



THE WINN FELINE FOUNDATION

For the Health and Well-Being of All Cats

1805 Atlantic Ave., PO Box 1005, Manasquan, NJ 08736-0805
Voice 732-528-9797, ext 31 Fax 732-528-7391 www.WinnFelineHealth.org

HEALTH NEWS

From THE WINN FELINE FOUNDATION

Summaries by Betty White 10/06

“Comparison of Oral and Subcutaneous Administration of Buprenorphine and Meloxicam for Preemptive Analgesia in Cats Undergoing Ovariohysterectomy.”

Researchers at the University of Tennessee College of Veterinary Medicine, Knoxville, investigated the effectiveness of two drugs in preventing post-operative, pain-associated behaviors in cats after spaying. The randomized controlled study included 51 female cats, ages 4 to 60 months. Sedation scores and pain-associated behavior scores were assigned to each cat 2 hours before and at intervals until 20 hours after surgery.

On the basis of pain-associated behavior scores, cats receiving meloxicam before ovariohysterectomy (spay) appeared to have less pain after surgery than those receiving buprenorphine before surgery.

[Gassel, A., K. Tobias, et al. (2005). *J Amer Vet Med Assoc* 227(12): 1937-1944.]

“Survival Times for Cats with Hyperthyroidism Treated with Iodine 131, Methimazole, or Both: 167 Cases (1996-2003).” Researchers at the College of Veterinary Medicine, University of Florida, Gainesville, conducted a retrospective study of 167 cats confirmed with hyperthyroidism to compare survival times with differing treatment regimes. Cats with pre-existing renal disease had significantly shorter survival times than did those cats without this condition. Excluding the cats with pre-existing renal disease, it was found that the median survival time for cats treated with methimazole alone was significantly shorter than the median survival time for cats treated with iodine alone or methimazole followed by iodine. Age was positively correlated with survival time, with older cats more likely to live longer.

[Milner, R., C. Channell, et al. (2006). *J Amer Vet Med Assoc* 228(4): 559-536.]

“Hemodynamic Effects of Methylprednisolone Acetate Administration in Cats.”

Researchers at the College of Veterinary Medicine, University of Minnesota, Saint Paul, investigated the mechanisms by which corticosteroid administration may predispose cats to congestive heart failure. Cats (12) used in the study received methylprednisolone acetate (MPA) for the treatment of dermatologic disorders. Evaluations included physical examination, systolic blood pressure measurement, blood analysis, serum biochemical analysis, chest radiography, echocardiography, and total body water and change in

plasma volume determination. Resulting data suggest that MPA administration in cats causes plasma volume expansion analogous to the plasma volume expansion that accompanies uncontrolled diabetes mellitus in humans. Although none of the cats in the study suffered from congestive heart failure (CHF), the researchers concluded that any cardiovascular disorders that impair the normal compensatory mechanisms for increased plasma volume may predispose cats to congestive heart failure following corticosteroid administration. This research project was supported by funds from the **Winn Feline Foundation**.

[Ployngam, T., A. H. Tobias, et al. (2006). *Am J Vet Res* 67(4): 583-7.]

“Results of Thyroidectomy in 101 Cats with Hyperthyroidism.” Members of the Faculty of Veterinary Medicine, Utrecht University, The Netherlands, conducted a retrospective study of cats that had undergone thyroidectomy for treatment of hyperthyroidism. They hoped to determine potential complications both before and after surgery and note any recurrence of the disease.

Hyperthyroidism is the most common disorder of the endocrine system in middle- aged and older cats. It is caused by benign adenomatous hyperplasia (benign tumors that arrest proper function) of one or both thyroid glands, or by the same benign tumors on ectopic thyroid tissue (thyroid tissue in an abnormal place or in an abnormal form). Thyroid cancer occurs in less than 2% of cases. Progressive signs of hyperthyroidism may include increased appetite, weight loss, muscle wasting, heat intolerance, and slightly elevated body temperature. In addition, thyroid hormones also increase the sympathetic drive leading to hyper-excitability, nervousness, behavioral changes, tremor, and tachycardia. In hyperthyroid cats, a cardiac examination may reveal a heart rate of more than 240 beats per minute, pulse deficits, gallop rhythm, a heart murmur, and pleural effusion causing muffled heart sounds. A hyperthyroid gland is enlarged and readily palpable in most hyperthyroid cats.

The three treatments currently considered for feline hyperthyroidism are long-term anti-thyroid drug administration, surgical thyroidectomy, or the use of radioactive iodine to destroy the affected thyroid tissue. The best treatment option for a cat depends upon age, concurrent medical problems, availability of treatment, financial considerations, and the owner’s preferences. Long-term anti-thyroid drug use blocks synthesis of thyroid hormones, and may be complicated by blood abnormalities and liver disease. Radioactive iodine administration can be considered the treatment of choice for feline hyperthyroidism, because no substantial adverse systemic effects have been observed and most cats require only a single treatment. There must, however, be appropriate facilities for isolation after treatment and a special license is required by law to perform the treatment.

A thyroidectomy also cures the condition, and the surgery is neither technically demanding nor time-consuming. It is often an established surgical technique in specialized veterinary institutions. Surgery is not without risks, however, and the recurrence of hyperthyroidism can occur.

This study concluded that complications were uncommon after thyroidectomy performed by an experienced surgeon, when combined with anesthesia designed to minimize

adverse cardiovascular effects. Hyperthyroid cats with ectopic thyroid tissue had a significantly higher chance of recurrence, suggesting that surgery should not be recommended for these cats.

[Naan, E. C., J. Kirpensteijn, et al. (2006). *Vet Surg* 35(3): 287-93.]

“The Many (Furry) Faces of Hypertension.” High blood pressure as secondary to a variety of diseases is seen in cats. Anthony Carr, DVM, examines the two most common causes, renal disease and hyperthyroidism.

Studies on renal disease have shown that felines that are hypertensive will die more rapidly than those with normal blood pressure. A retrospective study by investigators from the Royal Veterinary College in London in 2005 included 141 hypertensive cats with renal disease. Hypertension was defined as a systolic blood pressure more than 170 mmHg determined via Doppler. Results showed that blood pressure at the beginning of therapy seems related to time-averaged systolic blood pressure until the end of the study or death of the patient, and both relate to survival. This finding would argue for strict blood pressure control. Should the initial therapy not lower blood pressure into the normal range, additional medications or increased dosages may be needed. It is hoped that this therapeutic regime can prolong life.

The general view is that many cats with high blood pressure prior to therapy for hyperthyroidism will normalize as therapy proceeds, though a percentage can remain hypertensive. Researchers from the Royal Veterinary College in London studied cats that became hypertensive within 6 months of successful hyperthyroidism treatment. The group included 10 cats that maintained normal blood pressure and 11 cats that became hypertensive after treatment. Hypertension was defined as a systolic blood pressure more than 175 mmHg. Results raised the possibility that the loss of renal function might influence blood pressure in cats with hyperthyroidism.

Obtaining accurate blood pressure readings is vital in making a correct clinical decision. Taken into consideration should be the “white coat” syndrome, a phenomenon as applicable to companion animals as to humans. (The stress of the doctor visit can often elevate blood pressure values.) In the final analysis, a diagnosis of hypertension is not dependent solely upon a number generated by a machine. It is also based upon the clinical diagnostic skills of veterinarians and the use of all clinical information available.

[*Veterinary Practice News*, July 2006.]

“Pancreatitis in Cats: Diagnosis and Management of a Challenging Disease.” Debra L. Zoran, DVM, PhD, Diplomate ACVIM, discusses the difficulty in diagnosing feline pancreatitis, and the challenges of managing the disease.

The lack of specific and readily recognized clinical signs contributes to the diagnostic difficulties of the disease. Diagnosis requires a combination of clinical suspicion, appropriate findings upon physical examination, elevations in serum reactions to lipase (an enzyme) found in the pancreas, and changes on abdominal ultrasonography consistent with pancreatic disease. The diagnosis of pancreatitis is specific when a combination of

tests is utilized, but even when this is done the diagnosis is still problematic. This is especially true in cats with chronic pancreatitis.

The treatment of pancreatitis is symptomatic, and focuses on maintaining fluid volume, controlling pain and vomiting, preventing infection, and adjusting to changes in the cat's condition as they occur.

[Zoran, D. L. (2006). *J Am Anim Hosp Assoc* 42(1): 1-9.]

“Obesity Concerns Take on Added Weight When Pets, Owners Share Problem.”

Writing for *Veterinary Practice News*, Dennis Arp discusses overweight pets, overweight owners, and the human-animal bond as a means to better health for all. The dangers of obesity for humans and animals are many and include heart disease, diabetes, and other health problems. There are steps that can be taken to begin a weight-loss regime for pets, and they are:

- Count your pet's calories, and begin a controlled feeding program.
- Keep a food diary, and make sure that everyone in your household participates.
- Remember that an 8-ounce cup is a standard measure, not necessarily a coffee mug.
- Limit treats; they are often high in calories.
- Set up an exercise program, particularly playing “fetch” with cats or have them scurry after toys and teasers.
- Move the feeding bowl around the house. A hunt usually translates into exercise.
- If your house has an upstairs, figure ways to make your pet use them more than usual.

Research has indicated that a dog's life can be lengthened by as much as two years by maintaining a proper weight. There is every reason to believe that the same can be said for cats. It is possible that owners motivated to provide a healthier life for their pets may be motivated to do so for themselves!

[*Veterinary Practice News*, August 2006.]

“Use of Inhaled Medications to Treat Respiratory Diseases in Dogs and Cats.” In this issue of the *JAAHA*, the featured article is Dr. Philip Padrid's discussion of the treatment of non-infectious disorders of the respiratory tract in the Family Pet Animal Hospital in Chicago, Illinois. The diseases/disorders include laryngitis, tracheitis, bronchitis, and asthma. The traditional therapies have often been corticosteroids and bronchodilators given orally or by injection. Since side effects of these medications can be severe, the cessation of treatment often occurs. On the other hand, inhaled corticosteroid drugs are not as absorbed into the systemic circulation and significant side effects do not occur. Dr. Padrid believes the new standard of care for dogs and cats with respiratory diseases should be inhaled corticosteroid drugs. The **Winn Feline Foundation** funded some of the early work that established inhaled drug therapy as feasible in the cat.

[Padrid, P. (2006). *J Am Anim Hosp Assoc* 42(2): 165-169.]

“White Spotting in the Domestic Cat (Felis Catus) Maps Near KIT on Feline Chromosome B1.” This study, supported by **The Winn Feline Foundation**, involved members of the School of Veterinary Medicine, UC Davis, and the WALTHAM Centre for Pet Nutrition, Melton Mowbray, Leics, UK. Researchers genotyped five feline-

derived microsatellite markers in a large pedigree of cats that segregates for ventral white spotting. The ventral white spotting pattern is known as bicolor to cat fanciers, and the pattern when expressed is heterozygous (Ss). It is considered to be dominant to solid color, with an additive effect of the dominant allele. Full solid color (ss) is recessive, while the van pattern in which color is expressed to the head and tail areas of the body is postulated as homozygous (SS). Other white spotting phenotypes show spotting at the ventral midline, such as lockets and belly spots, or white at the extremities, such as gloves and mittens.

Since both the *KIT* and *EDNRB* genes cause similar white spotting phenotypes in other species, three of the five microsatellite markers chosen were on feline chromosome B1 in close proximity to *KIT*, while the other two markers were on feline chromosome A1 near *EDNRB*. Pairwise linkage analysis supported linkage of the white spotting with the three chromosome B1 markers, but not with the two chromosome A1 markers. Therefore, this study indicates that the *KIT*, or another gene within the linked region, is a candidate for white spotting in cats.

[Cooper, M. P., N. Fretwell, et al. (2006). *Anim Genet* 37(2): 163-5.]

“Retrospective Evaluation of Adjunctive Doxorubicin for the Treatment of Feline Mammary Gland Adenocarcinoma: 67 Cases.” The investigators for this study represented laboratories, veterinary schools, veterinary hospitals, and clinics in California, Colorado, Florida, Iowa, and New York. The medical records of 67 cats with confirmed mammary gland adenocarcinomas that were treated with adjunctive doxorubicin from June 1994 through December 2002 were examined. From these records, the researchers evaluated factors influencing the disease-free intervals and survival times for these cats. They determined that the median survival time of cats that received surgery and doxorubicin was 448 days. The median disease-free interval was 255 days. Any one of the significant factors affecting the prognosis for survival included tumor volume, the development of metastatic (spreading elsewhere) disease, and the location of the metastatic disease. Those factors affecting the disease-free interval, any one of which is applicable, were the completion of initial chemotherapy, the development of metastatic disease, the location of the metastatic disease, and the diseased tissue structure subtype.

[Novosad, C. A., P. J. Bergman, et al. (2006). *J Am Anim Hosp Assoc* 42(2): 110-120.]

“Phase I Trial and Pharmacokinetic Analysis of Ifosfamide in Cats with Sarcomas.” Researchers for this initial clinical trial of ifosfamide to treat tumor-bearing cats were Rassnick, K. M., DVM, Moore, A. S., MVSc, Northrup, N. C., DVM, Kristal, O., DVM, Beaulieu, B. B., MS, Lewis, L. D., MB, BCh, MD, and Page, R. L., DVM, MS. The study’s objective was to determine the maximum dose cats would tolerate and the dose-limiting toxicosis of ifosfamide. There were 38 cats in the study. Based on this study, the dosage of ifosfamide recommended to treat tumor-bearing cats is 900 mg/m² every 3 weeks. This dosage should be used in phase II clinical trials. This study was funded by a grant from **The Winn Feline Foundation**.

[Rassnick, K., A. Moore, et al. (2006). *Am J Vet Res* 67(3): 510-516.]

[**Editors's Note:** ---*And now for a look at fantastic future possibilities...*]

“Deep-Freeze Mice Become Dads.” Marian C. Horznek is editor-in-chief of an online news site that publishes interesting research. This particular piece reports on a team of scientists headed by Atsuo Ogura, a professor at the Institute of Physical and Chemical Research (RIKEN) Bioresource Center in Ibaraki, Japan, and his colleague, Ryuzo Yanagimachi of the University of Hawaii, School of Medicine.

One of the current methods for harvesting sperm is by dissecting dead animals (or, testes saved at the time of castration) and isolating sperm from the epididymis, the site of sperm storage in the testes. The structure of the cells is protected from the rigors of freezing by a purification process and frozen in solution along with various chemicals. The process works reasonably well, although the sperm are not alive and swimming. Human sperm is stored by much the same process. It is not ideal for masses of frozen animal sperm, however, and freezing can sometimes damage the valuable DNA. Success rates can vary from less than 1% to more than 30%.

Ogura and Yanagimachi sought to simplify the process. Their team froze intact testes and, in some cases, the entire mouse. The big surprise occurred after the scientists and their team harvested sperm from mice that had been frozen at –20 degrees C for 15 years. Despite the fact that the sperm themselves were long dead, and the freezing process was not perfect, the sperm proved usable. Over 80% of mouse eggs injected with the frozen sperm developed into two-celled embryos within a day. In the even more remarkable next step, the embryos were transferred into female mice and 21% of the resulting offspring proved to be healthy, fertile pups!

A whole new world awaits the scientists who worry about endangered species -- and the cat fancier who worries about a disappearing gene pool. And, who is to say that the woolly mammoth will never walk the earth again?

[*Veterinary Sciences Tomorrow*, <http://www.vetscite.org>, August 29, 2006.]