine as a model for novel cardiovascular interventions and imaging.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, p. 118-140.
NAL call number: RB125.S79 1992

Gaymes, C.H., M.M. Swindle, P.C. Gillette, M.E. Harold, and R.E Schumann (1995). **Percutaneous serial catheterization in swine: a practical approach.** *Journal of Investigative Surgery* 8(2): 123-128.

Gilbert, J.A., R.C. Cooper, H.A. Puryear, et al. (1998). **A swine model for the evaluation of efficacy of anti-microbial catheter coatings.** *Journal of Biomaterials Science, Polymer Edition* 9(9): 931-942.

Gilbert, M., M. Mori, and E. Myhre (1989). **Hemodynamic dose-responses to halothane and isoflurane are different in swine with and without critical coronary artery stenosis.** *Anesthesia and Analgesia* 68(6): 752-758.

Gilbert, M., S. Roberts, S.M. Mori, R. Blomberg, and J.H. Tinker (1988). **Comparative coronary vascular reactivity and hemodynamics during halothane and isoflurane anesthesia in swine.** *Anesthesiology* 68(2): 243-253.

Gillette, P.C., M.M. Swindle, R.P. Thompson, and C.L. Case (1991). **Transvenous cryoablation of the bundle of His.** *PACE* 14(4 Part 1): 504-510.

Greenberg, S., C. McGowan, and T.M. Glenn (1981). **Pulmonary vascular smooth muscle function in porcine splanchnic arterial occlusion shock.** *American Journal of Physiology* 241(1): H33-34.

Grifka, R.G., G.W. Vick III, M.P. O'Laughlin, T.J. Myers, W.R. Morrow, M.R. Nihill, D.L. Kearney, and C.E. Mullins. (1993). **Balloon-expandable intravascular stents: aortic implantation and later furthur dilation in growing mini-pigs.** *American Heart Journal* 126(4): 979-984.

Guglielmi, G., F. Vinuela, J. Dion, and G. Duckwiler (1991). **Electrothrombosis of saccular aneurysms via endovascular approach. Part 2: Preliminary clinical experience.** *Journal of Neurosurgery* 75(1): 8-14.

Hannon, J.P. (1992). **Hemorrhage and hemorrhagic shock in swine. A review.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 197-245.
NAL call number: RB125.S79 1992

Kaplan, D.K., N. Atsumi, M.N. D'Ambra, and G.J. Vlahakes (1995). **Distal circulatory support for thoracic aortic operations--effects on intracranial pressure.** *Annals of Thoracic Surgery* 59(2): 448-452.

Kelley, K.W., S.E. Curtis, G.T. Marzan, H.M. Karara, and C.R. Anderson (1973). **Body surface area of female swine.** *Journal of Animal Science* 36(5): 927-930.
NAL call number: 49 J82

Kreimeier, U., U.B. Brueckner, S. Gerspach, K. Veitinger, and K. Messmer, (1993). **A porcine model of hyperdynamic endotoxinemia: Patterns of respiratory, macrocirculatory, and regional blood flow changes.** *Journal of Investigative Surgery* 6: 143-156.

Kruse, K.R., J.J. Crowley, J.F. Tanguay, R.M. Santos, D.S. Millare, H.R. Phillips, J.P. Zidar, and R.S. Stack (April 1999). **Local drug delivery of argatroban from a polymeric-metallic composite stent reduces platelet deposition in a swine coronary model.** *Catheterization and Cardiovascular Interventions* 46(4): 503-507.

Lathers, C.M., N. Tumer, and J.M. Schoffstall (1989). **Plasma catecholamines, pH, and blood pressure during cardiac arrest in pigs.** *Resuscitation* 18: 59-74.

Levy, D.J., S.J. Westra, J. Sayre, and C. Kimme-Smith (May 1996) **Validation of volume flow measurements in blood vessels with quantitative color velocity imaging using a physiologic model of the circulation.** *Academic Radiology* 3(5): 383-388.

Lock, J.E., J.L. Bass, G. Lund, J.A. Rysavy, and R.V. Lucas, Jr. (1985). **Transcatheter closure of patent ductus arteriosus in piglets.** *American Journal of Cardiology* 55(6): 826-829.

Lock, J.E., T. Niemi, B.A. Burke, S. Einzig, and W. Castaneda-Zuniga (1982). **Transcutaneous angioplasty of experimental aortic coarctation.** *Circulation* 6(6): 1280-1286.

Lucke, J.N. and G.M. Hall (1976). **Determination of the cardiac output of anaesthetized pigs using a dye dilution method.** *Research in Veterinary Science* 21(3): 364-365.
NAL call number: 41.8 R312

Lund, G., J. Rysavy, A. Cragg, E. Salomonowitz, Z. Vlodaver, W.C. Zuniga, and K. Amplatz. (1984). **Long-term patency of the ductus arteriosus after ballon dilatation: an experimental study.** *Circulation* 69(4): 772-775.

Manohar, M. (1985). **Regional distribution of porcine brain blood flow during 50% nitrous oxide administration.** *American Journal of Veterinary Research* 46(4): 831-835.
NAL call number: 41.8 Am3A

Manohar, M. and C. Parks (1984). **Porcine regional brain and myocardial blood flows during halothane-0_2 and halothane-nitrous oxide anesthesia: Comparisons with equipotent isoflurane anesthesia.** *American Journal of Veterinary Research* 45(3): 465-473.
NAL call number: 41.8 Am3A

Massoud, T.F., F. Turjman, C. Ji, F. Vinuela, G. Guglielmi, Y.P. Gobin, and G.R. Duckwiller (1995). **Endovascular treatment of fusiform aneurysms with stents and coils: Technical feasibility in a swine model.** *American Journal of Neuroradiology* 16(10): 1953-1963.

Massoud, T.F., C. Ji, G. Guglielmi, F. Vinuela, and J. Robert (1994). **Experimental models of bifurcation and terminal aneurysms: construction techniques in swine.** *American Journal of Neuroradiology* 15(5): 938-944.

McKirnan, M.D., F.C. White, B.D. Guth, and C.M. Bloor (1986). **Exercise and hemodynamic studies in swine.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J. Mersmann (eds.), Vol. 2, pp. 105-120.
NAL call number: RC669 S87

Mehta, D., S.J. George, J.Y. Jeremy, M.B. Izzat, et al. (1998). **External stenting reduces long-term medial and neointimal thickening and platelet derived growth factor expression in a pig model of arteriovenous bypass grafting.** *Nature Medicine* 4(2): 235-239.

Mitchell, S.E., J.H. Anderson, M.M. Swindle, J.D. Strandberg, and J. Kan (1994). **Atrial septostomy: Stationary angioplasty balloon technique. Experimental work and preliminary clinical applications.** *Pediatric Cardiology* 15(1): 1-7.

Moffitt, E.A., J.W. Kirklin, and R.A. Theye (1962). **Physiologic studies during whole body perfusion in Tetralogy of Fallot.** *Journal of Thoracic and Cardiovascular Surgery*, 44(2): 180.

Moomey, C.B. Jr., S.M. Melton, M.A. Croce, et al. (Jan. 1999). **Prognostic value of blood lactate, base deficit, and oxygen-derived variables in an LD50 model of penetrating trauma.** *Critical Care Medicine* 27(1): 154-161.

Morrow, W.R., V.C. Smith, W.J. Ehler, A.F. Van Dellen, and C.E. Mullins (1994). **Balloon angioplasty with stent implantation in experimental coarctation of the aorta.** *Circulation* 89(6): 2677-2683.

Murphy, J.G., R.S. Schwartz, W.D. Edwards, A.R. Camrud, R.E. Vliestra, and D.R. Holmes Jr. (1992). **Percutaneous polymeric stents in porcine coronary arteries: Initial experience with polyethylene terephthalate stents.** *Circulation* 86(5): 1596-1604.

Nishijima, M.K., M.J. Breslow, C.F. Miller, and R.J. Traystman (1988). **Effect of naloxone and iluprofen on organ**

blood flow during endotoxic shock in pig. *American Journal of Physiology* 255(1, Part 2): H177-H184.

Oka, Y., N. Hasegawa, M. Nakayama, et al. (Feb. 1999). **Selective downregulation of neutrophils by a phosphatidic acid generation inhibitor in a porcine sepsis model.** *Journal of Surgical Research* 81(2): 147-155.

Pfenninger, E., A. Grunert, I. Bowdler, and J. Kilian (1985). **The effect of ketamine on intracranial pressure during haemorrhagic shock under the conditions of both spontaneous breathing and controlled ventilation.** *Acta Neurochirurgica Wien* 78: 113-118.

Priebe, H.J. (1989). **Isoflurane and coronary hemodynamics.** *Anesthesiology* 71(6): 960-976.

Rashkind, W.J., C.E. Mullins, W.E. Hellenbrand, and M.A. Tait (1987). **Nonsurgical closure of patent ductus arteriosus: clinical application of the Rashkind PDA occluder system.** *Circulation* 75(3): 583-592.

Rogers, G.P., D.M. Cromeens, S.T. Minor, and M.M. Swindle (1988). **Bretylium and diltiazem in porcine cardiac procedures.** *Journal of Investigative Surgery* 1(4): 321-326.

Rysavy, J.A., G.E. Lund, J.E. Lock, J.L. Bass, S.S. Einzig, and K. Amplatz (1986). **A method for nonsurgical creation of patent ductus arteriosus and its applications in piglets.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, pp. 351-361.
NAL call number: RB125.C68 1985

Schoffstall, J.M., W.H. Spivey, S. Davidheiser, L. Fuhs, and R. Kirkpatrick Jr. (1990). **Endogenous and exogenous plasma catecholamine levels in cardiac arrest in swine.** *Resuscitation* 19: 241-251.

Schumann, R.E., M. Harold, P.C. Gillette, M.M. Swindle, and C.H. Gaymes (1993). **Prophylactic treatment of swine with bretylium for experimental cardiac catheterization.** *Laboratory Animal Science* 43(3): 244-246.
NAL call number: 410.9 P94

Schumann, R.E., M.M. Swindle, B.J. Knick, C.L. Case, and P.C. Gillette (1994). **High dose narcotic anesthesia using sufentanil in swine for cardiac catheterization and electrophysiologic studies.** *Journal of Investigative Surgery* 7(3): 243-248.

Smith, A.C., F.G. Spinale, B.A. Carabello, and M.M. Swindle (1989). **Technical aspects of cardiac catheterization of swine.** *Journal of Investigative Surgery* 2(2): 187-194.

Smith, A.C., B. Knick, M.M. Swindle, and P.C. Gillette (1997). **A technique for conducting non-invasive cardiac electrophysiology studies in swine.** *Journal of Investigative Surgery* 10(1-2): 25-30.

Svendsen, P., and A.M. Carter (1989). **Blood gas tensions, acid-base status and cardiovascular function in miniature swine anaesthetized with halothane and methoxyflurane or intravenous metomidate hydrochloride.** *Pharmacology and Toxicology* 64(1): 88-93.

Syverud, S.A., S.C. Dronen, C.R. Chudnofsky, and P.F. van Ligten (1989). **A continuous hemorrhage model of fatal hemorrhagic shock in swine.** *Resuscitation* 17: 287-295.

Szebeni J., J.L. Fontana, N.M. Wassef, et. al. (May 1999). **Hemodynamic changes induced by liposomes and liposome-encapsulated hemoglobin in pigs: a model for pseudoallergic cardiopulmonary reactions to liposomes. Role of complement and inhibition by soluble CR1 and anti-C5a antibody.** *Circulation* 99(17): 2302-2309

Tranquilli, W.J., C.M. Parks, J.C. Thurmon, G.J. Benson, G.D. Koritz, M. Manohar, and M.C. Theodorakis (1982). **Organ blood flow and distribution of cardiac output in nonanesthetized swine.** *American Journal of Veterinary Research* 43(5): 895-897.
NAL call number: 41.8 Am3A

Truex, R.C., and M.Q. Smythe (1965). **Comparative morphology of the cardiac conduction tissue in animals.** *Annals of the New York Academy of Sciences* 127: 19-23.
NAL call number: 500 N484

Vacca, G., A. Battaglia, E. Grossini, D.A. Mary, C. Molinari, and N. Surico (Feb. 1999). **The effect of 17beta-oestradiol on regional blood flow in anaesthetized pigs.** *Journal of Physiology* 514(Part 3): 875-884.

Vacca, G., D.A. Mary, and P. Vono (1994). **The effect of distension of the stomach on coronary blood flow in anaesthetized pigs.** *Pflugers Archives* 428: 127-133.

Wachtel, T.L., G.R. McCahan Jr., W.I. Watson, and M. Gorman (1972). **Determining the surface areas of miniature swine and domestic swine by geonetric design. A comparative study.** *USAARL Report 73-5*, Ft. Rucker, AL.

White, C.J., S.R. Ramee, A.K. Banks, D. Wiktor, and H.L. Price (1992). **The Yucatan miniature swine: An atherogenic model to assess the early potency rates of an endovascular stent.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 156-162.
NAL call number: RB125.S79 1992

HUSBANDRY

Allen, T. (March 1994). **Housing, husbandry, and welfare of swine: January 1991-January 1995.** *Quick Bibliography Series (94-14)*, Beltsville, MD: National Agricultural Library. Available at http://www.nal.usda.gov/awic/pubs/oldbib/qb9506.htm
NAL call number: aZ5071.N3 no.94-14

Bergeron, R., H.W. Gonyou, and T.E. Eurell (Sept. 1996). **Behavioral and physiological responses of Meishan, Yorkshire and crossbred gilts to conventional and turn-around gestation stalls.** *Canadian Journal of Animal Science* 76(3): 289-297.
NAL call number: 41.8 C163

Bollen, P.J., A.K. Hansen, and H.J. Rasmussen (2000). **Husbandry.** In: *The Laboratory Swine*, Boca Raton, FL: CRC Press LLC, pp. 17-34, ISBN: 0849310350.

Dopson, D.C. (Dec. 1993) **Laboratory swine: principles of husbandry and research.** *Animal Technology* 44(3): 175-200.
NAL call number: QL55 I5

Fisher, T.F. (1993). **Miniature swine in biomedical research: Applications and husbandry considerations.** *Lab Animal* 22(5): 47-50.
NAL call number: QL55.A1L33

Geverink, N.A., R.H. Bradshaw, E. Lambooij, V.M. Wiegant, and D.M. Broom (Aug. 1998). **Effects of simulated lairage conditions on the physiology and behaviour of pigs.** *Veterinary Record* 143(9): 241-244.

Hemsworth, P.H., J.L. Barnett, and R.G. Campbell (1996). **A study of the relative aversiveness of a new daily injection procedure for pigs.** *Applied Animal Behaviour Science* 49(4): 389-401.
NAL call number: QL750 A6

Holz, W. and P. Bollen (1999). **Pigs and minipigs.** In: *The UFAW Handbook on the Care and Management of Laboratory Animals*, T.B. Poole (ed.), 7th ed., Vol. 1, Oxford: Blackwell Scientific, Chapter 29, ISBN: 0632051337.

Houpt, T.R. (1986). **The handling of swine in research.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J.

Mersmann (eds.), Vol. 1, Boca Raton, FL: CRC Press, pp. 25-38.
NAL call number: RC669 S87

McGlone, J.J., R.I. Nicholson, J.M. Hellman, and D.N. Herzog (1993). **The development of pain in young pigs associated with castration and attempts to prevent castration-induced behavioral changes.** *Journal of Animal Science* 71: 1441-1446.
NAL call number: 49 J82

National Research Council (1998). ***The Nutrient Requirements of Swine***, 10th ed., Washington DC: National Academy Press, 189p.
NAL call number: SF396.5 N87 1998

Olsson, I.A.S., F.H. de Jonge, T. Schuurman, and F.A. Helmond (July 1999). **Poor rearing conditions and social stress in pigs: Repeated social challenge and the effect on behavioural and physiological responses to stressors.** *Behavioural Processes* 46(3): 201-215.
NAL call number: QL750 B4

Panepinto, L.M., R.W. Phillips, S.W. Norden, P.C. Pryor and R. Cox (1983). **A comfortable minimum stress method of restraint for Yucatan miniature swine.** *Laboratory Animal Science* 33(1): 95-97.
NAL call number: 410.9 P94

Panepinto, L.M. (1986). **Character and management of miniature swine.** In: *Swine in Cardiovascular Research*, H.C. Stanton and J.H. Mersmann (ed.), Vol. 1, Boca Raton, FL: CRC Press, pp. 11-24.
NAL call number: RC669 S87

Pedersen, V., J.L. Barnett, P.H. Hemsworth, E.A. Newman, and B. Schirmer (1998). **The effects of handling on behavioural and physiological responses to housing in tether-stalls among pregnant pigs.** *Animal Welfare* 7(2): 137-150.
NAL call number: HV4701 A557

Reeds, P.J. et al (1987). **Growth, development and nutrient metabolism in piglets and infants.** In: *Manipulating Pig Production VII*, proceedings of the seventh Biennial Conference of the Australasian Pig Science Association (APSA), Adelaide, South Australia, pp. 1-32.
NAL call number: SF391.3 A97 1999

Saffron, J. and J.C. Gonder (1997). **The SPF Pig in Research.** *ILAR Journal* 38(1): 28-31.
NAL call number: QL55.A1I43

Swindle, M.M. (1993). **Minipigs as pets.** *Proceedings of the North American Veterinary Conference*, pp. 648-649.

Swindle, M.M., A.C. Smith, K. Laber-Laird, and L. Dungan (1994). **Swine in biomedical research: management and models.** *ILAR News* 36(1): 1-5.
NAL call number: QL55.A1I43

White, R.G., J.A. DeShazer, C.J. Tressler, G.M. Borcher, S. Davey, A. Waninge, A.M. Parkhurst, M.J. Milanuk, and E.T. Clemens (Feb. 1995). **Vocalization and physiological response of pigs during castration with or without a local anesthetic.** *Journal of Animal Science* 73(2): 381-386.
NAL call number: 49 J82

IMMUNOLOGY

Binns, R.M. and R. Pabst (1996). **The functional structure of the pig's immune system, resting and activated.** In:

Advances in Swine in Biomedical Research, M.E. Tumbleson and L.B. Schook (eds.), Vol. 1, NY: Plenum Press, pp. 253-266.
NAL call number: RB125.A36 1996

Boeker, M., R. Pabst, and H.J. Rothkotter (1999). **Quantification of b, T and null lymphocyte subpopulatians in the blood and lymphoid organs of the pig.** *Immunobiology* 201(1): 74-87.

Celik, I., W. Lorenz, B. Stinner, et al. (1998). **Clinic modelling randomised trials (CMRT's) in animals as a new intermediate between biological experiments and randomised clinical trials: Application to antihistamine prophylaxis in anaesthesia and surgery.** *Inflammation Research* 47(Suppl. 1): S66-S68.

Dal Canto, A.J. and H.W. Virgin (1999). **Animal models of infection-mediated vasculitis.** *Current Opinion in Rheumatology* 11(1): 17-23.

Dei-Cas, E., M. Brun-Pascaud, V. Bille-Hansen, A. Allaert, and E.M. Aliouat (1998). **Animal models of pneumocystosis.** *FEMS Immunology and Medical Microbiology* 22(1-2): 163-168.

Dungan, L.J., D.B. Wiest, D.A. Fyfe, A.C. Smith, and M.M. Swindle (1995). **Hematology, serology and serum protein electrophoresis in fetal miniature Yucatan swine: normal data.** *Laboratory Animal Science* 45(3): 285-289.
NAL call number: 410.9 P94

Lee, A. (1998). **Animal models for host-pathogen interaction studies.** *British Medical Bulletin* 54(1): 163-173.

Lunney, J.K., (ed.). (1994). **Special Issue: Porcine Immunology.** *Veterinary Immunology and Immunopathology* 43: 1-333.
NAL call number: SF757.2.V38

Mitchell, H.W., D.J. Turner, P.R. Gray, and P.K. McFawn (March 1999). **Compliance and stability of the bronchial wall in a model of allergen-induced lung inflammation.** *Journal of Applied Physiology* 86(3): 932-937.

Mohr, M., U. Hopken, M. Oppermann, C. Mathes, et al. (March 1998). **Effects of anti-C5a monoclonal antibodies on oxygen use in a porcine model of severe sepsis.** *European Journal of Clinical Investigation* 28(3): 227-234.

Nguyen, N.T., J.D. Lukerich, S. Schatz, et al. (1999). **Effect of open and laparoscopic surgery on cellular immunity in a swine model.** *Surgical Laparoscopy and Endoscopy* 9(3): 176-180.

Pescovitz, M.D, Pabst, R., Rothkotter, H.J., et al. (1998). **Immunology of the pig.** In: *Handbook of Vertebrate Immunology*, Pastoret, P.-P, Griebel, P., Bazin, H., and Govaerts, A. (eds.), San Diego: Academic Press, pp. 373-419.
NAL call number: QR181.H277 1998

Saamueller, A. (1996). **Characterization of swine leukocyte differentiation antigens.** *Immunology Today* 17(8): 352-354.

Saamueller, A. and J.K. Lunney (eds.). (1998). **Swine leukocyte differentiation (CD) antigens.** *Second International Workshop on Swine Leukocyte Differentiation Antigens. Special Issue: Veterinary Immunology and Immunopathology* 60: 205-446.
NAL call number: SF757.2.V38

Sachs, D.H. (1992). **MHC-homozygous miniature swine.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 3-15.
NAL call number: RB125.S79 1992

San Mateo, L.R., K.L. Toffer, P.E. Orndorff, and T.H. Kawula (Sept. 1999). **Immune cells are required for cutaneous ulceration in a swine model of chancroid.** *Infection and Immunity* 67(9): 4963-4967.

San Mateo, L.R., K.L.Toffer, P.E. Orndorff, and T.H. Kawula (Oct. 1999). **Neutropenia restores virulence to an attenuated Cu,Zn superoxide dismutase-deficient Haemophilus ducreyi strain in the swine model of chancroid.** *Infection and Immunity* 67(10): 5345-5351.

Smith, T.P.L. and C.W. Beattie (1996). **Identifying tumor initiator/suppressor and penetrance associated genes by gene mapping.** In: *Advances in Swine in Biomedical Research*, M.E. Tumbleson and L.B. Schook (eds.), Vol. 1, NY: Plenum Press, pp. 239-249.
NAL call number: RB125.A36 1996

Snowden, K.F., E.S. Didier, J.M. Orenstein, and J.A. Shadduck (1998). **Animal models of human microsporidial infections.** *Laboratory Animal Science* 48(6): 589-592.

Solano-Aguilar, G.I., Vengroski, K., Beshah, E., and J.K. Lunney (2000). **Isolation and purification of lymphocyte subsets from gut associated lymphoid tissue in neonatal swine.** *Journal of Immunological Methods* 241: 185-199.
NAL call number: QR180.J6

Szebeni, J., J.L. Fontana, N.M. Wassef, P.D. Mongan, et al. (1999). **Hemodynamic changes induced by liposomes and liposome-encapsulated hemoglobin in pigs: A model for pseudoallergic cardiopulmonary reactions to liposomes: Role of complement and inhibition by soluble CR1 and anti-C5a antibody.** *Circulation* 99(17): 2302-2309.

To, T.L., L.A. Ward, L.Yuan, and L.J. Saif (Nov. 1998). **Serum and intestinal isotype antibody responses and correlates of protective immunity to human rotavirus in a gnotobiotic pig model of disease.** *Journal of General Virology* 79(Part 11): 2661-2672.

Trebichavsky, I., J. Schulze, V. Dlabac, B. Cukrowska, H. Tlaskalova-Hogenova, and Z. Rehakova (1998). **Salmonellosis: lessons drawn from a germ-free pig model.** *Folia Microbiologica* 43(6): 697-701.

Van Reeth, K., H. Nauwynck, M. Pensaert (April 1998). **Bronchoalveolar interferon-alpha, tumor necrosis factor-alpha, interleukin-1, and inflammation during acute influenza in pigs: a possible model for humans?** *Journal of Infectious Diseases* 177(4): 1076-1079.

KIDNEY and UROLOGY

Anidjar, M., Mongiat-Artus P., Brouland J.P., et al. (Jan. 1999.) **Thermal radiofrequency induced porcine ureteral stricture: a convenient endourologic model.** *Urology* 161(1): 298-303.

Chiu, A.W., M.T. Chen, W.J. Huang, S.T. Young, C. Cheng, S.W. Huang, C.L. Chu, and L.S. Chang (1992). **Laparscopic nephrectomy in a porcine model.** *European Urology* 22(3): 250-254.

Constantinou, C.E., J.C. Djurhuus, L. Vercesi, A.J. Ford, and J.D. Meindl (1986). **Model for chronic obstruction and hydronephrosis.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 3, pp. 1711-1724.
NAL call number: RB125.C68 1985

Djurhuus, J.C., B. Nerstrom, N. Gyrd-Hansen, and H. Rask-Anderson (1976). **Experimental hydronephrosis.** *Acta Chirurgica Scandinavica* (Supplementum) 472: 17-28.

Hodson, C.J. (1986). **The pig as a model for studying kidney disease in man.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 3, NY: Plenum Publishers, pp. 1691-1704.
NAL call number: RB125.C68 1985

Howard, T., C.A. Cosenza, D.V. Cramer, and L. Makowka (1994). **Kidney transplantation in Yucatan miniature**

swine. In: *Handbook of Animal Models in Transplantation Research*, D.V. Cramer, L. Podesta, and L. Makowka (eds.), Boca Raton: CRC Press, pp. 19-28.
NAL call number: RD120.7 H36 1994

Jorgensen, T.M., J.C. Djurhuus, H.S. Jorgensen, and S.S. Sorensen (1983). **Experimental bladder hyperreflexia in pigs.** *Urological Research* 11(5): 239-240.

Jorgensen, T.M. and J.C. Djurhuus (1986). **Experimental vesicoureteric reflux in pigs.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol 3, NY: Plenum Press, pp. 1737-1751.
NAL call number: RB125.C68 1985

Jorgensen, T.M., S. Olsen, J.C. Djurhuus, and J.P. Norgaard (1984). **Renal morphology in experimental vesicoureteral reflux in pigs.** *Scandinavian Journal of Urological Nephrology* 18(1): 49-58.

Jorgensen, T.M., J. Mortensen, K. Nielsen, and J.C. Djurhuus (1984). **Pathogenetic factors in vesico-ureteral reflux. A longitudinal cystometrographic study in pigs.** *Scandinavian Journal of Urological Nephrology* 18(1): 43-48.

Kirkman, R.I., R.B. Colvin, M.W. Flye, G.S. Leight, S.A. Rosenberg, and G.M. Williams. (1979). **transplantation in miniature swine: VI. Factors influencing survival of renal allografts.** *Transplantation* 28(1): 18-23.

Melick, W.F., J.J. Naryka, and J.H. Schmidt (1961). **Experimental studies of ureteral peristaltic patterns in the pig. Similarity of pig and human ureter and bladder physiology.** *Journal of Urology* 85(1): 145-148.

Merkle, E.M., M. Hashim, M. Wendt, and J.S. Lewin (May 1999). **MR-guided percutaneous nephrostomy of the nondilated upper urinary tract in a porcine model.** *AJR American Journal of Roentgenology* 172(5): 1221-1225.

O'Hagan, K.P. and E.J. Zambraski (1986). **Kidney function in deoxycorticosterone acetate (DOCA) treated hypertensive Yucatan miniature swine.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol 3, NY: Press, pp. 1779-1787.
NAL call number: RB125.C68 1985

Pennington, L.R. (1992). **Renal transplantation in swine.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 35-43.
NAL call number: RB125.S79 1992

Reddy, P.P., D.J. Barrieras, K.A. Woodhouse, et al. (April 1999). **A bioprosthetic bladder acellular matrix allograft: Evaluation of large segment (greater than 24 cm2) substitution in a porcine model.** *Journal of Urology* 161(4, Suppl.): 65.

Russell, J.M., R.T. Webb, and W.H. Boyce (1981). **Intrarenal surgery. Animal model I.** *Investigative Urology* 19(2): 123-125.

Schenkman, N.S., J. Costa, D.A. Belote, and M.L. Stoller (March 1999). **Gastropyeloplasty: a swine model.** *Urology* 53(3): 647-652.

Swindle, M.M. (1998). **Urinary system and adrenal glands.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 127-138.
NAL call number: RD29.5.S94S944 1998

Swindle, M.M., and J. Olson (1988). **Urogenital system.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 42-73.
NAL call number: RB125 E9

Terris, J.M. (1986). **Swine as a model in renal physiology and nephrology: An overview.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 2, pp. 1673-1690.

NAL call number: RB125.C68 1985

Tscholl, R. (1978). **Urinary diversion.** *Urological Research* 6(1): 59-63.

Webster, S.K., M.A. Deleo, and K.E. Burhop (1992). **The anephric micropig as a model for peritoneal dialysis.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 64-73.
NAL call number: RB125.S79 1992

Williams, G.M. (1988). **Renal transplantation.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 298-299.
NAL call number: RB125 E9

Zambraski, E.J., G.D. Thomas, and K.P O'Hagan (1992). **DOCA-Treated Yucatan miniature swine: A neurogenic model of essential hypertension.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 290-301.
NAL call number: RB125.S79 1992

LIVER

Bathe, O.F., B. Rudston-Brown, A.W. Chow, and P.T. Phang (Oct. 1998). **Liver as a focus of impaired oxygenation and cytokine production in a porcine model of endotoxicosis.** *Critical Care Medicine* 26(10): 1698-1706.

Calne, R.Y., H.J.O. White, and D.E. Yoffa (1967). **Observations of orthotopic liver transplantation in the pig.** *British Medical Journal,* 2(1): 478.

Camprodon, R., J. Solsona, J.A. Guerrero, C.G. Mendoza, J. Segura, and J.M. Fabregat. (1977). **Intrahepatic vascular division in the pig: basis for partial hepatectomies.** *Archives of Surgery* 112(1K0): 38-40.

Carew, T.E., R.P. Saik, K.H. Johansen, C.A. Dennis, and D. Steinberg (1976). **Low density and high density lipoprotein turnover following portocaval shunt in swine.** *Journal of Lipid Research* 17(5): 441-450.

Collins, B.H., R.S. Chari, J.C. Maggee, R.C. Harland, B.J. Lindman, J.S. Logan, R.R. Bollinger, W.C. Meyers, and J.L. Platt (1994). **Mechanisms of injury in porcine livers perfused with blood of patients with fulminant hepatic failure.** *Transplantation* 58(11): 1162-1171.

Doursout, M.F., Davis, K.L., Hartley, C.J., et al. (April 1999). **Porcine model.** *FASEB Journal* 13(4, Part 1): A132.

Drougas, J.G., S.E. Barnard, J.K. Wright, M. Sika, R.R. Lopez, K.A. Stokes, P.E. Williams, and C.W. Pinson (1996). **A model for the extended studies of hepatic hemodynamics and metabolism in swine.** *Laboratory Animal Science* 46(6): 648-655.
NAL call number: 410.9 P94

Dudgeon, D.L., T.R. Gadacz, H.E. Gladen, K.D. Lillemoe, and M.M. Swindle (1988). **Alimentary tract and liver.** In: *Experimental Surgery and Physiology: Induced Animal of Human Disease*, M.M. Swindle and R.J. Adams, (eds.), Baltimore, MD: Williams and Wilkins, pp. 217-257.
NAL call number: RB125 E9

Eisele, P.H., E.S. Woodle, G.C. Hunter, L. Talken, and R.E. Ward (1986). **Anesthetic, preoperative and postoperative considerations for liver transplantation in swine.** *Laboratory Animal Science* 36(4): 402-405.
NAL call number: 410.9 P94

Flye, M.W. (1992). **Orthotopic liver transplantation in outbread and partially inbred swine.** In: *Swine as Models in*

Biomedical Research, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 44-56.
NAL call number: RB125.S79 1992

Gadacz, T.R. (1988). **Portal hypertension.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltlimore: Williams and Wilkins, p. 250-253.
NAL call number: RB125 E9

Griffith, S.L., B.T. Burney, F.J. Fry, and T.D. Franklin Jr. (1989). **A large animal model (swine) to study the diagnosis and treatment of cholelithiasis.** *Investigative Radiology* 24(2): 110-114.

Hand, M.S., R.W. Phillips, C.W. Miller, R.A. Mason, and W.V. Lumb (1981). **A method for quantitation of hepatic, pancreatic and intestinal function in conscious Yucatan miniature swine.** *Laboratory Animal Science* 31: 728-731.
NAL call number: 410.9 P94

Hansen, E.F., C. Strandberg, L., Hojgaard, J. Madsen, J.H. Henriksen, T.V. Schroeder, U. Becker, and F. Bendtsen (1999). **Splanchnic haemodynamics after intravenous terlipressin in anaesthetised healthy pigs.** *Journal of Hepatology* 30(3): 503-510.

Hickman, R., W.A. van Hoorn, and J. Terblanche (1971). **Exchange transplantation of the liver in the pig.** *Transplantation* 24: 237.

Kahn, D., R. Hickman, H. Pienaar, et al. (1994). **Liver transplantation in the pig.** In: *Handbook of Animal Models in Transplantation Research*, D.V. Cramer, L. Podesta, and L. Makowka (eds.), Boca Raton, FL: CRC Press, pp. 75-86.
NAL call number: RD120.7 H36 1994

Ledezma, G.A., A. Folch, S.N. Bhatia, U.J. Balis, M.L.Yarmush., and M. Toner (Feb. 1999). **Numerical model of fluid flow and oxygen transport in a radial-flow microchannel containing hepatocytes.** *Journal of Biomechanical Engeering* 121(1):58-64.

Lee, F.T. Jr., S.G. Chosy, P.J. Littrup, W.T. Farner, J.E. Kuhlman, and D.M. Mahvi (June 1999). **CT-monitored percutaneous cryoablation in a pig liver model: pilot study.** *Radiology* 211(3): 687-692.

Mizrahi, S.S., J.W. Jones, and F.R. Bentley (1996). **A facilitated technique for hepatectomy of porcine liver.** *Journal of Investigative Surgery* 9(4): 393-398.

Oldhafer, K.J., J. Hauss, G. Gubernatis, R. Pichlmayr and H.U. Spiegel (1993). **Liver transplantation in pigs: A model for studying reperfusion injury.** *Journal of Investigative Surgery* 6(5): 439-450.

Pennington, L. and M.G. Sarr (1988). **Liver transplantation.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 294-295.
NAL call number: RB125 E9

Pohlein, C., A. Pascher, P. Bauman, D. Abendroth, M. Jochum, D.J. White, and C. Hammer. (1996). **Transgenic porcine livers reduce liberation of humoral mediators during xenoperfusion with human blood.** *Transplantation Proceedings* 28(2): 772-774.

Procaccini, E., R. Ruggiero, R. Rea, G. Boccia, G. Varletta, and C. Saccone (1994). **Segmental liver transplantation. Experimental studies in swine.** *Annali Italiani Di Chirurgia* 65(1): 125-129.

Skaanild, M.T. and C. Friis (1997). **Characterization of the P450 system in Gottingen minipigs.** *Pharmacology and Toxicology* 80(Suppl. II): 28-33.

Stump, K.C., L.R. Pennington, J.F. Burdick, T. Hoshino, and M.M. Swindle (1986). **Practical anesthesia for orthotopic liver transplantation in swine.** In: *Proceedings of the 2nd annual meeting of the Academy of Surgical*

Research, D.L. Powers (ed.), Clemson, SC: Clemson University Press, pp. 10-12.

Sun Li, K.H., Chow Pierce, M.C., Fook-Chong, Stephanie, et al. (March, 1999). **Liver regeneration after partial hepatectomy is non-uniform: Flow cytometric bromodeoxyuridine incorporation and cell cycle studies in a porcine model.** *Research in Experimental Medicine* 198(5): 229-236.

Swindle, M.M. (1998). **Liver and biliary system.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 105-118.
NAL call number: RD29.5.S94S944 1998

Terblanche, J., J.H. Peacock, K.E. Hobbs, A.C. Hunt, J. Bowes, and E.J. Tierris (1967). **Orthotopic liver homotransplantation: experimental study in the unmodified pig.** *South African Medical Journal* 42(20): 486-497.

MALIGNANT HYPERTHERMIA

Anderson, I.L. (1976). **Porcine malignant hyperthermia: effect of dantrolene sodium on in-vitro halothane-induced contracture of susceptible muscle.** *Anesthesiology* 44(1): 57-60.

Britt, B. A., W. Kalow, and Endrenyel (1978). **Malignant hyperthermia pattern of inheritance in swine.** In: *Second International Symposium on Malignant Hyperthermia*, J.A. Aldrete and B.A. Britt, (eds.), New York, NY, Grune and Stratton, pp. 195-211.
NAL call number: RD82.7 M3I57 1977

Dershwitz, M., F.A. Sreter, and J.F. Ryan (1989). **Ketamine does not trigger malignant hyperthermia in susceptible swine.** *Anesthesia and Analgesia* 69: 501-503.

Ehler, W.J., J.W. Mack, D.L. Brown, and R.F. David (1985). **Avoidance of malignant hyperthermia in a porcine model for experimental open heart surgery.** *Laboratory Animal Science* 35(2): 172-175.
NAL call number: 410.9 P94

Endo, M. (1977). **Calcium release from the sarcoplasmic reticulum.** *Physiological Reviews* 57(1): 71-108.

Fay, R., and E. Gallant (1990). **Halothane sensitivity of young pigs in vivo and in vitro.** *American Physiological Society* R133-R138.

Flewellen, E.H. and T.E. Nelson (1982). **Masseter spasm induced succinylcholine in children: Contracture testing for malignant hyperthermia: Report of six cases.** *Canadian Anaesthetists Society Journal* 29(1): 42-48.

Foster, P.S., K.C. Hopkinson and M.A. Denborough (1992). **Propofol anaesthesia in malignant hyperpyrexia susceptible swine.** *Clinical and Experimental Pharmacology and Physiology* 19(3): 183-186.

Fujii, J., K. Otsu, F. Zorzato, S. deLeon, V.K. Khanna, J.E. Weiler, P.J. O'Brien, and D.H. MacLennan (1991). **Identification of a mutation in porcine ryanodine receptor associated with malignant hyperthermia.** *Science* 253(5018): 448-451.

Geers, R., C. Decanniere, H. Ville, P. Van Hecke, V. Goedseels, L. Bosschaerts, J. Deley, S. Janssens, and W. Nierynck (1992). **Identification of halothane gene carriers by use of in vivo 31P nuclear magnetic resonance spectroscopy in pigs.** *American Journal of Veterinary Research* 53(9): 1711-1714.
NAL call number: 41.8 Am3A

Gronert, G.A. (1980). **Malignant hyperthermia.** *Anesthesiology* 53(5): 395-423.

Gronert, G. A., J.A. Milde, and P.A. Theye (1976). **Dantrolene in porcine malignant hyperthermia.** *Anesthesiology* 44(6): 488-495.

Hall, G. M., J.N. Lucke, and D. Lister (1976). **Porcine malignant hyperthermia IV: Neuromuscular blockade.** *British Journal of Anaesthesia* 48(12): 1135-1141.

Harrison, G.G., R.A. Dyer, R.L. Llewellyn, and M.F.M. James (Feb. 1999). **Eltanolone(5-beta-pregnanolone) does not trigger, and attenuates halothane triggering of, malignant hyperthermia in malignant hyperthermia susceptible swine.** *Pharmacological Research* 39(2): 103-106.

Houde, A., S.A. Pomnier, and R. Roy (1993). **Detection of the ryanodine receptor mutation associated with malignant hyperthermia in purebred swine populations.** *Journal of Animal Science* 71(6): 1414-1418.
NAL call number: 49 J82

Iaizzo, P., M. Seewald, R. Olsen, D.L. Wedel, D.E. Chapman, M. Berggren, H.M. Eichinger, and G. Powis (1991). **Enhanced mobilization of intracellular Ca^{2+} induced by halothane in hepatocytes isolated from swine susceptible to malignant hyperthermia.** *Anesthesiology* 74(3): 531-538.

Kaplan, R.F. (1991). **Malignant hyperthermia.** *ASA, 1991 Annual Refresher Course Lectures*, San Francisco, California, no. 231, pp. 1-7.

Kumar, M.V.S., R.J. Carr, V. Komanduri, R.F. Reardon, D.S. Beebe, P.A. Iaizzo, and K.G. Belani (1999). **Differential diagnosis of thyroid crisis and malignant hyperthermia in an anesthetized porcine model.** *Endocrine Research* 25(1): 87-103.

Littleford, J.A., L.R. Patel, D. Bose, C.B. Cameron and C. McKillop (1991). **Masseter muscle spasm in children implications of continuing the triggering anesthetic.** *Anesthesia and Analgesia* 72(2): 151-160.

Lopez, J. R., P.D. Allen, D. Jones, and F.R. Sreter (1988). **Myoplasmic free [Ca++] during a malignant hyperthermia episode in swine.** *Muscle and Nerve* 11(1): 82-88.

Louis, C.F. (Sep. 1990). **Malignant hyperthermia and porcine stress syndrome: a tale of two species.** *Pig News and Information* 11(3): 341-343.
NAL call number: SF391 P55

McGrath, C.J., W.E. Rempel, C.R. Jessen, P.B. Addis, and A.J. Crimi (1981). **Malignant hyperthermia-triggering liability of selected inhalant anesthetics in swine.** *American Journal of Veterinary Research* 42(4): 604-607.
NAL call number: 41.8 Am3A

Mickelson, J., E. Gallant, W. Rempel, K.M. Johnson, L.A. Litterer, B.A. Jacobson, and C.F. Louis (1989). **Effects of the halothane-sensitivity gene on sarcoplasmic reticulum function.** *American Journal of Physiology* 257(4, Part 1): C787-794.

Mickelson, J.R., E.M. Gallant, L.A. Litterer, K.M. Johnson, W.E. Rempel, and C.F. Louis. (1988). **Abnormal sarcoplasmic reticulum ryanodine receptor in malignant hyperthermia.** *Journal of Biological Chemistry* 263(19): 9310-9315.

Otsu, K. (Nov. 1991). **Cosegregation of porcine malignant hyperthermia and a probable causal mutation in the skeletal muscle ryanodine receptor gene in backcross families.** *Genomics* 11(3): 744-750.
NAL call number: QH445.2 G45

Putney, J. W. Jr. (1979). **Stimulus-permeability coupling: role of calcium in the receptor regulation of membrane permeability.** *Pharmacological Reviews* 30(2): 209-245.

Raff, M. and G. Harrison (1989). **The screening of propofol in MHS swine.** *Anesthesia and Analgesia* 68(6): 750-751.

Schneider, R. and D. Mitchell (1976). **Dantrolene hepatitis.** *Journal of the American Medical Association* 235(15):1590-1601.

Shailesh Kumar, M.V., R.J. Carr, V. Komanduri, R.F. Reardon, D.S. Beebe, P.A. Iaizzo, and K.G. Belani (Feb. 1999). **Differential diagnosis of thyroid crisis and malignant hyperthermia in an anesthetized porcine model.** *Endocrine Research* 25(1): 87-103.

Short, C.E., R.R. Paddleford, C.J. McGrath, and C.H. Williams (1976). **Preanesthetic evaluation and management of malignant hyperthermia in the pig experimental model.** *Anesthesia and Analgesia* 55(5): 643-653.

Wedel, D., P. Iaizzo, and J. Milde (1991). **Desflurane is a trigger of malignant hyperthermia in susceptible swine.** *Anesthesiology* 74(3): 508-512.

MUSCULOSKELETAL

Adams, R.J. (1988). **Musculoskeletal system.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 10-41.
NAL call number: RB125 E9

Allan, D.G., G.G. Russell, M.J. Moreau, V.J. Raso, and D. Budney (1990). **Vertebral end plate failure in porcine and bovine models of spinal fracture instrumentation.** *Journal of Orthopedic Research* 8(1): 154-156.

Alitalo, I. (1979). **Ventral interbody implantation for fusion of the lumbar spine using polytetrafluoroethylene-carbonfiber and porous high density polyethylene: An experimental study in growing pigs.** *Acta Veterinaria Scandinavica* 71(Suppl.): 1-58.
NAL call number: 41.8 AC87

Bermejo, A., O. Gonzalez, and J.M. Gonzalez (1993). **The pig as an animal model for experimentation on the temporomandibular articular complex.** *Oral Surgery, Oral Medicine, and Oral Pathology* 75(1): 18-23.

Bobilya, D.J., M.G. Maurizi, T.L. Veum, and W.C. Allen (1991). **A bone biopsy procedure for neonatal pigs.** *Laboratory Animals* 25(3): 222-225.
NAL call number: QL55.A1L3

Boyce, R.W., D.C. Ebert, T.A. Youngs, C.L. Paddock, L. Mosekilde, M.L. Stevens, and H.J.G. Gundersen (1995). **Unbiased estimation of vertebral trabecular connectivity in calcium restricted ovariectomized minipigs.** *Bone* 16(6): 637-642.

Bradley, P.F. (1982). **A two-stage procedure for reimplantation of autogenous freeze-treated mandibular bone.** *Journal of Oral and Maxillofacial Surgery* 40(5): 278-284.

Buser, D., R.K. Schenk, S. Steinemann, J.P. Fiorellini, C.H. Fox, and H. Stich (1991). **Influence of surface characteristics on bone integration of titanium implants. A histomorphometric study in miniature pigs.** *Journal of Biomedical Materials Research* 25(7): 889-902.

Davies, A.S. and M. Henning (1986). **Use of swine as a model of musculoskeletal growth in animals.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 2, NY: Plenum Publishers, pp. 839-848.
NAL call number: RB125.C68 1985

Donovan, M.G., N.C. Dickerson, J.W. Hellstein, and L.J. Hanson (1993). **Autologous calvarial and iliac onlay bone grafts in miniature swine.** *Journal of Oral and Maxillofacial Surgery* 51(8): 898-903.

Gur, E., A. Chiodo, C.Y. Pang, et. al. (April 1999). **The vascularized pig fibula bone flap model: effects of multiple segmental osteotomies on growth and viability.** *Plastic and Reconstructive Surgery* 103(5): 1436-42.

Habtemariam, A., J. Virri, M. Gronblad, S. Holm, A. Kaigle, and E. Karaharju (March 1998). **Inflammatory cells in full-thickness anulus injury in pigs. An experimental disc herniation animal model.** *Spine* 23(5): 524-529.

Komai, H. and A.J. Lokuta (March 1999). **Interaction of bupivacaine and tetracaine with the sarcoplasmic reticulum Ca2+ release channel of skeletal and cardiac muscles.** *Anesthesiology* 90(3): 835-843.

MacEwen, G.D. (1973). **Experimental scoliosis.** *Clinical Orthopaedics and Related Research* 93: 69-74.

McGraft, M.H. and S.C. Hundahl (1982). **The spatial and temporal quantification of myofibroblasts.** *Plastic and Reconstructive Surgery* 69:975-983.

Moller, K.O., H. Wethling, H.H.Abel, B.M.Lind, K.Karcher, and U. Schramm (April 1999). **Studies on an immunologically induced synovitis model in pigs and sheep.** *Clincal Orthopaedics* 361: 228-236.

Ouhayoun, J.P., A.H.M. Shabana, S. Issahakian, J.L. Patat, G. Guillemin, M.H. Sawaf, and N. Forest (1992). **Histological evaluation of natural coral skeleton as a grafting material in miniature swine mandible.** *Journal of Materials Science: Materials in Medicine* 3(3): 222-228.

Peh, W.C., J.H. Chan, T.W. Shek, and J.W. Wong (Feb. 1999). **The effect of using shorter echo times in MR imaging of knee menisci: a study using a porcine model.** *AJR American Journal of Roentgenology* 172(2): 485-488.

Peltonen, J., I. Alitalo, E. Karaharju, and H. Helio (1984). **Distraction of the growth plate. Experiments in pigs and sheep.** *Acta Orthopaedica Scandinavica* 55(3): 359-362.

Robinson, I.B. and B.G. Sarnat (1955). **Growth pattern of the pig mandible.** *American Journal of Anatomy* 96(41):37-64.

Rosenquist, J.B., K. Rosenquist, and G. Sund (1982). **Effects of bone grafing on maxillary bone healing in the growing pig.** *Journal of Oral and Maxillofacial Surgery* 40(9): 566-569.

Roth, T.E., J.S. Goldberg, and R.G. Behrents (1984). **Synovial fluid pressure determination in the temporomandibular joint.** *Oral Surgery, Oral Medicine, and Oral Pathology* 57(6): 583-588.

Salter, R.B. (1968). **Etiology, pathogenesis and possible prevention of congenital dislocation of the hip.** *Canadian Medical Association Journal* 98(20): 933-945.

Sims, C.D., P.E.M. Butler, R. Casanova, M.A. Randolph, and M.J. Yaremchuk (1997). **Prolonged general anesthesia for experimental craniofacial surgery in fetal swine.** *Journal of Investigative Surgery* 10(1-2): 53-57.

Siontkowski, M.F., S. Tepic, B.A. Rahn, J. Cordey, and S.M. Perren (1993). **The effect of fracture on femoral head blood flow. Osteonecrosis and revascularization studied in miniature swine.** *Acta Orthopaedica Scandinavica* 64(2): 196-202.

Suzuki, K., J. Mochida M. Chiba, and H. Kikugawa (Jan. 1999). **Posterior stabilization of degenerative lumbar spondylolisthesis with a Leeds-Keio artificial ligament. A biomechanical analysis in a porcine vertebral model.** *Spine* 24(1): 26-31.

Swindle, M.M. (1998). **Musculoskeletal system/orthopedic procedures.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 215-224.
NAL call number: RD29.5.S94S944 1998

OBSTETRICS and GYNECOLOGY

Molina, J.R., A.I. Musah, D.L. Hard, and L.L. Anderson (1985). **Conceptus development after vascular occlusion of the middle uterine artery in the pig.** *Journal of Reproduction and Fertility* 75(5): 501-506.

Montz, F.J., B.J. Monk, S.M. Lacy, and J.M. Fowler (1993). **Ketorolac, tromethamine, a nonsteroidal anti-inflammatory drug: ability to inhibit post-radical pelvic surgery adhesions in a porcine model.** *Gynecologic Oncology* 48: 76-79.

Rock, J.A., Z. Rosewaks, and E.Y. Adashi (1979). **Microsurgery for tubal reconstruction following Falope-Ring sterilization in swine.** *Journal of Microsurgery* 1: 61-64.

OPHTHALMOLOGY

Adams, R.J. (1988). **Opthalmic system.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 125-153.
NAL call number: RB125 E9

Andreo, L.K., M.E.Wilson, and D.J. Apple (April 1999). **Elastic properties and scanning electron microscopic appearance of manual continuous curvilinear capsulorhexis and vitrectorhexis in an animal model of pediatric cataract.** *Journal of Cataract and Refractive Surgery* 25(4): 534-539.

Bissen-Miyajima, H., S. Shimmura, and K. Tsubota (Jan. 1999). **Thermal effect on corneal incisions with different phacoemulsification ultrasonic tips.** *Journal of Cataract and Refractive Surgery* 25(1): 60-64.

Bohnke, M., P. Chavanne, R. Gianotti, and R.P. Salathe (Nov. 1996). **High-precision, high-speed measurement of excimer laser keratectomies with a new optical pachymeter.** *German Journal of Ophthalmology* 5(6): 338-342.

Cranstoun, S.D., C.E. Riva, et al. (1997). **Continuous measurements of intra-vascular pO-2 in the pig optic nerve head.** *Klinische Monatsblaetter fuer Augenheilkunde* 210(5): 313-315.

Hoerle, S., Y.Q. Xing, B. Schroeder, and J. Chofflet (1997). **Comparison of changes in corneal topography in porcine eyes and human eyes after scleral buckling surgery for retinal detachment.** *Investigative Ophthalmology and Visual Science* 38(4, Part 1-2): S1091.

Holschbach, A., C. Wirbelauer, T. Kramer, and J. Wollensak (June 1997). **Photovaporization rate and profile of an erbium-chromium:YAG laser in the fundamental mode.** *Journal of Cataract and Refractive Surgery* 23(5): 726-730.

Keuch, R.J. and H. Bleckmann (Jan. 1999). **Comparison of 3 microkeratomes used for keratomileusis in situ in a swine model.** *Journal of Cataract and Refractive Surgery* 25(1): 24-31.

Kubota, S., K. Gunji, B.A.C. Ackrell, B. Cochran, et al. (Feb. 1998). **The 64-kilodalton eye muscle protein is the flavoprotein subunit of mitochondrial succinate dehydrogenase: The corresponding serum antibodies are good markers of an immune-mediated damage to the eye muscle in patients with Graves' hyperthyroidism.** *Journal of Clinical Endocrinology and Metabolism* 83(2): 443-447.

Krag, S., K. Thim, and L. Corydon (Jan-Feb 1997). **Diathermic capsulotomy versus capsulorhexis: a biomechanical study.** *Journal of Cataract and Refractive Surgery* 23(1): 86-90.

Kuiper, B., M.H. Boeve, T. Jansen, et al. (April 1997). **Ophthalmologic examination in systemic toxicity studies: an overview.** *Laboratory Animals* 31(2): 177-183.
NAL call number: QL55.A1L3

Kuster, P., M. Taravella, and M. Gelinas (April 1998). **Delivery of trifluridine to human cornea and aqueous using collagen shields.** *CLAO Journal* 24(2): 122-124.

Lang, M.G., P. Zhu, P. Meyer, et al. (March 1997). **Amlodipine and benazeprilat differently affect the responses to endothelin-1 and bradykinin in porcine ciliary arteries: effects of a low and high dose combination.** *Current Eye Research* 16(3): 208-213.

Loget, O. and G. Saint-Macary (1998). **Comparative study of ophthalmological observations in the Yucatan micropig and in the Gottingen minipig.** *Scandinavian Journal of Laboratory Animal Science* 25(Suppl. 1): 173-179.
NAL call number: QL55.S322

Liu, C.D., R.P. Danis, D.P. Bingaman, and Y. Yang (1996). **Natural history of branch retinal vein occlusion in minipigs.** *Investigative Ophthalmology and Visual Science* 37(3): S965.

Melles, G.R., F.J. Rietveld, W.H. Beekhuis, and P.S. Binder (Jan. 1999). **A technique to visualize corneal incision and lamellar dissection depth during surgery.** *Cornea* 18(1): 80-86.

Meyer, P., M.G. Lang, J. Flammer, and T.F. Luscher (May 1995**). Effects of calcium channel blockers on the response to endothelin-1, bradykinin and sodium nitroprusside in porcine ciliary arteries.** *Experimental Eye Research* 60(5): 505-510.

Nishi, O., K. Nishi, C. Mano, M. Ichihara, and T. Honda (April 1997). **Controlling the capsular shape in lens refilling.** *Archives of Ophthalmology* 115(4): 507-510.

Porrello, G., A. Giudiceandrea, T. Salgarello, and C. Tamburrelli (June 1999). **A new device for ocular surgical training on enucleated eyes.** *Ophthalmology* 106(6): 1210-1213.

Schweitzer, D., M. Hammer, and M. Scibor (1996). **Imaging spectrometry in ophthalmology--principle and applications in microcirculation and in investigation of pigments.** *Ophthalmic Research* 28(Suppl. 2): 37-44.

Spoerl, E., M. Huhle, M. Kasper, and T. Seiler (Dec. 1997). **Artificial stiffening of the cornea by induction of intrastromal cross-links.** *Ophthalmologe* 94(12): 902-906.

Thijssen, J.M., C.L. De Korte, A.F.W. Van Der Steen, et al. (1997). **Acoustic characteristics of the eye lens.** In: *Documenta Ophthalmologica Proceedings Series, Ultrasonography in Ophthalmology XV*, G. Cennamo and N. Rosa (eds.), Kluwer Academic Publishers, Hingham, MA, pp.483-496, ISBN: 0-7923-4464-2.

Uhlig, C.E. and H. Gerding (Sept. 1998). **A dummy orbit for training in diagnostic procedures and laser surgery with enucleated eyes.** *American Journal of Ophthalmology* 126(3): 464-466.

van Vreeswijk, H. and J.H. Pameyer (Jan. 1998). **Inducing cataract in postmortem pig eyes for cataract surgery training purposes.** *Journal of Cataract and Refractive Surgery* 24(1): 17-18.

PANCREAS

Desport, J.C., C. Juste, B. Beaufrere, and T. Corring (1997). **The pig as a model in clinical investigation of the exocrine pancreatic insufficiency and of cholesterol crystallization from bile.** In: *EAAP Publication: Digestive Physiology of the Pig*, Proceedings of the 7th International Symposium Saint Malo, France. 26-28 May 1997, J.P.

Laplace, C. Fevrier, and A. Barbeau (eds.), Institut National de la Recherche Agronomique (INRA): Paris, France, pp. 17-27, ISBN: 2-7380-0749-X.
NAL call number: 49.9 Eu7 no.88

Engelhardt, W., P.O. Schwille, C. Gebhardt, M. Stolte, and H. Zirngibl (1982). **Pancreatic tissue hormones and molar insulin glucagon ratio in portal and peripheral blood of the minipig--Influence of pancreatic duct occlusion.** *European Surgical Research* 14(2): 97-100.

Hjelmqvist, B., H. Teder, A. Borgstrom, and S. Bjorkman (1990). **Indomethacin and pancreatic blood flow. An experimental study in pigs.** *Acta Chirurgica Scandinavica* 156: 543-547.

Koyama, I., L.R. Pennington, M.M. Swindle, and G.M. Williams (1986). **Pancreatic allotransplantation with roux-en-y jejunal diversion in swine: Its technical aspects.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, NY: Plenum Publishers, pp. 385-390.
NAL call number: RB125.C68 1985

Laber-Laird, K., A.C. Smith, M.M. Swindle, and J. Colwell (1992). **Effects of isoflurane anesthesia on glucose clearance in Yucatan minipigs.** *Laboratory Animal Science* 42(6): 579-581.
NAL call number: 410.9 P94

Mullen, Y., Y. Taura, M. Nagata, K. Miyazawa, and E. Stein (1992). **Swine as a model for pancreatic beta-cell transplantation.** In: *Swine as Models in Biomedical Research* M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 16-34.
NAL call number: RB125.S79 1992

Papalois, A., V. Smyrniotis, L. Papadimitriou, G. Kostopanagiotou (1999). **Isolated pancreatic graft of swine: Development of a model for drug studies.** *Transplantation Proceedings* 31(7): 2768-2771.

Pennington, L. and M.G. Sarr (1988). **Pancreas transplantation.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 296-297.
NAL call number: RB125 E9

Pitkaranta, P., L. Kivisaari, S. Nordling, A. Saari, and T. Schroder (1989). **Experimental chronic pancreatitis in the pig.** *Scandinavian Journal of Gastroenterology* 24(8): 987-992.

Sarr, M.G. (1988). **Pancreas.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 204-216.
NAL call number: RB125 E9

Sasaki, N., K. Yoneda, C. Bigger, J. Brown, and Y. Mullen (1984). **Fetal pancreas transplantation in miniature swine. Developmental characteristics of fetal pig pancreases.** *Transplantation* 38(4): 335-340.

Stump, K.C., M.M. Swindle, C.D. Saudek, and J.D. Strandberg (1988). **Pancreatectomized swine as a model of diabetes mellitus.** *Laboratory Animal Science* 38(4): 439-443.
NAL call number: 410.9 P94

Swindle, M.M. (1998). **Pancreas and spleen.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 119-126.
NAL call number: RD29.5.S94S944 1998

Thorpe, C.D. and C.F. Frey (1971). **Experimental pancreatitis in pigs.** *Archives of Surgery* 103(6): 720-723.

PEDIATRICS and NEONATAL

Cleland-Zamudio, S.S., G.S. Goding, M. Mahowald, and K.J. Pernell (March 1999). **Effect of sleep state on the laryngeal chemoreflex in neonatal piglets.** *Annals of Otology, Rhinology and Laryngology* 108(3): 309-313.

Cohen, I.T., S.O. Nelson, and M.P. Hirsh (1992). **The role of the Hanford minipig as an animal model in pediatric surgery and neonatal intensive care.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 57-63.
NAL call number: RB125.S79 1992

Corin, W.J., M.M. Swindle, J.F. Spann Jr., M. Frankis, W.W.R. Biederman, A. Smith, A. Taylor, and B.A. Carabello (1988). **The mechanism of decreased stroke volume in children and swine with ventricular septal defect and failure to thrive.** *Journal of Clinical Investigation* 82(2): 544-551.

Domkowski, P.W., J.T. Cockerham, D. Crescenzo, et al. (1994). **Pulmonary hydraulic impedance responses to hypoxia and hypercapnia in newborn pigs.** *Journal of Applied Physiology* 77: 386-396.

Gootman, P.M., H.L. Cohen, A.M. Steele, A. Sica, et al. (1990). **Effects of anesthesia on efferent phrenic activity in neonatal swine.** *Brain Research* 522: 131-134

Hanna, N., P. Lachapelle, M.S. Roy, J. Orquin, D.R. Varma, and S. Chemtob (1995). **Alterations in the electroretinogram of newborn piglets by propionic acid-derivative nonsteroidal antiinflammatory drugs but not by indomethacin and diclofenac.** *Pediatric Research* 37: 81-85.

Jeffery, H.E., M. Page, E.J. Post, and A.K.W. Wood (1995). **Physiological studies of gastro-oesophageal reflux and airway protective responses in the young animal and human infant.** *Clinical and Experimental Pharmacology and Physiology* 22(8): 544-549.

Laferriere, A., J.K. Liu, and I.R. Moss (Jan. 1999). **Mu- and delta-opioid receptor densities in respiratory-related brainstem regions of neonatal swine.** *Brain Research. Developmental Brain Research* 112(1): 1-9.

Lock, J.E., T. Niemi, B.A. Burke, S. Einzig, and W. Castaneda-Zuniga (1982). **Transcutaneous angioplasty of experimental aortic coarctation.** *Circulation* 6(6): 1280-1286.

Lund, G., J. Rysavy, A. Cragg, E. Salomonowitz, Z. Vlodaver, W.C. Zuniga, and K. Amplatz (1984). **Long-term patency of the ductus arteriosus after ballon dilatation: an experimental study.** *Circulation* 69(4): 772-775.

Manaligod, J.M., E.M. Bendel-Stenzel, K.M. Smith, S.C. Simonton, D.R. Bing, P.A. Meyers, J.E. Connett, and M.C. Mammel (April 1999). **High frequency oscillatory and conventional ventilation, exogenous surfactant, and partial liquid ventilation: Physiologic effects of prolonged treatment in an animal lung injury model.** *Pediatric Research* 45(4, Part 2): 311A.

Mitchell, S.E., J.H. Anderson, M.M. Swindle, J.D. Strandberg, and J. Kan (1994). **Atrial septostomy: Stationary angioplasty balloon technique. Experimental work and preliminary clinical applications.** *Pediatric Cardiology* 15(1): 1-7.

Moffitt, E.A., J.W. Kirklin, and R.A. Theye (1962). **Physiologic studies during whole body perfusion in Tetralogy of Fallot.** *Journal of Thoracic and Cardiovascular Surgery* 44(2): 180.

Morrow, W.R., V.C. Smith, W.J. Ehler, A.F. Van Dellen, and C.E. Mullins (1994). **Balloon angioplasty with stent implantation in experimental coarctation of the aorta.** *Circulation* 89(6): 2677-2683.

Mrozek, J.D., K.M. Smith, S.C. Simonton, D.R. Bing, P.A. Meyers, J.E. Connett, and M.C. Mammel (1999). **Perfluorocarbon priming and surfactant: Physiologic and pathologic effects.** *Critical Care Medicine* 27(9): 1916-1922.

Post, E.J., A.K. Wood, M. Page, and H.E. Jeffery (1995). **A method for simultaneous physiological and radiographic recordings from sleeping neonatal piglets.** *Sleep* 18(5): 309-316.

Randsbaek, F., C.J. Riordan, J.H. Storey, W.D. Montgomery, W.P. Santamore, and E.H. Austin III (1996). **Animal model of the univentricular heart and single ventricular physiology.** *Journal of Investigative Surgery* 9(4): 375-384.

Schleman, M., N. Gootman, and P.M. Gootman (1979). **Cardiovascular and respiratory responses to right atrial injections of phenyl diguanide in pentobarbital-anesthetized newborn piglets.** *Pediatric Research* 13(11): 1271-1274.

Starling, M.B., J.M. Neutze, R.L. Elliott, I.M. Taylor, and R.B. Elliott (1978). **The effects of some methyl prostaglandin derivatives on the ductus arteriosus of swine in vivo.** *Prostaglandins and Medicine* 1(4): 267-281.

Swindle, M.M., R.P. Thompson, A.C. Smith, G.B. Keech, B.A. Carabello, W. Radtke, D. Fyfe, and P.C. Gillette (1996). **The Yucatan miniature pig model of ventricular septal defect.** In: *Advances in Swine in Biomedical Research*, M.E. Tumbleson and L.B. Schook (eds.), Vol. 2, NY: Plenum Press, pp. 613-620.
NAL call number: RB125.A36 1996

Swindle, M.M., R.P. Thompson, B.A. Carabello, A.C. Smith, C. Green, and P.C. Gillette. (1992). **Congenital cardiovascular disease.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 176-184.
NAL call number: RB125.S79 1992

Terndrup, T.E., A.M. Paskanik, W.E. Fordyce, and R.K. Kanter (1993). **Development of a piglet model of status epilepticus: preliminary results.** *Annals of Emergency Medicine* 22: 164-170.

Tong, S.W., S. Ingenito, J.E. Anderson, N. Gootman, A.L. Sica, and P.M. Gootman (1995). **Development of a swine animal model for the study of sudden infant death syndrome.** *Laboratory Animal Science* 45(4): 398-403.
NAL call number: 410.9 P94

Undar, A., A.J. Lodge, T.M. Runge, C.W. Daggett, R.M. Ungerleider, and J.H. Calhoon (1996). **Design and performance of a physiologic pulsatile flow neonate-infant cardiopulmonary bypass system.** *ASAIO Journal* 42(5): M580-M583.

Undar, A., T. Masai, R. Inman, E.A. Beyer, M.A. Mueller, M.C. McGarry, O.H. Frazier, and C.D. Jr. (Jan-Feb. 1999). **Evaluation of a physiologic pulsatile pump system for neonate-infant cardiopulmonary bypass support.** *ASAIO Journal* 45(1): 53-58.

Van Vleet, J.F. and V.J. Ferrans (1986). **Cardiovascular diseases of swine.** In: *Swine in Cardiovascular Research*, H.C. Stanton and H.J. Mersmann (ed.), Vol. 1, Boca Raton, FL: CRC Press, pp. 121-168.
NAL call number: RC669 S87

PHYSIOLOGY

Armstead, W.M., C.W. Leffler, D.W. Busija, D.G. Beasley, and R. Mirro (April 1988). **Adrenergic and prostanoid mechanisms in control of cerebral blood flow in hypotensive newborn pigs.** *American Journal of Physiology* 254 (4, Part 2): H671-H677.

Becker, B.A., Y. Niwano, and H.D. Johnson (1992). **Physiologic and immune responses associated with 48-hour fast of pigs.** *Laboratory Animal Science* 42(1): 51-53.
NAL call number: 410.9 P94

Bharati, S., M. Levine, K. Shoei, S. Huang, B. Handler, G.V.S. Parr, R. Bauernfeind, and M. Lev (1991). **The conduction system of the swine heart.** *Chest* 100(1): 207-212.

Brown, D.R. and J.M. Terris (1996). **Swine in physiological and pathophysiological research.** In: *Advances in Swine in Biomedical Research*, M.E. Tumbleson and L.B. Schook (eds.), Vol. 1, NY: Plenum Press, pp. 5-6.
NAL call number: RB125.A36 1996

Feletou, M. and B. Teisseire (1992). **Vascular pharmacology of the micropig: Importance of the endothelium.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 74-95.
NAL call number: RB125.S79 1992

Gootman, N., P.M. Gootman, B.J. Buckley, and N.M. Buckley (1986). **Cardiovascular effects of catecholamine infusions in developing swine.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 3, NY: Plenum Pubishers, pp. 1615-1622.
NAL call number: RB125.C68 1985

Hoffman, J.F. (1999). ***Annual Review of Physiology***, Annual Reviews Inc., Palo Alto: CA, ISBN: 0-8243-0361-X.

Horkovics-Kovats, S. and F. Schatz (1996). **Physiologically based pharmacokinetic modeling with valnemulin and its metabolites after multiple oral administration in pigs.** *Journal of Pharmaceutical Medicine* 6(3/4): 149-167.

Jensen, L.T. (1997). The aminoterminal propeptide of type III procollagen. Studies on physiology and pathophysiology. *Danish Medical Bulletin* 44(1): 70-78.

Melick, W.F., J.J. Naryka, and J.H. Schmidt (1961). **Experimental studies of ureteral peristaltic patterns in the pig. Similarity of pig and human ureter and bladder physiology.** *Journal of Urology* 85(1): 145-148.

Moffitt, E. A., J.W. Kirklin, and R.A. Theye (1962). **Physiologic studies during whole body perfusion in Tetralogy of Fallot.** *Journal of Thoracic and Cardiovascular Surgery* 44(2): 180.

Ogawa, H., T. Gomi, F. Takusagawa, and M. Fujioka (1998). **Structure, function and physiological role of glycine N-methyltransferase.** *International Journal of Biochemistry and Cell Biology* 30(1): 13-26.

Pallauf, J. (1997). ***Proceedings of the Society of Nutrition Physiology, Gottingen, Germany, 4-6 March 1997.*** Proceedings of the Society and Nutrition Physiology: Volume 6, 51st, Gottingen, Germany, 04.-.06.03.1997 vol. 6, DLG Verlags GmbH: Frankfurt am Main, Germany, 236 pp., ISBN: 3-7690-4090-2.

Post, E.J., A.K. Wood, M. Page, and H.E. Jeffery (1995). **A method for simultaneous physiological and radiographic recordings from sleeping neonatal piglets.** *Sleep* 18(5): 309-316.

Quac, N.K., T.V. Phung, and G.H. Jaffar (1996). **Study on the physiological characteristics and reproduction of crossbred sows F1 (Yorkshire x Mongcai).** *Agricultura Tropica et Subtropicao* 29: 9-64.

Reeds, P. and J. Odle (1986). **Pigs as models for nutrient functional interaction.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 2, NY: Plenum Publishers, pp. 709-711.
NAL call number: RB125.C68 1985

Swindle, M.M. and A.C. Smith (1998). **Comparative anatomy and physiology of the pig.** *Scandinavian Journal of Laboratory Animal Science* 25(Suppl. 1): 11-21.
NAL call number: QL55.S322

Travis, D.L., A.W. Paulsen, and Y. Genyk (March-April 1996). **Development of an in situ isolated porcine liver perfusion model for tightly controlled physiologic and pharmacologic studies.** *Journal of Investigative Surgery* 9(2): 131-147.

Yamamoto, Y., C. Yanaihara, Y. Katsumaru, T. Mochizuki, A. Tobe, M. Egawa, H. Imura, S. Numa, and N. Yanaihara (1983). **Synthesis of porcine leumorphin and some of its biological activities.** *Regulatory Peptides* 6: 163-168.

Zallinger, C. von, and K. Tempel (1998). **The physiologic response of domestic animals to ionizing radiation: a review.** *Veterinary Radiology and Ultrasound* 39(6): 495-503.

PULMONARY

Balaraman, V., S.L. Sood, K.C. Finn, G. Hashiro, C.F.T. Uyehara, and D. Easa (1996). **Physiologic response and lung distribution of lavage versus bolus Exosurf(R) in piglets with acute lung injury.** *American Journal of Respiratory and Critical Care Medicine* 153(6 I): 1838-1843.

Forsgren, P. and J. Modig (1986). **Lung mechanics with relation to pulmonary haemodynamics, gas exchange and extravascular lung water in mechanically ventilated endotoxaemic pigs.** *Acta Chirurgica Scandinavica* 152: 561-568.

Forsgren, P., G. Wegenius, and J. Modig (1986). **Pulmonary function, extravascular lung water and chest radiography in a porcine model of adult respiratory distress syndrome.** *Acta Anaesthesiolgica Scandinavica* 30: 463-469.

Gade, J., M.A. Norgaard, C.B. Andersen, et al. (Feb. 1999). **The porcine bronchial artery: surgical and angiographic anatomy.** *Journal of Anatomy* 194(Part 2): 241-247.

Greenberg, S., C. McGowan, and T.M. Glenn (1981). **Pulmonary vascular smooth muscle function in porcine splanchnic arterial occlusion shock.** *American Journal of Physiology* 241(1): H33-34.

Greif, W.M. and R.A. Forse (March 1999). **Cardiopulmonary effects of the laparoscopic pneumoperitoneum in a porcine model of adult respiratory distress syndrome.** *American Journal of Surgery* 177(3): 216-221

Harjula, A. and J.C. Baldwin (1987). **Lung transplantation in the pig with successful preservation using prostaglandin E-1.** *Applied Cardiology* 2: 397.

Haworth, S.G. and A.A. Hislop (1981). **Adaptation of the pulmonary circulation to extra-uterine life in the pig and its relavance to the human infant.** *Cardiovascular Research* 15(2): 108-119.

Hudson, L.C. and B.A. Gilroy (1986). **Percutaneous transtracheal ventilation in swine.** *Laboratory Animal Science* 36(4): 420-424.
NAL call number: 410.9 P94

Malis, D.D., E. Grouzmann, D.R. Morel, M. Mutter, and J.S. Lacroix (Feb. 1999). **Influence of TASP-V, a novel neuropeptide Y(NPY)Y2 agonist, on nasal and bronchial responses evoked by histamine in anaesthetized pigs and in humans.** *British Journal of Pharmacology* 126(4): 989-996

Manaligod, J.M., E.M. Bendel-Stenzel, K.M. Smith, S.C. Simonton, D.R. Bing, P.A. Meyers, J.E. Connett, and M.C. Mammel (April 1999). **High frequency oscillatory and conventional ventilation, exogenous surfactant, and partial liquid ventilation: Physiologic effects of prolonged treatment in an animal lung injury model.** *Pediatric Research* 45(4, Part 2): 311A.

Marquette, C.H., D. Wermert, and F. Wallet (Jan. 1999). **Characterization of an animal model of ventilator-acquired pneumonia.** *Chest* 115(1): 200-209

Mitchell, H.W. (1997). **Physiology of airway narrowing. Clinical and** *Experimental Pharmacology and Physiology*

24(3-4): 256-260.

Mitchell, H.W., D.J. Turner, P.R. Gray, and P.K. McFawn (March 1999). **Compliance and stability of the bronchial wall in a model of allergen-induced lung inflammation.** *Journal of Applied Physiology* 86(3): 932-937.

Modig, J. and Borg, T. (1985). **High-dose methylprednisolone in a porcine model of ARDS induced by endotoxemia.** *Acta Chirurgica Scandinavica Supplement* 526: 94-103.

Modig, J., T. Samuelsson, and R. Sandin (1986). **Treatment with prostaglandin E1 in a porcine model of early adult respiratory distress syndrome.** *Acta Chirurgica Scandinavica* 152: 569-575.

Mrozek, J.D., K.M. Smith, S.C. Simonton, D.R. Bing, P.A. Meyers, J.E. Connett, and M.C. Mammel (1999). **Perfluorocarbon priming and surfactant: Physiologic and pathologic effects.** *Critical Care Medicine* 27(9): 1916-1922.

Olson, N.C., T.T. Brown Jr., and D.L. Anderson (1985). **Dexamethasone and indomethacin modify endotoxin-induced respiratory failure in pigs.** *Journal of Applied Physiology* 58: 274-284.

Salminen, U.S., T. Ikonen, M. Uusitalo, et al. (1998). **Obliterative lesions in small airways in an immunosuppressed porcine heterotopic bronchial allograft model.** *Transplant International* 11(Suppl. 1): S515-S518.

Schranz, D., R.G. Huth, H. Stopfkuchen, and B.K. Jungst (1988). **The effect of nifedipine alone or combined with low dose acetylsalicylic acid on endotoxin-induced pulmonary hypertension in the piglet.** *Intensive Care Medicine* 14(6): 595-601.

Sjostrand, U.H., R.B. Smith, L. Bunegin, P. Helsel, J.O. Herrera Hoyos, M.B. Wennhager, U.R. Borg, and L. Bready (1987). **Gas exchange in low-compression HFPPV is maintained at low distending pressures in the pig.** *Acta Anaesthesiolgica Scandinavica* 31: 417-422.

Sun, B., T. Curstedt, G. Lindgren, B. Franzen, A.A. Alaiya, A. Calkovska, and B. Robertson (1997). **Biophysical and physiological properties of a modified porcine surfactant enriched with surfactant protein A.** *European Respiratory Journal* 10(9): 1967-1974.

Tasaki, O., C. Goodwin, D.W. Mozingo, et al. (June, 1999). **Selectin blockade worsened lipopolysaccharide-induced lung injury in a swine model.** *Journal of Trauma Injury Infection and Critical Care* 46(6): 1089-1095.

Vainio, O.M. and B.C. Bloor (1994). **Relation between body temperature and dexmedetomidine-induced minimum alveolar concentration and respiratory changes in isoflurane-anesthetized miniature swine.** *American Journal of Veterinary Research* 55: 1000-1006.
NAL call number: 41.8 Am3A

Van Reeth, K., H. Nauwynck, M. Pensaert (April 1998). **Bronchoalveolar interferon-alpha, tumor necrosis factor-alpha, interleukin-1, and inflammation during acute influenza in pigs: a possible model for humans?** *Journal of Infectious Diseases* 177(4): 1076-1079.

Wadell, C., E. Bjork, and O. Camber (Feb. 1999). **Nasal drug delivery: evaluation of an in vitro model using porcine nasal mucosa.** *European Journal of Pharmaceutical Sciences* 7(3): 197-206.

REPRODUCTIVE

Cao, J. and E.R. Chavez (1995). **The effects of low dietary copper intake during pregnancy on physiological fluids and reproductive performance of first-litter gilts.** *Journal of Trace Elements in Medicine and Biology* 9(1):18-27.

Christenson, R.K., K.A. Leymaster, and L.D. Young (1987). **Justification of unilateral hysterectomy-ovariectomy as a model to evaluate uterine capacity in swine.** *Journal of Animal Science* 65(3): 738-744.
NAL call number: 49 J82

Chwetzoff, S. and S. d'Andrea (1997). **Ubiquitin is physiologically induced by interferons in luminal epithelium of porcine uterine endometrium in early pregnancy: Global RT-PCR cDNA in place of RNA for differential display screening.** *FEBS Letters* 405(2): 148-152.

Cort, N. and H. Kindahl (1990). **Endotoxin-induced abortion in early pregnant gilts and its prevention by flunixin meglumine.** *Acta Veterinaria Scandinavica* 31: 347-358.
NAL call number: 41.8 AC87

Cort, N. and H. Kindahl (1992). **Effect of flunixin meglumine on the endocrine control of luteolysis in the porcine estrous cycle.** *Acta Veterinaria Scandinavica* 33: 245-247.
NAL call number: 41.8 AC87

Edwards, B.L. (1984). **Replacement of prolapsed uterus in a sow.** *The Veterinary Record* 114(4): 102.
NAL call number: 41.8 V641

Evans, L.E. and J.C.H. Ko (1990). **Electroejaculation and artificial insemination in Vietnamese potbellied miniature pigs.** *Journal of the American Veterinary Association* 197: 1366-1367.
NAL call number: 41.8 Am3

Geisert, R.D., R.J. Rasby, J.E. Minton, and R.P. Wetteman (1986). **Role of prostaglandins in development of porcine blastocysts.** *Prostaglandins* 31: 191-204.

Godke, R.A., V.A. Lambeth, and J.L. Kreider (1979). **A simplified technique of vasectomy for heat-check boars.** *Veterinary Medicine. Small Animal Clinician* 74(7): 1927-1029.
NAL call number: 41.8 M69

Haney, A.F., S.F. Hughes, and C.L. Hughes Jr. (1987). **Effects of acetaminophen and nonsteroidal anti-inflammatory drugs on progesterone production by porcine granulosa cells in vitro.** *Reproductive Toxicology* 1: 285-291.

Hunter, R.H. and T. Greve (1996). **Intersexuality in pigs: clinical, physiological and practical considerations.** *Acta Veterinaria Scandinavica* 37(1): 1-12.
NAL call number: 41.8 AC87

Kross, S.B., N.K. Ames, and C. Gibson (1982). **Extirpation of the preputial diverticulum in a boar.** *Veterinary Medicine. Small Animal Clinician* 77(4): 549-553.
NAL call number: 41.8 M69

Ladwig, V.D. (1975). **Surgical procedure to control hemorrhage of porcine vulva.** *Journal of the American Veterinary Association* 166(6): 598-599.
NAL call number: 41.8 Am3

Layman, T.S., R.P. Burns, K.E. Chandler, W.L. Russell, and R.G. Cook (1993). **Laparoscopic inguinal herniorrhaphy in a swine model.** *American Surgeon* 59(1): 13-19.

Marengo, S.R., F.W. Bazer, W.W. Thatcher, C.J. Wilcox, and R. Wetteman (1986). **Prostaglandin F2 alpha as the luteolysin in swine: VI. Hormonal regulation of the movement of exogenous PGF2 alpha from the uterine lumen into the vasculature.** *Biology of Reproduction* 34: 284-292.

Markham, L. (1968). **Replacement of prolapsed uterus in a sow.** *The Veterinary Record* 82: 605-606.
NAL call number: 41.8 V641

Martinat-Botte, F., H. Quesnel, A. Prunier, J. Tournut, and M. Terqui (1996). **Reproduction in the sow: endocrine changes and control. Part 1.** *Revue de Medecine Veterinaire* 147(1): 33-46.

Martinat-Botte, F., H. Quesnel, A. Prunier, J. Tournut, and M. Terqui (1996). **Reproduction in the sow: endocrine changes and control. Part 2.** *Revue de Medecine Veterinaire* 147(2): 111-122.

Mayo, M.B. and H.N. Becker (1982). **Unilateral castration to correct a peritesticular hematoma in a boar.** *Veterinary Medicine. Small Animal Clinician* 77(3): 449-451.
NAL call number: 41.8 M69

Mbiuki, S.M. (1982). **Mammectomy for treatment of chronic mastitis in sows.** *Veterinary Medicine. Small Animal Clinician* 77(10): 1516-1517.
NAL call number: 41.8 M69

McGlone, J.J. and J.M. Hellman (1988). **Local and general anesthetic effects on behavior and performance of two and seven week old castrated and uncastrated piglets.** *Journal of Animal Science* 66(12): 3049-3058.
NAL call number: 49 J82

Noordhuizen-Stassen, E.N. and C.J. Wensing (1983). **The effect of transection of the main vascular and nervous supply of the testis on the development of spermatogenic epithelium in the pig.** *Journal of Pediatric Surgery* 18(5): 601-606.

Odensvik, K., N. Cort, S. Basu, and H. Kindahl (1989). **Effect of flunixin meglumine on prostaglandin F2 alpha synthesis and metabolism in the pig.** *Journal of Veterinary Pharmacology and Therapeutics* 12: 307-311.
NAL call number: SF915 J63

Pedersen, V., J.L. Barnett, P.H. Hemsworth, E.A. Newman, and B. Schirmer (1998). **The effects of handling on behavioural and physiological responses to housing in tether-stalls among pregnant pigs.** *Animal Welfare* 7(2): 137-150.
NAL call number: HV4701 A557

Pettersson, A., S. Einarsson, and H. Kindahl (1993). **A study on the effects of inhibition of prostaglandin biosynthesis with flunixin meglumine and later administration of prostaglandin F2 alpha on the intraluminal pressure variations in the isthmus of the oviduct in unrestrained gilts.** *Acta Veterinaria Scandinavica* 34: 125-131.
NAL call number: 41.8 AC87

Quesnel, H. and A. Prunier (1995). **Ovulation after weaning in the sow: Physiological mechanisms and factors of variation.** *Productions Animales* 8(3): 165-176.

Scambler, J.D. (1968). **Replacement of prolapsed uterus in a sow.** *The Veterinary Record* 82: 71-75.
NAL call number: 41.8 V641

Swindle, M.M. (1998). **Reproductive system.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 139-156.
NAL call number: RD29.5.S94S944 1998

Trudeau, V.L., J.C. Meijer, D.F.M. van de Wiel, and M.M. Bevers (1988). **Effects of morphine and naloxone on plasma levels of LH, FSH, prolactin and growth hormone in the miniature male pig.** *Journal of Endocrinology* 119(3): 501-508.

White, M. (March 1996). **Reproductive physiology of the pig--theory into practice.** *In Practice* 18(3): 108-111, 113-114.
NAL call number: SF601.I4

White, B.R., J. Barnes, and M.B. Wheeler (1996). **Reproductive physiology in Chinese Meishan pigs. A University of Illinois perspective.** In: *Advances in Swine in Biomedical Research*, M.E. Tumbleson and L.B. Schook (eds.), Vol. 2, NY: Plenum Press, pp. 503-521, ISBN: 0-306-45496-3.
NAL call number: RB125.A36 1996

SKIN and WOUND HEALING

Bolton, L.L., E. Pines, and D.T. Rovee (1988). **Wound healing and integumentary system.**In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), pp. 1-9.
NAL call number: RB125 E9

Chvapil, M. and T.A. Chvapil (1992). **Wound healing models in the miniature Yucatan pig.**In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 265-288.
NAL call number: RB125.S79 1992

Daniel, R.K., D.L. Priest, and D.C. Wheatley (1981). **Etiological factors in pressure sores: An experimental model.** *Archives of Physical Medicine and Rehabilitation* 62(10): 492-498.

Davis S.C., E. Badiavas, M.I. Rendon-Pellerano, and R.J. Pardo (1999). **Histological comparison of postoperative wound care regimens for laser resurfacing in a porcine model.** *Dermatologic Surgery* 25(5): 387-393.

Forbes, P.D. (1969). **Vascular supply of the skin and hair in swine.** In: *Advances in Biology of the Skin*, W. Montagna and R.L. Dobson (eds.), NY: Pergamon, ISBN: 0080129676.

Haws, M.J., J.O. Kucan, A.C. Roth, H. Suchy, and R.E. Brown (1996). **The effects of chronic ketorolac tromethamine (toradol) on wound healing.** *Annals of Plastic Surgery* 37: 147-51

Kerrigan, C.L., R.G. Zelt, J.G. Thomson, and E. Diano (1986). **The pig as an experimental animal in plastic surgery research for the study of skin flaps, myocutaneous flaps and fasciocutaneous flaps.** *Laboratory Animal Science* 36(4): 408-412.
NAL call number: 410.9 P94

Kurihara-Bergstrom, T., M. Woodworth, S. Feisullin, and P. Beall (1986). **Characterization of the Yucatan miniature pig skin and small intestine for pharmaceutical applications.** *Laboratory Animal Science* 36(4): 396.
NAL call number: 410.9 P94

McGraft, M.H. and S.C. Hundahl (1982). **The spatial and temporal quantification of myofibroblasts.** *Plastic and Reconstructive Surgery* 69: 975-983.

McDonnell, G., K. Haines, D. Klein, et al. (Feb. 1999). **Clinical correlation of a skin antisepsis model.** *Journal of Microbiological Methods* 35(1): 31-35.

Mertz, P.M., P.A. Hebda, and W.H. Eaglstein (1986). **A porcine model for evaluation of epidermal wound healing.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, pp. 291-302.
NAL call number: RB125.C68 1985

Monteiro-Riviere, N.A. (1986). **Ultrastructural evaluation of the porcine integument.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, NY: Plenum Press, pp. 641-655.
NAL call number: RB125.C68 1985

Montiero-Riviere, N.A. and J. Riviere (1996). **The pig as a model for cutaneous pharmacology and toxicology research.** In: *Advances in Swine in Biomedical Research*, M.E. Tumbleson and L.B. Schook (eds.), Vol. 2, NY:

Plenum Press, pp. 425-458.
NAL call number: RB125.A36 1996

Morykwas, M.J., L.R. David, A.M. Schneider, et. al. (Jan.-Feb. 1999). **Use of subatmospheric pressure to prevent progression of partial-thickness burns in a swine model.** *Journal of Burn Care and Rehabilitation* 20(1, Part 1): 15-21.

Ordman, L.J. and T. Gillman (1966). **Studies in the healing of cutaneous wounds. III. A critical comparison in the pig of the healing of surgical incisions closed with sutures or adhesive tape based on tensile strength and clinical histological criteria.** *Archives of Surgery* 93(6): 911-928.

Riviere, J.E., K.F. Bowman, and N.A. Monteiro-Riviere (1986). **The isolated perfused porcine skin flap: A novel animal model for cutaneous toxicologic research.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, NY: Plenum Press, pp. 657-666.
NAL call number: RB125.C68 1985

Ross E.V., Mowlavi A., Barnette D., et al. (Feb. 1999). **The effect of wiping on skin resurfacing in a pig model using a high energy pulsed CO2 laser system.** *Dermatologic Surgery* 25(2): 81-88.

Sasaki, G.H. and C.Y. Pang (1984). **Pathophysiology of skin flaps raised on expanded pig skin.** *Plastic and Reconstructive Surgery* 74(1): 59-67.

Shircliffe, A.C., P.M. James, and J.H. Meredith (1974). **Technique for obtaining porcine heterografts for use on burned patients.** *Journal of Trauma* 14(2): 168-174.

Swindle, M.M. (1998). **Wound closure and integument.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 65-80.
NAL call number: RD29.5.S94S944 1998

Winter, G.D. (1972). **Epidermal regeneration in the domestic pig.** In: *Epidermal Wound Healing*, H.I. Maibach and D.T. Rovee (eds.), Chicago: Year Book, pp. 71-112.

SURGERY

Bailie, M.B., S.K. Wixson, and M.S. Landi (1986). **Vascular access port implantation for serial blood sampling in conscious swine.** *Laboratory Animal Science* 36(4): 431-433.
NAL call number: 410.9 P94

Becker, H.N. (1992). **Castration, vasectomy, hernia repair, and baby pig processing.** In: *Diseases of Swine*, A.D. Leman and B.E. Straw, W.L. Mengeling, S. D'Allaire, D.J. Taylor, 7th ed., Ames, IA: Iowa State University Press, pp. 943-956.

Bloomfield, G., B. Saggi, C. Blocher, and H. Sugerman (June 1999). **Physiologic effects of externally applied continuous negative abdominal pressure for intra-abdominal hypertension.** *Journal of Trauma* 46(6): 1009-1014.

Bollen, P.J., A.K. Hansen, and H.J. Rasmussen (2000). **Experimental techniques.** In: *The Laboratory Swine*, Boca Raton, FL: CRC Press LLC, pp. 83-106, ISBN: 0849310350.

Bollwahn, W. (1992). **Surgical procedures in boars and sows.** In: *Diseases of Swine*, A.D. Leman, B.E. Straw, W.L. Mengeling, S. D'Allaire, and D.J. Taylor (eds.), 7th ed., Iowa City, IA: Iowa State University Press, pp. 782-793.
NAL call number: SF971 D57 1992

Bowen, J., J. Cranley, and D. Gough (1995). **The flank approach to the porcine upper urinary tract: safe and reliable.** *Laboratory Animals* 29: 204-206.
NAL call number: QL55.A1L3

Brown, M.J., P.T. Pearson, and F.N. Tomson (1993). **Guidelines for animal surgery in research and teaching.** *American Journal of Veterinary Research* 54: 1544-1559.
NAL call number: 41.8 Am3A

Braun, W. (1993). **Anesthetics and surgical techniques useful in the potbellied pig.** *Veterinary Medicine* 88: 441-447.
NAL call number: 41.8 M69

Brutel de la Riviere, A., J.M. Quaegebeur, P.J. Hennis, G. Brutel de la Riviere, and G. Van Herpen (1983). **Growth of an aorta-coronary anastomosis. An experimental study in pigs.** *Journal of Thoracic and Cardiovascular Surgery* 86(3): 393-399.

Camprodon, R., J. Solsona, J.A. Guerrero, C.G. Mendoza, J. Segura, and J.M. Fabregat. (1977). **Intrahepatic vascular division in the pig: basis for partial hepatectomies.** *Archives of Surgery* 112(1K0): 38-40.

Christenson, R.K., K.A. Leymaster, and L.D. Young (1987). **Justification of unilateral hysterectomy-ovariectomy as a model to evaluate uterine capacity in swine.** *Journal of Animal Science* 65(3): 738-744.
NAL call number: 49 J82

Cohen, I.T., S.O. Nelson, and M.P. Hirsh (1992). **The role of the Hanford minipig as an animal model in pediatric surgery and neonatal intensive care.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 57-63.
NAL call number: RB125.S79 1992

Daniel, R.K., D.L. Priest, and D.C. Wheatley (1981). **Etiological factors in pressure sores: An experimental model.** *Archives of Physical Medicine and Rehabilitation* 62(10): 492-498.

Dawson, R.C., A.F. Krisht, D.L. Barrow, G.J. Joseph, G.G. Shengelaia, and B. Bonner (1995). **Treatment of experimental aneurysms using collagen-coated microcoils.** *Neurosurgery* 36(1): 133-140.

Djurhuus, J.C., B. Nerstrom, N. Gyrd-Hansen, H. Rask-Anderson. 1976. **Experimental hydronephrosis.** *Acta Chirurgica Scandinavica* (Supplementum) 472: 17-28.

Drisko, J.E., T.D. Faidley, D.F. Hora Jr., G.W. Niebauer, W.P. Feeney, B.H. Friscino, and G.J. Hickey (1996). **Transorbital approach to the porcine pituitary.** *Journal of Investigative Surgery* 9(4): 305-311.

Ehler, W.J., J.H. Cissik, V.C. Smith, and G.B. Hubbard (1990). **Evaluation of Gore-Tex graft material in the repair of right ventricular outflow tract defect.** *Journal of Investigative Surgery* 3(2): 119-127.

Ethicon (1988). ***Wound Closure Manual***, Sommerville, NJ: Ethicon, Inc.

Gayme, C.H., M.M. Swindle, P.C. Gillette, M.E. Harold, and R.E. Schumann (1995). **Percutaneous serial catheterization in swine: a practical approach.** *Journal of Investigative Surgery* 8: 123-128.

Godke, R.A., V.A. Lambeth, and J.L. Kreider (1979). **A simplified technique of vasectomy for heat-check boars.** *Veterinary Medicine. Small Animal Clinician* 74(7): 1927-1029.
NAL call number: 41.8 M69

Hall, T.S., M. Borkon, W.A. Baumgartner, R. Scott Stuart, M.M. Swindle, E. Galloway, and B.A. Reitz (1986). **Use of Swine in heart transplantation research.** In: *Swine in Biomedical Research*, *M.E. Tumbleson (ed.)*, *Vol* 1, p. 373-376.
NAL call number: RB125.C68 1985

Hand, M.S., R.W. Phillips, C.W. Miller, R.A. Mason, and W.V. Lumb (1981). **A method for quantitation of hepatic, pancreatic and intestinal function in conscious Yucatan miniature swine.** *Laboratory Animal Science* 31(6): 728-731.
NAL call number: 410.9 P94

Harvey, R.C. and E.F. Jones (1982). **A technique for bioinstrumentation of the thorax of miniature swine.** *Laboratory Animal Science* 32(1): 94-96.
NAL call number: 410.9 P94

Hayashi, A., S. Takamori, T. Matsuo, et al. (1999). **Experimental and clinical evaluation of the harmonic scalpel in thoracic surgery.** *Kurume Medical Journal* 46(1): 25-29.

Hendrick, D.A., A.C. Smith, J.M. Kratz, F.A. Crawford, and F.G. Spinale (1990). **The pig as a model of tachycardia and dilated cardiomyopathy.** *Laboratory Animal Science* 40(5): 495-501.
NAL call number: 410.9 P94

Hennig, U., B. Idzior, J. Wunsche, and H.D. Bock (1980). **Fistulation technique for the digestive tract of swine for the examination of protein metabolism.** *Archiv fur Experimentelle Veterinarmedizin* 34(3): 325-331.
NAL call number: 41.8 EX7

Horneffer, P.J., V.J. Gott, and T.J. Gardner (1986). **Swine as a cardiac surgical model.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol 1, NY: Plenum Press, pp. 321-326.
NAL call number: RB125.C68 1985

Jackson, B.T. and H. Egdahl (1960). **The performance of complex fetal operations in utero without amniotic fluid loss or other disturbances of fetal-maternal relationships.** *Surgery* 48: 564-570.

Jensen, D.M., G.A. Machicado, J.I. Tapia, G. Kauffman, P. Franco, and D. Beilin (1983). **A reproducible canine model of esophageal varices.** *Gastroenterology* 84(3): 573-579.

Jones, M.D. and B.B. Hudak (1988). **Fetal and neonatal surgery.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 300-308.
NAL call number: RB125 E9

Jorgensen, T.M. and J.C. Djurhuus (1986). **Experimental vesicoureteric reflux in pigs.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 3, NY: Plenum Press, pp. 1737-1751.
NAL call number: RB125.C68 1985

Jorgensen T.M., J.C. Djurhuus, H.S. Jorgensen, and S.S. Sorensen (1983). **Experimental bladder hyperreflexia in pigs.** *Urological Research* 11(5): 239-240.

Jorgensen, T.M., S. Olsen, J.C. Djurhuus, and J.P. Norgaard (1984). **Renal morphology in experimental vesicoureteral reflux in pigs.** *Scandinavian Journal of Urology and Nephrology* 18(1): 49-58.

Jorgensen, T.M., J. Mortensen, K. Nielsen, and J.C. Djurhuus (1984). **Pathogenetic factors in vesico-ureteral reflux. A longitudinal cystometrographic study in pigs.** *Scandinavian Journal of Urology and Nephrology* 18(1): 43-48.

Kalkwarf, K.L., R.F. Krejci, A.R. Edison, and R.A. Reinhardt (1983). **Subjacent heat production during tissue excision with electrosurgery.** *Journal of Oral and Maxillofacial Surgery* 41(10): 653-657.

Kerrigan, C.L., R.G. Zelt, J.G. Thomson, and E. Diano (1986). **The pig as an experimental animal in plastic surgery research for the study of skin flaps, myocutaneous flaps and fasciocutaneous flaps.** *Laboratory Animal Science* 36(4): 408-412.
NAL call number: 410.9 P94

Kjar, H.A. (1976). **Amputation of prolapsed rectum in young pigs.** *Journal of the American Veterinary Association* 168(3): 229-230.
NAL call number: 41.8 Am3

Koyama, I., L.R. Pennington, M.M. Swindle, and G.M. Williams (1986). **Pancreatic allotransplantation with roux-en-y jejunal diversion in swine: Its technical aspects.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, NY: Plenum Publishers, pp. 385-390.
NAL call number: RB125.C68 1985

Kraeling, R.R., C.R. Barb, and G.B. Rampacek (1986). **Hypophysectomy and hypophysial stalk transection in the pig: Technique and application to studies of ovarian follicular development.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, NY: Plenum Publishers, pp. 425-436.
NAL call number: RB125.C68 1985

Kratz, J.M., W.S. Johnson, R. Mukherjee, J. Hu, F.A. Crawford, and F.G. Spinale (1994). **The relation between latissimus dorsi skeletal muscle structure and contractile function after cardiomyoplasty.** *Journal of Thoracic and Cardiovascular Surgery* 107(3): 868-878.

Kross, S.B., N.K. Ames, and C. Gibson (1982). **Extirpation of the preputial diverticulum in a boar.** *Veterinary Medicine. Small Animal Clinician* 77(4): 549-553.
NAL call number: 41.8 M69

Ladwig, V.D. (1975). **Surgical procedure to control hemorrhage of porcine vulva.** *Journal of the American Veterinary Association* 166(6): 598-599.
NAL call number: 41.8 Am3

Lyden, S.P., J.H. Patton Jr., G.E. Woodman, D.N. Ragsdale, A.P. Willis, T.C. Fabian, and K.G. Proctor (1997). **Effect of transfusion on physiologic changes after resuscitated trauma.** *Surgery* 122(3): 534-545.

Maeda, K., L.O. Schoeniger, M. Shimada, R.A. Winchurch, T.G. Buchman, and J.L. Robotham (1993). **Regulation of acute phase gene expression following surgery and endotoxin administration in the anesthetized pig.** *Anesthesiology* 79: 1324-1337.

Markham, L. (1968). **Replacement of prolapsed uterus in a sow.** *The Veterinary Record* 82: 605-606.
NAL call number: 41.8 V641

Marusch, F., A. Koch, and J. Kluge (1999). **Minimally invasive concepts in esophagealsurgery--thoracoscopic anastomosis. An animal experiment study. [Minimal-invasive Konzepte in der Osophaguschirurgie--thorakoskopische Anastomosierung. Eine tierexperimentelle Studie.]** *Zentralblatt fur Chirurgie* 124(1): 63-67.

Massoud, T.F., C. Ji, G. Guglielmi, F. Vinuela, and J. Robert (1994). **Experimental models of bifurcation and terminal aneurysms: construction techniques in swine.** *American Journal of Neuroradiology* 15(5): 938-944.

Massoud, T.F., F. Turjman, C. Ji, F. Vinuela, G. Guglielmi, Y.P. Gobin, and G.R. Duckwiller (1995). **Endovascular treatment of fusiform aneurysms with stents and coils: Technical feasibility in a swine model.** *American Journal of Neuroradiology* 16(10): 1953-1963.

Maurer, C.A., K. Z'graggen, W. Zimmermann, H.J. Hani, D. Mettler, and M.W. Buchler (Nov. 1999). **Experimental study of neorectal physiology after formation of a transverse coloplasty pouch.** *British Journal of Surgery* 86(11): 1451-1458.

Mayer, B. and L. Kaemp (March 1996). **Free microsurgical superior musculocutaneous trapezius flap of the swine: an ideal training model for microvascular reconstructions and in vitro model for experimental microsurgery. [Der freie mikrochirurgische obere muskulokutane Trapezius-Lappen des Schweines: Ein ideales Trainingsmodell fur mikrovaskulare Rekonstruktionen und ein In-vitro-Modell fur die experimentelle**

Mikrochirurgie.] *Laryngorhinootologie* 75(3): 175-177.

Mayo, M.B. and H.N. Becker (1982). **Unilateral castration to correct a peritesticular hematoma in a boar.** *Veterinary Medicine. Small Animal Clinician* 77(3): 449-451.
NAL call number: 41.8 M69

Mbiuki, S.M. (1982). **Mammectomy for treatment of chronic mastitis in sows.** *Veterinary Medicine. Small Animal Clinician* 77(10): 1516-1517.
NAL call number: 41.8 M69

Mehran, R.J., M.A. Ricci, A.M. Graham, K. Carter, and J.F. Smyes (1991). **Porcine model for vascular graft studies.** *Journal of Investigative Surgery* 4(1): 37-44.

Mizrahi, S.S., J.W. Jones, and F.R. Bentley (1996). **A facilitated technique for hepatectomy of porcine liver.** *Journal of Investigative Surgery* 9(4): 393-398.

National Institutes of Health (1985). ***Guidelines for Blood-material Interactions*,** Report of the National Heart, Lung and Blood Institute Working Group. Bethesda, MD: US Department of Health and Human Services, Public Health Services, NIH Publication 85-2185.

Nicolau, D.P., Y.J. Feng, A.H.B. Wu, S.P. Bernstein, and C.H. Nightingale (1996). **Swine model of continuous arteriovenous hemofiltration.** *Laboratory Animal Science* 46(3): 355-357.
NAL call number: 410.9 P94

North, A.F. (1988). **Oral and maxillofacial surgery.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 173-203.
NAL call number: RB125 E9

Pae, W.E. Jr., J.L. Myers, J.A. Waldhausen, G.A. Prophet, and W.S. Pierce (1981). **Subclavian flap angioplasty. Experimental study in growing piglets.** *Journal of Thoracic and Cardiovascular Surgery* 82(6): 922-927.

Randall, G.C.B. (1986). **Chronic implantations of catheters and other surgical techniques in fetal pigs.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 2, NY:Plenum Press, pp. 1179-1186.
NAL call number: RB125.C68 1985

Randsbaek, F., C.J. Riordan, J.H. Storey, W.D. Montgomery, W.P. Santamore, and E.H. Austin III. (1996). **Animal model of the univentricular heart and single ventricular physiology.** *Journal of Investigative Surgery* 9(4): 375-384.

Ricci, M.A., R. Mehran, N.V. Christou, F. Mohamed, A.M. Graham, and J.F. Smyes (1991). **Species differences in the clearance of *Staphyococcus aureus* bacteremia.** *Journal of Investigative Surgery* 4(1): 53-58.

Ricci, M.A., R.J. Mehran, D. Petsikas, F. Mohamed, R. Guidoin, Y. Marois, N.V. Christou, A. Graham, and J.F. Symes (1991). **Species differences in the infectability of vascular grafts.** *Investigative Surgery* 4(1): 45-52.

Rosenkrantz, J.G., R.C. Simon, and J.H. Carlisle (1968). **Fetal surgery in the pig with a review of other mammalian fetal techniques.** *Journal of Pediatric Surgery* 3(3): 392-397.

Rosenquist, J.B., K. Rosenquist, and G. Sund (1982). **Effects of bone grafing on maxillary bone healing in the growing pig.** *Journal of Oral and Maxillofacial Surgery* 40(9): 566-569.

Russell, J.M., R.T. Webb, and W.H. Boyce (1981). **Intrarenal surgery. Animal model I.** *Investigative Urology* 19(2): 123-125.

Sarr, M.G. (1988). **Pancreas.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 204-216.

NAL call number: RB125 E9

Sasaki, G.H., and C.Y. Pang (1984). **Pathophysiology of skin flaps raised on expanded pig skin.** *Plastic and Reconstructive Surgery* 74(1): 59-67.

Scambler, J.D. (1968). **Replacement of prolapsed uterus in a sow.** *The Veterinary Record* 82: 71-75.
NAL call number: 41.8 V641

Shimokawa, S., H. Matsumoto, S. Ogata, T. Komokata, S. Nishida, T. Ushijima, H. Saigenji, Y. Moriyama, and A. Taira (1996). **A new experimental model for simultaneous evaluation of aortic and pulmonary allograft performance in a composite graft.** *Journal of Investigative Surgery* 9(5): 487-493.

Sims, C.D., P.E.M. Butler, R. Casanova, M.A. Randolph, and M.J. Yaremchuk (1997). **Prolonged general anesthesia for experimental craniofacial surgery in fetal swine.** *Journal of Investigative Surgery* 10(1-2): 53-57.

Smith, A.C. and M.M. Swindle (1994). **Post surgical care.** In: *Research Animal Anesthesia, Analgesia and Surgery*, A.C. Smith and M.M. Swindle (eds.), Greenbelt, MD: SCAW, pp. 167-170.
NAL call number: SF914 R49 1994

Stump, K.C., M.M. Swindle, C.D. Saudek, and J.D. Strandberg (1988). **Pancreatectomized swine as a model of diabetes mellitus.** *Laboratory Animal Science* 38(4): 439-443.
NAL call number: 410.9 P94

Swindle, M.M. (1984). ***Basic Surgical Exercises Using Swine***, New York, NY: Praeger Press, 237p.
NAL call number: RD29.5 S94S94

Swindle, M.M. (1998). ***Surgery, Anesthesia and Experimental Techniques in Swine***, Iowa State University Press, Ames, IA, 329p.
NAL call number: RD29.5.S94S944 1998.

Swindle, M.M. (1986). **Swine as models in thoracic surgery.** In: *Proceedings of the 2nd annual meeting of the Academy of Surgical Research* D.L. Powers (ed.), Clemson, SC: Clemson University Press, pp. 106-108.

Swindle, M.M., P.J. Horneffer, T.J. Gardner, V.L. Gott, T.S. Hall, R.S. Stuart, W.A. Baumgartner, A.M. Borkon, E. Galloway, and B.A. Reitz (1986). **Anatomic and anesthetic considerations in experimental cardiopulmonary surgery in swine.** *Laboratory Animal Science* 36(4): 357-361.
NAL call number: 410.9 P94

Swindle, M.M., A.C. Smith, and J.A. Goodrich (1998). **Chronic cannulation and fistuation procedures in swine: a review and recommendations.** *Journal of Investigative Surgery* 11: 7-20.

Swindle, M.M., A.C. Smith, and B.J.S. Hepburn (1988). **Swine as models in experimental surgery.** *Journal of Investigative Surgery* 1(1): 65-79.

Swindle, M.M., D.B. Wiest. S.S. Garner, A.C. Smith, and P.C. Gillette (1996). **Pregnant Yucatan miniature swine as a model for investigating fetal drug therapy.** In: *Advances in Swine in Biomedical Research*, M.E. Tumbleson and L.B. Schook (eds.), Vol. 2, NY: Plenum Press, pp. 629-635.
NAL call number: RB125.A36 1996

Swindle, M.M., D.B. Wiest, A.C. Smith, S.S. Garner, C.C. Case, R.P. Thompson, D.A. Fyfe, and P.C. Gillette (1996). **Fetal surgical protocols in Yucatan miniature swine.** *Laboratory Animal Science* 46(1): 90-95.
NAL call number: 410.9 P94

Terblanche, J. and R. Van Horn-Hickman (1978). **The prevention of gastric ulceration by highly selective vagotomy in a new peptic ulcer experimental model, the bile duct-ligated pig.** *Surgery* 84(2): 206-211.

Tong, S.W., S. Ingenito, J.E. Anderson, N. Gootman, A.L. Sica, and P.M. Gootman (1995). **Development of a swine animal model for the study of sudden infant death syndrome.** *Laboratory Animal Science* 45(4): 398-403.
NAL call number: 410.9 P94

Tscholl, R. (1978). **Urinary diversion.** *Urolological Research* 6(1): 59-63

Turjman, F., T.F. Massoud, C. Ji, G. Guglielmi, F. Vinuela, and J. Robert (1994). **Combined stent implantation and endosaccular coil placement for treatment of experimental wide-necked aneurysms: A feasibility study in swine.** *American Journal of Neuroradiology* 15(6): 1087-1090.

Turner, A.S. and C.W. Mcllwraith (1982). ***Techniques in Large Animal Surgery.*** Philadelphia, PA: Lea and Febiger, 333p.
NAL call number: SF911.T87

van den Broek, T.A., J.A. Rauwerda, and C.F. Kuijper (1991). **Construction of peritoneal venous valves: an experimental study in rats and piglets.** *Journal of Surgical Research* 50: 279-283.

Vollmar, B., A. Olinger, U. Hildebrandt, and M.D. Menger (June 1999). **Cardiopulmonary dysfunction during minimally invasive thoraco-lumboendoscopic spine surgery.** *Anesthesia and Analgesia* 88(6): 1244-1251.

Vonderfecht, H.E. (1978). **Amputation of rectal prolapse in pigs.** *Veterinary Medicine. Small Animal Clinician* 73(2): 201-206.
NAL call number: 41.8 M69

Von Recum, A.F. (1998). ***Handbook of Biomaterials Evaluation: Scientific, Technical, and Clinical Testing of Implant Materials***, 2nd ed., Hemisphere Publishing, 700p., ISBN: 1-56032-479-1

Windberger, U., H. Siegl, R. Woisetschlager, P. Schrenk, B. Podesser, and U. Losert (1994). **Hemodynamic changes during prolonged laparoscopic surgery.** *European Surgical Research* 26: 1-9.

Wittnich, C., M.P. Belanger, B.S. Oh, and T.A. Salerno (1991). **Surgical model of volume overload-induced ventricular myocardial hypertrophy to study a clinical problem in humans.** *Journal of Investigative Surgery* 4(3): 333-338.

TRANSPLANTATION

Baumgartner, W.A., R.J. Kirkman, L.R., Pennington, T.J. Pritchard, M.G. Sarr, and G.M. Williams (1988). **Organ transplantation.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 284-299.
NAL call number: RB125 E9

Calne, R.Y., T.A. English, D.C. Dunn, P. McMaster, D.C. Wilkins, and B.M. Herbertson (1976). **Orthotopic heart transplantation in the pig. The pattern of rejection.** *Transplantation Proceedings* 8(1): 27-30.

Calne, R.Y., K. Rolles, D.J. White, D.P. Smith, and B.M. Herbetson (1978). **Prolonged survival of pig orthotopic heart grafts treated with cyclosporin A.** *Lancet* 1(8075): 1183-1185.

Calne, R.Y., H.J.O. White, and D.E. Yoffa (1967). **Observations of orthotopic liver transplantation in the pig.** *British Medical Journal* 2(1): 478.

Clark S.C., C.D.Sudarshan, and R. Khanna (1999). **A new porcine model of reperfusion injury after lung transplantation.** *Laboratory Animals* 33(2): 135-142.

NAL call number: QL55.A1L3

Cramer, D.V. and L. Makowka (1994). **The use of xenografts in experimental transplantation.** In: *Handbook of Animal Models in Transplantation Research*, D.V. Cramer, L.G. Posesta, and L. Makowka (eds.), Boca Raton, FL: CRC Press, 299-310.
NAL call number: RD120.7 H36 1994

Dent, D.M., R. Hickman, C.J. Uys, S. Saunders, and J. Terblanche (1971). **Natural history of liver allo and auto transplantation in the pig.** *British Journal of Surgery* 58(6): 407-413.

Eisele, P.H., E.S. Woodle, G.C. Hunter, L. Talken, and R.E. Ward (1986). **Anesthetic, preoperative and postoperative considerations for liver transplantation in swine.** *Laboratory Animal Science* 36(4): 402-405.
NAL call number: 410.9 P94

Fiane, A.E., V. Videm, A. Foerster, T. Scholz, T.H. Perdersen, et al. (1998). **An ex vivo perfusion model to evaluate hyperacute rejection in a discordant pig-to-human combination.** *European Surgical Research* 30(5): 341-351.

Fiane, A.E., V. Videm, H.T. Johansen, O.J. Mellbye, E.W. Nielsen, and T.E. Mollnes (May 1999). **C1-inhibitor attenuates hyperacute rejection and inhibits complement, leukocyte and platelet activation in an ex vivo pig-to-human perfusion model.** *Immunopharmacology* 42 (1-3): 231-243.

Flye, M.W. (1992). **Orthotopic liver transplantation in outbread and partially inbred swine.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 44-56.
NAL call number: RB125.S79 1992

Fuchimoto, Y., K. Yamada, A. Shimizu, A. Yasumoto, T. Sawada, C.H. Huang, and D.H. Sachs (May 1999). **Relationship between chimerism and tolerance in a kidney transplantation model.** *Journal of Immunology* 162(10): 5704-5711.

Greco, R., J. Benito, M. Gonzalez, E. De Miguel, and J. Vazquez (Feb. 1999). **Lung transplantation from ventilated non-heart-beating donors: experimental study in a neonatal swine model.** *Journal of Pediatric Surgery* 34(2): 360-366.

Hall, T.S., M. Borkon, W.A. Baumgartner, R. Scott Stuart, M.M. Swindle, E. Galloway, and B.A. Reitz (1986). **Use of swine in heart transplantation research.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, p. 373-376.
NAL call number: RB125.C68 1985

Harjula, A. and J.C. Baldwin (1987). **Lung transplantation in the pig with successful preservation using prostaglandin E-1.** *Applied Cardiology* 2: 397.

Hickman, R., W.A. van Hoorn, and J. Terblanche (1971). **Exchange transplantation of the liver in the pig.** *Transplantation* 24: 237.

Howard, T., C.A. Cosenza, D.V. Cramer, and L. Makowka (1994). **Kidney transplantation in Yucatan miniature swine.** In: *Handbook of Animal Models in Transplantation Research*, D.V. Cramer, L. Podesta, and L. Makowka (eds.), Boca Raton: CRC Press, pp. 19-28.
NAL call number: RD120.7 H36 1994

Kahn, D., R. Hickman, H. Pienaar, et al. (1994). **Liver transplantation in the pig.** In: *Handbook of Animal Models in Transplantation Research*, D.V. Cramer, L. Podesta, and L. Makowka (eds.), Boca Raton, FL: CRC Press, pp. 75-86.
NAL call number: RD120.7 H36 1994

Kirkman, R.I., R.B. Colvin, M.W. Flye, G.S. Leight, S.A. Rosenberg, and G.M. Williams. (1979). **Transplantation in miniature swine: VI. Factors influencing survival of renal allografts.** *Transplantation* 28(1): 18-23.

Klima, U., J.L. Guerrero, R.A. Levine, and G.J. Vlahakes (1997). **A new, biventricular working heterotopic heart transplant model: Anatomic and physiologic considerations.** *Transplantation* 64(2): 215-222.

Lee, W.P., J.P. Rubin, S. Cober, F. Ierino, M.A. Randolph, and D.H. Sachs (Sept. 1998). **Use of swine model in transplantation of vascularized skeletal tissue allografts.** *Transplantation Proceedings* 30(6): 2743-2745.

Mullen, Y., Y. Taura, M. Nagata, K. Miyazawa, and E. Stein (1992). **Swine as a model for pancreatic beta-cell transplantation.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 16-34.
NAL call number: RB125.S79 1992

Nunley, D.C., E. Marrotte, D. Sterner, D.S. Shapiro, and R.T. Schweizer (Feb.-Mar. 1999). **Effects of leukocyte depleted blood on renal reperfusion injury in a porcine model.** *Transplantation Proceedings* 31(1-2): 1051.

Oldhafer, K.J., J. Hauss, G. Gubernatis, R. Pichlmayr, and H.U. Spiegel (1993). **Liver transplantation in pigs: A model for studying reperfusion injury.** *Journal of Investigative Surgery* 6(5): 439-450.

Papalois, A., V. Smyrniotis, L. Papadimitriou, and G. Kostopanagiotou (1999). **Isolated pancreatic graft of swine: Development of a model for drug studies.** *Transplantation Proceedings* 31(7): 2768-2771.

Pennington, L. and M.G. Sarr (1988). **Pancreas transplantation.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 296-297.
NAL call number: RB125 E9

Pennington, L.R. (1992). **Renal transplantation in swine.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 35-43.
NAL call number: RB125.S79 1992

Pennington, L. and M.G. Sarr (1988). **Liver transplantation.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 294-295.
NAL call number: RB125 E9

Pirenne, J. (Apr-Jun 1999). **Contribution of large animal models to the development of clinical intestinal transplantation.** *Acta Gastroenterologica Belgica* 62(2): 221-225.

Podesta, L., D.V. Cramer, L. Makowka, and M. Nores (1994). **Multivisceral transplantation in the pig.** In: *Handbook of Animal Models in Transplantation Research*, D.V. Cramer, L. Podesta, and L. Makowka (eds.), pp. 231-242.
NAL call number: RD120.7 H36 1994

Pritchard, T.J. and R.L. Kirkman (1988). **Transplantation of the gastrointestinal tract: small intestine.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 291-293.
NAL call number: RB125 E9

Pritchard, T.J., W.A. Kottun, and R.L. Kirkman (1986). **Technical aspects of small intestinal transplantation in young pigs.** In: *Swine in Biomedical Research*, M.E. Tumbleson (ed.), Vol. 1, NY: Plenum Publishers, pp. 391-398.
NAL call number: RB125.C68 1985

Procaccini, E., R. Ruggiero, R. Rea, G. Boccia, G. Varletta, and C. Saccone (1994). **Segmental liver transplantation. Experimental studies in swine.** *Annali Italiani Di Chirurgia* 65(1): 125-129.

Qayumi, A.K., D.V. Godin, W.R. Jamieson, K.M. Ko, and A. Poostizadeh (1993). **Correlation of red cell antioxidant status and heart-lung function in swine pretreated with allopurinol (a model of heart-lung transplantation).**

Transplantation 56(1): 37-43.

Qayumi, A.K., W.R. Jamieson, D.M. Godin, S. Lam, K.M. Ko, E. Germann, and J. VandenBroek (1990). **Response to allopurinol pretreatment in a swine model of heart-lung transplantation.** *Journal of Investigative Surgery* 3(4): 331-340.

Qayumi, A.K., W.R.E. Jamieson, A. Poostizadeh, E. German, and K.D. Gillespie (1992). **Comparison of new iron chelating agents in the prevention of ischemia/reperfusion injury: A swine model of heart-lung transplantation.** *Journal of Investigative Surgery* 5(2): 115-128.

Qayumi, A.K., W.R. Jamieson, L.J. Rosado, D.M. Lyster, M. Schulzer, B. McConville, K.D. Gillespie, and M.P. Hudson (1991). **Comparison of functional and metabolic assessments in preservation techniques for heart transplantation.** *Journal of Investigative Surgery* 4(1): 93-102.

Raofi, V., M.J. Fontaine, M.L. Mihalov, et al. (July 1999). **Comparison of jejunal and ileal surveillance biopsies in a porcine model of intestinal transplantation.** *Transplantation* 68(2): 188-191.

Ricour, C., Revillon, Y., Arnaud-Battandier F., D. Ghnassia, P. Weyne, A. Lauffenburger, J. Jos, J.L. Fontaine, P. Gallix, and M. Vaiman (1983). **Successful small bowel allografts in piglets using cyclosporine.** *Transplantation Proceedings* 15(Suppls. 1-2): 3019-3026.

Sachs, D.H. (1992). **MHC-homozygous miniature swine.** In: *Swine as Models in Biomedical Research*, M.M. Swindle (ed.), Ames, IA: Iowa State University Press, pp. 3-15.
NAL call number: RB125.S79 1992

Salminen, U.S., H. Alho, E. Taskinen, P. Maasilta, T. Ikonen, and A.L. Harjula (Aug. 1998). **Effects of rapamycin analogue SDZ RAD on obliterative lesions in a porcine heterotopic bronchial allograft model.** *Transplantation Proceedings* 30(5): 2204-2205.

Salminen, U.S., T. Ikonen, M. Uusitalo, et al. (1998). **Obliterative lesions in small airways in an immunosuppressed porcine heterotopic bronchial allograft model.** *Transplant International* 11(Suppl. 1): S515-S518.

Sasaki, N. K. Yoneda, C. Bigger, J. Brown, and Y. Mullen (1984). **Fetal pancreas transplantation in miniature swine. Developmental characteristics of fetal pig pancreases.** *Transplantation* 38(4): 335-340.

Schon, M.R., N. Akkoc, W. Heil, et al. (1999). **Determination of alpha-glutathione-S-transferase concentration for assessment of hepatocellular ischemic damage compared to GOT, GPT and LDH in a liver transplantation model. [Die Bestimmung der alpha-Glutathion-S-Transferase-Konzentration zur Beurteilung hepatozellularer Ischamieschaden im Vergleich zu GOT, GPT und LDH im Lebertransplantationsmodell.]** *Laboratoriums Medizin* 23(4): 218-226.

Spada, M., M. Alessiani, M. Bonfichi, A. Viezzoli, A. Pileggi, F. Abbiati, et al. (Sept. 1998). **Development of a model of combined bone marrow and small bowel transplantation in swine.** *Transplantation Proceedings* 30(6): 2609-2610.

Storck, M., D. Abendroth, R. Prestel, G. Pino-Chavez, J. Muller-Hoker, D.J. White, and C. Hammer (1997). **Morphology of hDAF (CD55) transgenic pig kidneys following ex-vivo hemoperfusion with human blood.** *Transplantation* 63(2): 304-310.

Stump, K.C., L.R. Pennington, J.F. Burdick, T. Hoshino, and M.M. Swindle (1986). **Practical anesthesia for orthotopic liver transplantation in swine.** In: *Proceedings of the 2nd annual meeting of the Academy of Surgical Research,* D.L. Powers (ed.), Clemson, SC: Clemson University Press, pp. 10-12.

Taniguchi, H., Y. Takada, K. Fukunaga, K. Yuzawa, et al. (1998). **Establishment of a swine model for auxiliary partial orthotopic liver transplantation.** *Transplantation Proceedings* 30(7): 3232-3236.

Terblanche J., J.H. Peacock, K.E. Hobbs, A.C. Hunt, J. Bowes, and E.J. Tierris (1967). **Orthotopic liver homotransplantation: experimental study in the unmodified pig.** *South African Medical Journal* 42(20): 486-497.

Vaishali, B., and A. Hunter Daniel (1998). **Regeneration through long nerve grafts in the swine model.** *Microsurgery* 18(6): 379-382.

White, D. and J. Lunney (1979). **Transplantation in pigs.** *Transplantation Proceedings* 11(1): 1170-1173.

Williams, G.M. (1988). **Renal transplantation.** In: *Experimental Surgery and Physiology: Induced Animal Models of Human Disease*, M.M. Swindle and R.J. Adams (eds.), Baltimore, MD: Williams and Wilkins, pp. 298-299.
NAL call number: RB125 E9

Yamada, K., J.K. Choo, J.S. Allan, et al. (Aug. 1999). **The effect of thymectomy on tolerance induction and cardiac allograft vasculopathy in a miniature swine heart/kidney transplantation model.** *Transplantation* 68(4): 485-491.

Yamada, K., F.L. Ierino, and P.R. Gianello (April 1999). **Role of the thymus in transplantation tolerance in miniature swine. III. Surgical manipulation of the thymus interferes with stable induction of tolerance to class I-mismatched renal allografts.** *Transplantation* 67(8): 1112-1119.

Zaidi, A., F. Bhatti, M. Schmoeckel, E. Cozzi, G. Chavez, J. Wallwork, D. White, and P. Friend (1998). **Kidneys from HDAF transgenic pigs are physiologically compatible with primates.** *Transplantation Proceedings* 30(5): 2465-2466.

Zdichavsky, M., J.W. Jones, T. Ustuner, et al. (July 1999). **Scoring of skin rejection in a swine composite tissue allograft model.** *Journal of Surgical Research* 85(1): 1-8.

Zdichavsky, M., J.W. Jones, T. Ustuner, et al. (Jan. 1999). **Assessment of skin rejection in composite tissue allografts (CTA) by a histologic grading system in a swine model.** *Modern Pathology* 12(1): 65A.

XENOGRAFIC TRANSPLANT

Adham, M., S. Peyrol, M. Vernet, C. Bonnefont, C. Barakat, D. Rigal, M. Chevallier, I. Berger, M. Raccurt, C. Ducerf, J. Baulieux, and M. Pouyet (1996). **Functional and immunological study of isolated liver xenoperfusion.** *Transplantation Proceedings* 28(5): 2852-2853.

Argibay, P., J. Vazquez, P. Barros, D. Verge, F. Nunez, H. Garcia, J. Pekolj, and E. De Santibanes (1996). **Extracorporeal auxiliary xenoperfusion: animal model of support in fulminant liver failure.** *Transplantation Proceedings* 28(2): 749-750.

Bals, R., D.J. Weiner, R.L. Meegalla, and J.M. Wilson (April 1999). **Transfer of a cathelicidin peptide antibiotic gene restores bacterial killing in a cystic fibrosis xenograft model.** *Journal of Clinical Investigation* 103(8): 1113-1117.

Baquerizo, A., A. Mhoyan, M. Kearns-Jonker, et al. (Jan. 1999)**. Characterization of human xenoreactive antibodies in liver failure patients exposed to pig hepatocytes after bioartificial liver treatment: an ex vivo model of pig to human xenotransplantation.** *Transplantation* 67(1): 5-18.

Benda, B., J.O. Sandberg, M. Holstad, and O. Korsgren (Aug. 1998). **T cells in islet-like cell cluster xenograft rejection: a study in the pig-to-mouse model.** *Transplantation* 66(4): 435-440.

Berns, T., T.H. Quang, J. Althoff, et al. (Jan. 1999). **Animal model of experimentally induced ectopic enchondral ossification in nude mice with xenograft of porcine epiphyseal cartilage.** *Journal of Molecular Medicine* 77(1): 165-

168.

Blum, M.G., B.J. Collins, A.C. Chang, J.P. Zhang, et al. (Feb. 1998). **Complement inhibition by FUT-175 and K76-COOH in a pig-to-human lung xenotransplant model.** *Xenotransplantation* 5(1): 35-43.

Breimer, M.E., C.T. Svalander, B. Haraldsson, and S. Bjorck (June 1996). **Physiological and histological characterisation of a pig kidney in vitro perfusion model for xenotransplantation studies.** *Scandinavian Journal of Urology and Nephrology* 30(3): 213-221.

Brenner, P., M. Hinz, H. Huber, A. Rucker (1999). **Column adsorption of xenoreactive natural antibodies and complement components prevents hyperacute xenograft rejection in a working heart perfusion model of pig hearts. [Saulenadsorption von Immunglobulinen Und Komplementfaktoren Verhindert Die Hyperakute, Xenogene Abstossungsreaktion Im Working Heart Perfusionsmodell von Schweineherzen.]** *Transplantationsmedizin: Organ der Deutschen Transplantationsgesellschaft* 11(3): 153-166.

Brenner, P., M. Hinz, H. Huber, M. Schmoeckel, et al. (May 1999). **The influence of antibody and complement removal with a Ig-Therasorb column in a xenogeneic working heart model.** *European Journal of Cardiothoracic Surgery* 15(5): 672-679.

Cooper, D.K.C., Y. Ye, L.L. Rolf, Jr., and N. Zuhdi (1991). **The pig as a potential organ donor for man.** In: *Xeno-transplantation: The Transplantation of Organs and Tissues Between Species*, D.C.K. Cooper, E. Kemp, K. Reemtsma, and D.J.G. White (eds.), Berlin: Springer, pp. 481-500.

Cramer, D.V. and L. Makowka (1994). **The use of xenografts in experimental transplantation.** In: *Handbook of Animal Models in Transplantation Research*, D.V. Cramer, L.G. Posesta, and L. Makowka (eds.), Boca Raton, FL: CRC Press, pp. 299-310.
NAL call number: RD120.7 H36 1994

Cruzado, J.M., J. Torras, M. Riera, N. Lloberas (July 1998). **Effect of a platelet-activating factor (PAF) receptor antagonist on hyperacute xenograft rejection; evaluation in a pig kidney-human blood xenoperfusion model.** *Clinical and Experimental Immunology* 113(1): 136-144.

Fiane, A.E., V. Videm, T.E. Mollnes, K. Hogasen, T. Hovig (1999). **Inhibition of platelet aggregation by the GPIIb/IIIa antagonist Reopro does not significantly prolong xenograft survival in an ex vivo model.** *Transplant International* 12(5): 323-333.

Fishman, J., D. Sachs, and R. Shaikh (1998). ***Xenotransplantation: scientific frontiers and public policy.*** New York, NY: New York Academy of Sciences, 251p.
NAL call number: 500 N484 v.862

Fuchimoto, Y., K. Yamada, A. Shimizu, A. Yasumoto, et al. (May 1999). **Relationship between chimerism and tolerance in a kidney transplantation model.** *Journal of Immunology* 162(10): 5704-5711.

Grinyo, J.M., J.M. Cruzado, and J. Torras (Feb-Mar 1999). **Hyperacute rejection models: ex vivo xenoperfusion systems.** *Transplantation Proceedings* 31(1-2): 970-971.

Gullotto, C., C. Daggett, W. Casey, J. Platt, and R. Davis (Oct. 1997). **Physiologic considerations in swine-to-primate pulmonary xenotransplantation.** *Circulation* 96(8 Suppl.): I565-I566.

Hammer, C. (1998). **Physiological obstacles after xenotransplantation.** *Annals of the New York Academy of Sciences* 862: 19-27.
NAL call number: 500 N484

Institute of Medicine (1996). **Xenotransplantation: Swine.** *Ethics and Public Policy*, Washington, DC: National Academy Press.

Kalter, S.S. and R.L. Heberling (1995). **Xenotransplantation and infectious diseases.** *ILAR Journal* 5(37): 31-37.

Kaufman, C.L., B.A. Gaines, and S.T. Ildstad (1995). **Xenotransplantation.** *Annual Review of Immunology* 13: 339-367.

Kerr, S.R., A.P. Dalmasso, E.V. Apasova, S.S. Chen, M. Kirschfink, and A.J. Matas (Feb. 1999). **Mouse-to-rabbit xenotransplantation: A new small animal model of hyperacute rejection mediated by the classical complement pathway.** *Transplantation* 67(3): 360-365.

Lin, S.S. and J.L. Platt (1996). **Immunologic advances towards clinical xenotransplantation.** In: *Advances in Swine in Biomedical Research*, M.E. Tumbleson and L.B. Schook (eds.), Vol. 1, NY: Plenum Press, pp. 147-162.
NAL call number: RB125.A36 1996

Macchiarini, P., R. Oriol, A. Azimzadeh, V. De Montpreville, et al. (1999). **Characterization of a pig-to-goat orthotopic lung xenotransplantation model to study beyond hyperacute rejection.** *Journal of Thoracic and Cardiovascular Surgery* 118(5): 805-814.

Matthews, P.J. and G.W. Beran (1996). **Assessment of public health aspects of porcine xenotransplantation.** In: *Advances in Swine in Biomedical Research* , M.E. Tumbleson and L.B. Schook (eds.), Vol. 1, NY: Plenum Press, pp. 163-170.
NAL call number: RB125.A36 1996

Meyer, C., P. Wolf, N. Romain, C. Ravanat, et al. (Jan. 1999). **Use of von Willebrand diseased kidney as donor in a pig-to-primate model of xenotransplantation.** *Transplantation* 67(1): 38-45.

Michaels, M.G., J.P. McMichael, K. Bransky, S. Kalter, R.L. Peters, T.E. Starzl, R.L. Simmons. 1994. **Screening donors for xenotransplantation: the potential for xeonozoonoses.** *Transplantation* 57(10): 1462-1465.

Michaels, M.G., and R.L. Simmnons (1994). **Xenotransplant-associated zoonoses: strategies for prevention.** *Transplantation* 57(1): 1-7.

Munitiz, V., P. Ramirez, Q. Hernandez, M. Loba, et al. (1999). **Hematologic and hepatic function profile comparison between pig and baboon in an orthotopic liver xenotransplantation model.** *Transplantation Proceedings* 31(6): 2641-2642.

Nishida, S., T. Komokata, S. Ogata, A. Ikoma, et al. (1998). **Small bowel rejection in isolated small bowel transplantation and in multivisceral transplantation: A comparative study in a large animal model.** *In Vivo* 12(2): 259-266.

Norman, J.C., C.A. Saravis, M.E. Brown, and W.V. McDermott, Jr. (1966). **Immunochemical observations in clinical heterologous (xenogeneic) liver perfusions.** *Surgery* 60(1): 179-190.

Pinkert, C.A. (1994). **Transgenic porcine livers reduce liberation of humoral mediators during xenoperfusion with human blood.** *Transplantation Proceedings* 28(2): 772-774.

Prentice, E.D., I.J. Fox, R.S. Dixon, D.L. Antonson, and T.A. Lawson (1994). **History, donor considerations and ethics of xenotransplantation.** In: *Research Animal Anesthesia, Analgesia and Surgery*, A.C. Smith and M.M. Swindle (eds.), pp. 25-36.

Public Health Service. **1996 Draft Public Health Service Guideline on Infectious Disease Issues in Xenotransplantation.** *Federal Register* 61(185): 49920-49932.

Pursel, V.G., M.B. Solomon, and R.J. Wall (1996). **Genetic engineering of swine.** In: *Advances in Swine in Biomedical Research*, M.E. Tumbleson and L.B. Schook (eds.), Vol. 1, NY: Plenum Press, pp. 189-206.
NAL call number: RB125.A36 1996

Ramirez, P., R. Chavez, M. Majado, et al. (1999). **Study of xenograft rejection in a model of liver xenotransplantation from unmodified pig to primate.** *Transplantation Proceedings* 31(7): 2814-2817.

Robson, S.C., V.K. Young, N.S. Cook, R. Mettrernich, W. Kasper-Konig, B.A. Lesnikoski, R.N. Pierson III, W.W. Hancock, D. Candinas, D.J. White, and F.H. Bach (1996). **Thrombin inhibitionin an ex vivo model of porcine heart xenograft hyperacute rejection.** *Transplantation* 61(6): 862-8.

Song, Z., L. Wennberg, W. Bennet, B. Sundberg, C.G. Groth, and O. Korsgren (Feb-Mar 1999). **FK 506 prevents islet xenograft rejection: a study in the pig-to-rat model.** *Transplantation Proceedings* 31(1-2): 981.

Storck, M., D. Abendroth, R. Prestel, G. Pino-Chavez, J. Muller-Hoker, D.J. White, and C. Hammer (1997). **Morphology of hDAF CD55 transgenic pig kidneys following ex-vivo hemoperfusion with human blood.** *Transplantation* 63: 304-310.

Swindle, M.M. (1998). **Considerations in xenografic and transgenic technologies.** In: *Surgery, Anesthesia and Experimental Techniques in Swine*, Ames, IA: Iowa State University Press, pp. 283-290.
NAL call number: RD29.5.S94S944 1998

Swindle, M.M. (1998). **Defining appropriate health status and management programs for specific-pathogen-free swine for xenotransplantation.** *Annals of the New York Academy of Sciences* 862: 111-120.
NAL call number: 500 N484

Swindle, M.M. (1996). **Considerations of specific pathogen free swine (SPF) in xenotransplantation.** *Journal of Investigative Surgery* 9(3): 267-271

Tector, A.J., J.A. Fridell, T. Watanabe, R.D. Forbes (Feb. 1998). **Pulmonary injury in recipients of discordant hepatic and renal xenografts in the dog-to-pig model.** *Xenotransplantation* 5(1): 44-49.

Terajima, H., Y. Shirakata, T. Yagi, S. Mashima, H. Shinohara, S. Satoh, Y. Arima, T. Gomi, T. Hirose, I. Ikai, T. Morimoto, T. Inamoto, and Y. Yamaoka (1996). **Long-duration xenogeneic extracorporeal pig liver perfusion with human blood.** *Transplant International* 9(Suppl.1): S388-391.

Terajima, H., Y. Shirakata, T. Yagi, S. Mashima, H. Shiohara, S. Satoh, Y. Arima, T. Gomi, T. Hirose, R. Takahashi, I. Ikai, T. Morimoto, T. Inamoto, M. Yamamoto, and Y. Yamaoka. (1997). **Successful long-term xenoperfusion of the pig liver: continuous administration of prostaglandin E1 and insulin.** *Transplantation* 63(4): 507-512.

Travis, D.L., A.W. Paulsen, and Y. Genyk (1996). **Development of an in situ isolated porcine liver perfusion model for tightly controlled physiologic and pharmacologic studies.** *Journal of Investigative Surgery* 9(2): 131-147.

Weber, C.J., S. Safley, M. Hagler, and J. Kapp (June 1999). **Evaluation of graft-host response for various tissue sources and animal models.** *Annals of the New York Academy of Sciences* 875: 233-254.
NAL call number: 500 N484

Wu, A., N.F. Esnaola, K. Yamada, et. al. (Feb-Mar. 1999). **Xenogeneic thymic transplantation in a pig-to-nonhuman primate model.** *Transplantation Proceedings* 31(1-2): 957.

Xu, H., S.R. Gundry, W.W. Hancock, G. Matsumiya, et al. (June 1998). **Prolonged discordant xenograft survival and delayed xenograft rejection in a pig-to-baboon orthotopic cardiac xenograft model.** *Journal of Thoracic and Cardiovascular Surgery* 115(6): 1342-1349.

Ye, Y., M. Niekrasz, R. Welsh, S. Kosanke, C. Maxwell, N. Zuhdi, and D.K. Cooper (1994). **A practical study of zoonoses that could complicate pig-to-man organ transplantation.** *Transplantation Proceedings* 26(3): 1312.

Ye, Y., S. Niekrasz, R. Kosanke, R. Welsh, H.E. Jordon, F.C. Fox, W.C. Edwards, C. Maxwell, and D.K. Cooper (1994). **The pig as a potential organ donor for man.** *Transplantation* 57(5): 694-703.

Yeatman, M., C.W. Daggett, W. Parker, G.W. Byrne (April 1998). **Complement-mediated pulmonary xenograft injury: studies in swine-to-primate orthotopic single lung transplant models.** *Transplantation* 65(8): 1084-1093.

Web Resources on Swine

- **Articles, Pamphlets and Handbooks**
- **Bibliographies**
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- **Courses/Learning Modules/Techniques**
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Is Outdoor Housing an Enriched Environment for Pigs?
http://www.nal.usda.gov/awic/newsletters/v7n3/7n3morro.htm#outdoor
From the article *Environmental Enrichment for Dairy Calves and Pigs* by Julie Morrow-Tesch, Ph.D.

Recognition of Pain in Farm Animals
http://www.nal.usda.gov/awic/newsletters/v5n1.htm
Article by James E. Breazile, M.A., D.V.M., Ph.D. in the Animal Welfare Information Center Newsletter Special Issue on Farm Animals in Research and Teaching.

Research Articles on Pigs
http://www.grandin.com/references/pigs.html
A listing of articles compiled by Temple Grandin, Ph.D., expert in livestock handling and facility design.

Swine Care Handbook
http://www.pork.org
The purpose of this handbook is to provide pork producers with current information on swine care practices that are recommended for safe, humane, and efficient pork production. Subjects covered include: husbandry, handling, breeding, environmental management, facilities and equipment, feeding and nutrition, and herd health management. Produced by the National Pork Board and revised in 2002.

Welfare Concerns for Farm Animals Used in Agricultural and Biomedical Research and Teaching
http://www.nal.usda.gov/awic/newsletters/v5n1.htm
Article by Janice C. Swanson, Ph.D. in the Animal Welfare Information Center Newsletter Special Issue on Farm Animals in Research and Teaching.

Bibliographies

Selected bibliographies produced by the staff at the USDA National Agricultural Library, Animal Welfare Information Center (AWIC). For a complete listing of bibliographies available from AWIC online visit http://awic.nal.usda.gov/nal_display/index.php?info_center=3&tax_level=1&tax_subject=187.

For selected farm animal publications including policies and guidelines visit http://awic.nal.usda.gov/nal_display/index.php?info_center=3&tax_level=1&tax_subject=170.

Anesthesia and Analgesia for Farm Animals: January 1989 - January 1995
http://www.nal.usda.gov/awic/pubs/oldbib/qb9513.htm
400 citations in English from the AGRICOLA database. Search page for swine terms (swine, pig, piglet, sow).

Animal Models in Biomedical Research: Swine - 1994
http://www.nal.usda.gov/awic/pubs/oldbib/srb94-01.htm
Contains citations regarding the use of swine as biomedical models compiled from a variety of scientific and agricultural sources dating from January 1980 to September 1990.

Information Resources for Livestock and Poultry Handling and Transport: 1990 - December 1998
http://www.nal.usda.gov/awic/pubs/livestock/lvstswne.htm
Reference guide to information available on the handling and transport of farm animals. Separate section on swine references and videos.

Environmental Enrichment Information Resources for Laboratory Animals: 1965-1995
http://www.nal.usda.gov/awic/pubs/enrich/intro.htm
Articles and bibliographic citations included on a variety of laboratory species including swine.

Housing, Husbandry, and Welfare of Swine: January 1991 - January 1995
http://www.nal.usda.gov/awic/pubs/oldbib/qb9506.htm
306 citations compiled from the AGRICOLA database.

Housing, Husbandry, and Welfare of Swine: January 1991 - January 1994
http://www.nal.usda.gov/awic/pubs/oldbib/qb9414.htm
244 citations compiled from the AGRICOLA database.

Books

Amazon.com Pig Books
http://www.amazon.com/
Browse a number of swine books available for purchase online.

Handbook of Animal Models in Transplantation Research
http://www.crcpress.com/shopping_cart/products/product_detail.asp?sku=3629
Surgical handbook that provides detailed information concerning the transplantation of a variety of tissues in experimental animals, including swine.

The Laboratory Swine
http://www.crcpress.com:80/us/product.asp?sku=1035+++&dept%5Fid=1
Addresses the biology, husbandry, management, veterinary care and research application of the laboratory swine.

Swine Nutrition, Second Edition
http://www.crcpress.com:80/us/product.asp?sku=0696+++&dept%5Fid=1
A comprehensive reference that covers all aspects of the nutrition of pigs. Also suitable as an advanced undergraduate or graduate textbook.

Surgery, Anesthesia, and Experimental Techniques in Swine
http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1539848
Practical technical guide for the use of swine in biomedical research.

Swine as Models in Biomedical Research
http://www.amazon.com/Swine-As-Models-Biomedical-Research/dp/0813814723
Publication based on the proceedings of the Seventh Charles River International Symposium. Recognized experts in the use of swine as biomedical animal models present overview talks in their areas of interest.

Courses/Learning Modules/Techniques

Bleeding and Intravenous Techniques in Pigs
http://oslovet.veths.no/teaching/pig/pigbleed/
Teaching materials from the Norwegian Reference Centre for Laboratory Animal Science & Alternatives.

Farm Animals as Models for Biomedical Research VSC 443/543 - Fall 2002
http://www.ahsc.arizona.edu/uac/notes/classes/farmmodels/farmanim_as_biomodels02.html
Basic notes on the use of swine and other species as models for biomedical research.

IACUC Learning Module: Swine
http://www.iacuc.arizona.edu/training/swine/index.html
Notes on swine health, mating, gestation, and parturition, standard laboratory procedures, and euthanasia.

Swine Animal Models for Human Disease and Research Uses. I. Introduction
http://netvet.wustl.edu/species/pigs/pigmodel.txt
Notes on comparative anatomy and disease models of swine.

General Swine Sites and Related Links

NETVET Swine Links
http://netvet.wustl.edu/pigs.htm
Veterinary and animal related. Very comprehensive with many links.

Pig Health Website
http://www.PIGHEALTH.COM/
Searchable website which includes information on pig health, swine welfare, hogs management, pork safety, etc.

Swine Resources
http://www.ansi.okstate.edu/library/swine.htm
Provided by the Oklahoma State University, Animal Science Department Virtual Library.

Genetics and Breeding

Pig Genome Mapping
http://www.projects.roslin.ac.uk/pigmap/pigmap.html
Hosted by the Roslin Institute, Edinburgh, Scotland.

Breeders' World Livestock Directory on Swine
http://www.breedersworld.com/swine/index.html
Complete online livestock directory.

Review of Swine Genetics in the U.S.
http://www.nsif.com/Conferences/1995/review.htm
Article by Larry D. Young, USDA-ARS, U.S. Meat Animal Research Center Clay Center, Nebraska.

Swine Breeds
http://www.ansi.okstate.edu/breeds/swine/
An educational and informational resource on breeds of swine thoughout the world. Provided by the Oklahoma State University, Department of Animal Science.

US Pig Gene Mapping Coordination Program
http://www.animalgenome.org/pig/
Links provided to swine gene databases, swine gene maps, and species comparative gene maps.

Journals

Current Veterinary Serials
http://www.bib.umontreal.ca/
Provided by the Faculte de medecine veterinaire, Universite de Montreal. Includes over 160 veterinary journals with the tables of contents added daily upon the receipt of new issues.

The Pig Journal on CD
http://www.thepigsite.com/books/b195/pig-journal-on-cd-volumes-1-59
Originally known as the Proceedings of the UK Pig Veterinary Society.

Lab Animal
http://www.labanimal.com
Lab Animal is a peer-reviewed journal for professionals in animal research, emphasizing proper management and care.

Laboratory Animals
http://www.lal.org.uk
Journal dedicated to the advancement in laboratory animal science, technology, and welfare.

Scandinavian Journal of Laboratory Animal Science
http://biomedicum.ut.ee/sjlas/index.html
Published by the Scandinavian Society for Laboratory Animal Science (Scand-LAS) whose aim is to further the progress of Laboratory Animal Science (LAS) in the Nordic countries.

Swine Health and Production
https://aasv.securesites.net/shap/guidelines.pdf

Refereed journal published bimonthly by the American Association of Swine Veterinarians.

Proceedings

Literature Databases

MinipigBase Literature Database
http://www.minipigs.dk/
Consists of references on the use of miniature pigs in biomedical research.

Selected Databases for Biomedical, Pharmaceutical, Veterinary and Animal Science Resources
http://www.nal.usda.gov/awic/databases/database.htm
Descriptive listing of free and for fee based databases.

Model Research

Ronald O. Ball, Ph.D.
http://www.utoronto.ca/nutrisci/faculty/Ball/
Research interests in amino acid metabolism in swine and humans. Developed a unique surgically prepared piglet model for enteral and parenteral nutrition.

Institute of Experimental and Transplantation Surgery
http://www.unimi.it/engl/institutes.htm
Selected publications listed on small bowel and liver allotransplantation in the pig.

Sinclair Research Center
http://www.sinclairresearch.com/
Provides research facilities and services to the human health and biomedical industries. Swine models developed for research in diabetes, osteoporosis, atherosclerosis and other areas.

John G. Webster, Ph.D.
http://www.engr.wisc.edu/bme/faculty/webster_john.html
Conducts research on electrode design for cardiac tachyarrhythmia ablation. Swine are used as models.

Organizations

Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) International
http://www.aaalac.org
Contains complete information on AAALAC's accreditation program along with other news and resources for the animal care and use community.

American Association for Laboratory Animal Science (AALAS)
http://www.aalas.org
Forum for the exchange of information and expertise in the care and use of laboratory animals.

American Association of Swine Veterinarians (AASV)
http://www.aasv.org/
An educational professional society organized to increase the knowledge of veterinarians in the field of swine medicine, practice, etc.

American College of Laboratory Animal Medicine (ACLAM)
http://www.aclam.org
Organization of board certified veterinary medical specialists who are experts in the humane, proper and safe care and use of laboratory animals. Also establishes standards of education, training, experience and expertise necessary to become qualified as a specialist and recognizes that achievement through board certification.

American Society of Laboratory Animal Practitioners (ASLAP)
http://www.aslap.org
Promotes the acquisition and dissemination of knowledge, ideas, and information among veterinarians and veterinary students having an interest in laboratory animal practice.

Canadian Association for Laboratory Animal Science (CALAS/ACSAL)
http://www.calas-acsal.org/
Composed of a multidisciplinary group of people and institutions concerned with the care and use of laboratory animals in research, teaching and testing.

Canadian Council on Animal Care (CCAC)
http://www.ccac.ca/
Information on primary goals and many publications online. The page is in English and French. Includes full text of CCAC Guide to the Care and Use of Experimental Animals, Livestock Codes of Practice, transgenic animals, etc.

Federation of European Laboratory Animal Science Association (FELASA)
http://www.felasa.eu/
Composed of independent European national and regional laboratory animal science associations.

International Council for Laboratory Animal Science (ICLAS)
http://www.iclas.org
An international scientific organization dedicated to advancing human and animal health by promoting the ethical care and use of laboratory animals in research worldwide.

Intstitute for Laboratory Animal Research (ILAR)
http://dels.nas.edu/ilar/
Prepares and makes available scientific and technical information on laboratory animals and other biological research resources to the scientific community, the federal government, and the public.

NETVET
http://netvet.wustl.edu/org.htm
Includes veterinary and animal related information. Very comprehensive with many links.

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The Animal Welfare Information Center, Contact AWIC
http://www.nal.usda.gov/awic/pubs/swine/swine.htm
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