

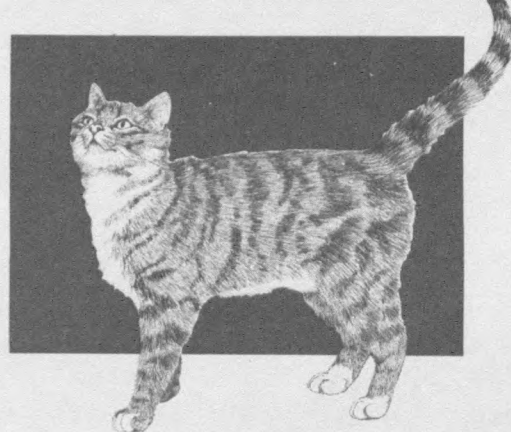
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# Perspectives On Cats

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*A Newsletter for Cat Fanciers  
From The Cornell Feline Health Center*

Spring 1989



## Home Management of the Diabetic Cat

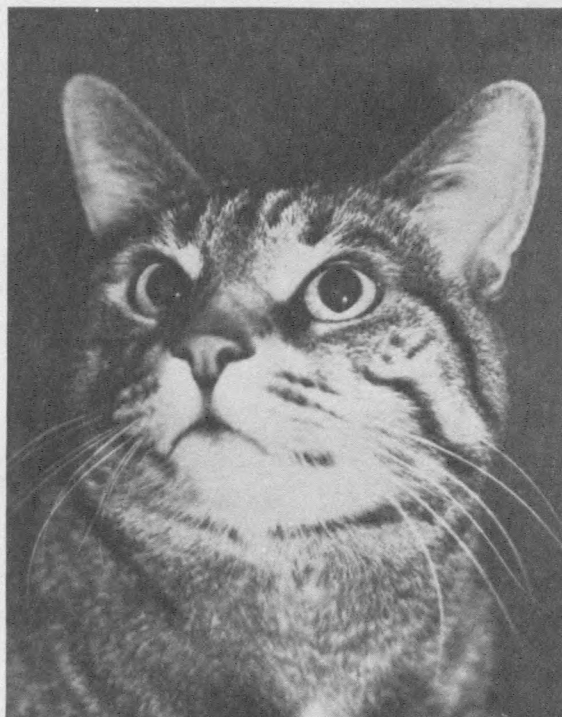
Sandra Karcher, R.N.

One of my duties as a registered nurse is to instruct new diabetic patients in the day-to-day management of their disease. When my 15-year-old male cat, Loveable Lloyd, was diagnosed with diabetes, I had to decide how to manage his care. My veterinarian said that most people bring their diabetic pets to the office several times a week for a blood glucose check and regulation of insulin. (The blood glucose test is a more accurate method than urine testing to determine the glucose level. Also, this method does not interfere with litter box habits as does urine testing.) However, the stress caused by the trip to the veterinarian can result in an increase in blood glucose levels. Therefore, tests performed in the veterinarian's office may be abnormally high. My veterinarian and I felt that one solution was to check Lloyd's blood glucose at home where he would not be under as much stress and the reading might be more accurate. Chem-Strips that are used by human diabetics, can also

be used to check a cat's blood glucose level. Everything needed for the care of a diabetic cat is readily available at drug stores (i.e. Chem-Strips, lancets, alcohol wipes) or from the veterinarian.

### Technique

Cats have a small vein that follows the outer edge of each ear, and is easily accessible for obtaining a drop of blood. If your cat is reasonably well behaved and does not object to being held on your



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Loveable Lloyd patiently awaits having his blood glucose level checked.

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lap for a few minutes, it is possible to obtain quickly and painlessly a drop of blood for testing.

I usually do Lloyd's test in a closed room (to prevent the chance of escape), with a comfortable chair and a table for supplies. First, I assemble all the required equipment -- Chem-Strips, lancet, alcohol wipe, tissue, and a watch to time the test. Having some "kitty treats" available will help distract the cat if you need to try again for blood.

After settling the cat on your lap, hold the outer edge of the ear near the head and pinch gently. This momentarily blocks blood flow, allowing the vein to enlarge and become more visible. Wipe the ear vein with the alcohol wipe, then quickly but gently stab the enlarged vein with the lancet. When a drop of blood appears, slide it on to the test strip and begin timing. While you are waiting for the test results, take a tissue and cover the punctured vein. Apply gentle pressure to the ear for 10 to 15 seconds to stop the bleeding. Wipe off the blood from the test strip after 60 seconds, then wait an additional 60 seconds before comparing the color of the test strip to the color chart on the bottle. If you are uncertain of any of the steps, read the instructions that come with Chem-Strips. After determining the blood glucose level, administer insulin according to your veterinarian's instructions. Since insulin is given just under the skin, the needles are very small and practically painless when inserted. Insulin can be given to cats anywhere along their back. Just pinch up a fold of skin, insert the needle and inject the insulin.

### **Additional Considerations**

Keeping accurate records is essential as with any chronic disease. Daily I record in a notebook the time of testing, blood glucose level, and the amount of insulin given. I also note changes in ap-

petite, degree of thirst, excessive urination, and any unusual behavior. This provides our veterinarian with a complete record of how Lloyd has been doing since his last checkup.

The NPH insulin that we use is metabolized by the cat in about three hours. It is very important that Lloyd eats regularly, or the insulin injection could cause a dangerously low blood glucose level (hypoglycemia). Originally our routine was to check the blood glucose, inject the proper dosage of insulin, then feed him. However, this routine caused problems especially when he refused to eat. Whenever this happened his blood glucose level would become dangerously low. I would counteract the hypoglycemia by rubbing Karo syrup on his gums and trying to get him to eat. We have since changed our routine, and we wait about 30 minutes after he eats to administer his insulin. This allows the insulin to act while he is digesting his meal.

*(continued on page 8)*

## *Perspectives On Cats*

*A Newsletter for Cat Fanciers  
From The Cornell Feline Health Center*

The ultimate purpose of the Cornell Feline Health Center is to improve the health of cats everywhere, by developing methods to prevent or cure feline diseases, and by providing continuing education to veterinarians and cat owners. All contributions are tax-deductible.

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**Assistant Director:** John E. Saidla, D.V.M.  
**Editor:** June E. Tuttle  
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## Birth Control for Cats

June E. Tuttle, A.A.S., B.S.

The control of free-ranging cats in the United States has become an important issue in the last twenty years. Consider the impact that one sexually active female cat can have on the environment. Assume it has a litter of two females and two male kittens, with the same cycle continuing in following generations. In just five generations, or about two years, 324 cats could be born. The yearly cost to collect, shelter, and destroy abandoned and stray animals exceeds \$500 million.

Each year there are about 25 million homeless pets, of which 18 million are destroyed because they are never adopted. If current trends continue we can expect the cost, in dollars and pet lives, to continue to spiral upward. However, there is a reasonable solution to the problem--birth control. *You, as a cat owner, are responsible for your cat's sexuality.*

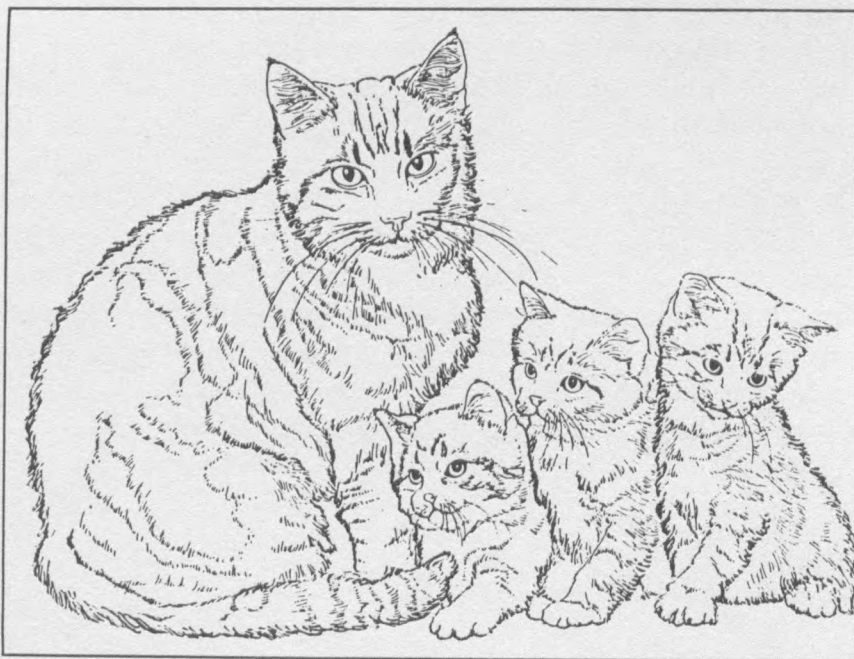
risk of reproductive diseases such as uterine infections, ovarian cysts and tumors, and mammary tumors.

The surgical procedure is considered major surgery and usually requires a hospital stay of 24 hours or more. The veterinarian will provide you with guidelines for post-surgical care of the cat. Basic postsurgical care includes limiting the cat's activity until the sutures are removed, and checking the sutured area for any swelling or bleeding. If problems occur, the veterinarian should be contacted. Associated medical problems can occur if a small part of ovarian or uterine tissue is not removed during surgery. The ovarian tissue will continue to produce hormones, causing the spayed cat to come back into estrus. If the uterus is not removed or if a portion of it is left, uterine infec-

### Female Cats

#### Spaying (Ovariohysterectomy):

The surgical removal of the ovaries, oviducts, and uterus is a recommended procedure for all female cats that are six months or older and will not be used in a breeding program. The removal of the reproductive organs also eliminates the behaviors associated with an intact female during heat (estrus) cycles such as excessive vocalization, restlessness, treading, rolling and extreme affection. Spaying also reduces the



tions can occur. Administering the drug megestrol acetate or other progestins or estrogens to a spayed cat that still retains a portion of the uterus may initiate uterine infections.

#### Estrus Control:

The estrous cycle in unspayed female cats can be controlled with progestins. The progestin, megestrol acetate, has been experimentally and clinically used in the United States to control estrus in cats. It is hypothesized that progestins probably mimic the corpora lutea and have a negative feedback on hormones effecting the sex organs. Side effects of progestin therapy may include increased appetite, increased body weight, a calming effect, and increased affection. Prolonged and indiscriminate use may cause overactivity of the adrenal glands. Cats with genital tract infections should not be given progesterone or progestins. Also, indiscriminate use of progestins can lead to cystic pyometra, enlarged mammary glands and possible mammary gland tumors.

Studies are being done on immunizing cats to prevent estrus. (Vaccines stimulate antibodies against a particular antigen.) It is possible to produce antibodies against luteinizing hormone, the fertilized egg, the outer layer of the egg, and sperm. However, these techniques are still in the experimental stage and would be an expensive alternative.

#### Mismating:

Queens that "accidentally" mate can be successfully treated by a veterinarian with estradiol cypionate. The drug must be administered within 40 hours after mating. The ova are retarded in transport through the oviduct for at least an additional 24 hours, resulting in degeneration of the ova.

#### Artificial Mating:

Because cats are induced ovulators, artificial stimulation of the vagina to cause ovulation can sometimes shorten the estrous cycle in the queen. However, she will return to estrus within thirty to fifty days. This technique is used mostly by cat breeders who want to postpone matings for one or two estrous cycles.

### **Male Cats**

#### Neutering (Castration):

This surgical procedure consists of removing the testes, epididymis (a duct connecting the testes to the vas deferens), and parts of the vas deferens (a tube that carries sperm from the testes to the urethra). This procedure has benefits in addition to preventing the impregnation of a female cat. Since the testes produce male hormones, the associated problems of urine spraying, excessive aggression and the pungent odor of male urine are also eliminated when the testes are removed. Some males continue to spray urine even after they have been castrated. This may be more of a behavioral problem than a physiological one.

### **Summary**

The cost of spaying or neutering is far less than medical bills for associated reproductive diseases that may even be fatal to the cat. In many communities the SPCA or other humane groups offer a low-cost spay/neuter program, making surgery very affordable. Spaying and neutering cats also reduces the problem of homeless kittens. ■



## Vaccination Schedule

The incidence of infectious feline diseases has been reduced significantly through the use of vaccines. Vaccines contain adjuvants (substances that enhance the immune response) and the modified live or inactivated virus or bacteria. After a vaccine is given, the animal's immune system responds by producing antibodies against the modified or inactivated infectious agent. The antibody usually will combine with the infectious agent and render it noninfectious. The degree of protection often depends on the amount of specific antibody present.

All cats should be immunized against feline panleukopenia, feline viral rhinotracheitis, feline calicivirus, chlamydia, and rabies. Vaccination

against leukemia should be done according to your veterinarian's recommendation. There is always a risk of adverse side effects occurring from vaccination. However, the benefits in most cases far outweigh the risks. Because there are numerous factors to be considered, vaccination of cats should be done only by a veterinarian or under the supervision of a veterinarian.

The following chart provides basic information on standard feline vaccines and when kittens and adult cats should be vaccinated against various diseases. ■

The information provided has been adapted from text written by Dr. Fredric W. Scott, director of the Cornell Feline Health Center.

DISEASE	TYPE OF VACCINE	AGE AT VACCINATION FIRST (weeks)	AGE AT VACCINATION SECOND (weeks)	REVACCINATION	ROUTE OF ADMINISTRATION
Panleukopenia (FP)	(1) Inactivated	8-10	12-14	Annual	SC or IM
	(2) MLV	8-10	12-14	Annual	SC or IM
	(3) MLV-IN	8-10	12-14	Annual	IN
Viral rhinotracheitis (FVR)	(1) MLV	8-10	12-14	Annual	SC or IM
	(2) MLV-IN	8-10	-	Annual	IN
	(3) Inactivated	8-10	12-14	Annual	SC or IM
Caliciviral disease (FCV)	(1) MLV	8-10	12-14	Annual	SC or IM
	(2) MLV-IN	8-10	-	Annual	IN
	(3) Inactivated	8-10	12-14	Annual	SC or IM
Chlamydiosis	(1) Live Attenuated	8-10	-	Annual	SC or IM
Rabies	(1) Inactivated	12	64	Triennial	IM
Feline leukemia (FeLV)	(1) Inactivated	9	12	Annual	SC or IM

MLV = modified-live virus  
IM = intramuscular  
SC = subcutaneous  
IN = intranasal

## Subject Index

The following is a categorical listing of past articles published in *Perspectives on Cats*. If you are interested in receiving a past issue or a reprint of a particular article, there is a charge of \$1 per request to cover the cost of handling and mailing.

### Bacterial Diseases

- Cat Scratch Disease, Win '83
- Cause of Cat Scratch Disease, Sum '86
- Song Bird Fever, Fall '88
- Vaccine Protects Against Chlamydiosis, Win '88

### Basic Information

- Barney Cat, June '81
- Special Needs of the Older Cat, Sept '82
- New Hope & Healing Through Pet Therapy, Dec '82
- Cats Through the Ages, Sum '84
- Allergic to Cats? Don't Despair, Fall '85
- How do Cats Purr? Fall '85
- Summer Camp for Your Cat, Sum '86
- Can You Catch It From Your Cat? Spr '87
- Winterizing Your Cat's Lifestyle, Win '88
- Helping Your Cat Survive the Holidays, Win '88

### Behavior

- Feline Behavior Problems, Nov '81
- High-Rise Syndrome, Spr '83
- Solving Housesoiling Problems, Sum '86
- How Smart is the Cat? Spr '88

### Diagnostic Tests

- In-hospital Test for FeLV, June '81
- The KELA Test for Coronavirus, Apr '82
- How Viruses are Diagnosed, Apr '82
- The Use of Diagnostic Tests, Fall '88

### Digestive System

- Cornell Survey on GI Viruses, Mar '81
- Giardia Can Cause Chronic Diarrhea, Fall '85
- Feline Gum Disease, Fall '84
- Home Dental Care for Cats, Spr '88

### Eyes

- Intraocular Inflammation in Cats, Spr '84

### First Aid

- Summer Safety Hazards, Sum '83
- Life-threatening Injuries, Fall '83
- Care for Burns and Frostbite, Win '83
- Is Your Cat a Pill About Pills? Win '84
- Abcesses in the Cat, Fall '85
- Holiday Hazards, Win '85
- Heat Stroke, Sum '86
- CPR: The Breath of Life, Fall '86

### Genetics

- Inherited Craniofacial Malformations in Burmese, Dec '82
- A Matter of Color: Calico & Tortie, Fall '86

### Heart

- New Studies on Heart Disease, Apr '82
- Heartworm: A New Feline Disease, Sum '85
- Lincoln Sets Pace for Cardiology, Spr '86

### Metabolic Disorders

- Feline Thyroid Disease, Sept '82
- A Look at Hyperthyroidism, Win '86
- Home Treatment for Diabetic Cats, Win '87

### Nervous System

- CNS Disease in the Cat, Nov '81

### Neonatal Care

- Premature Kitten Deaths, Sum '85
- Queen for a Day ... or More, Spr '86

### Nutrition

- Read the Label, Spr '85
- Fat Cats Have Weighty Problems, Sum '87
- Know Your A,B,Cs of Vitamin Nutrition, Fall '87

### Parasites

- Feline Toxoplasmosis, Spring '83
- Heartworm: A New Feline Disease, Sum '85
- Giardia Can Cause Chronic Diarrhea, Fall '85
- Don't Let Fleas Become a FAD, Spr '86
- Blood Parasites: The Hidden Threat, Spr '88
- The Mighty Mite, Sum '88

### Poisons

- Antifreeze Poisoning, Apr '82
- Plant Poisoning, Spr '84
- Counteract Chemical Poisons, Sum '84
- Inside Story on Rodenticides, Sum '87
- Pyrethrin Pesticides Can Be Harmful, Fall '88

### Reproduction

- Breeding Basics, Win '86
- Feline Breast Cancer? Sum '87

### Respiratory System

- Feline Respiratory Disease, Win '85

### Skin

- Fleas and Flea Allergy Dermatitis, June '81
- Rodent Ulcer is Perplexing Disease, Fall '86
- Don't Let Fleas Become a FAD, Spr '86

### Urinary System

- What's the Fuss over FUS?, Win '85
- Kidney Disease in Cats, Spr '87

### Viral Diseases

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- FeLV Transmission, Human Risk, Mar '81
- Cornell Study Herpesvirus, Mar '81
- FIP Update, Jun '81
- Worldwide FIP, Apr '82
- Feline Rabies on the Rise, Win '83
- Answers to Questions on FIP, Win & Spr '84
- Rabies Alert! Fall '85
- FeLV Vaccine is Now Available, Spr '85
- New Feline Virus (FTV) Threatens Cat Health, Sum '88



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### **Cat Club Support:**

We have received a very favorable response from cat clubs to our Equipment Wish List. The following cat clubs have contributed money for the purchase of needed equipment: **The Quad City Cat Club**, Iowa (\$1,500) and **Mountain Mist Cat Fanciers**, Washington (\$25) for a laser printer; and **McKenzie River Cat Club, Inc.**, Oregon and **Westchester Feline Club, Inc.**, New York each contributed \$1,000 toward Antiviral Compounds and FIP Research. The following cat clubs have given the center unrestricted gifts and/or have distributed literature about the center at their cat shows: **HiDesert Cat Club**, California; **Janesville All-Breed Cat Club, Inc.**, Illinois; **Kentuckiana Cat Club, Inc.**, Kentucky; **Manasota Cat Fanciers**, Florida; and **Fox River Valley Cat Club, Inc.**, Wisconsin.

## Home Management of the Diabetic Cat

*(continued from page 2)*

In some ways cats are more fortunate than human diabetics. Being fed twice a day is usually sufficient, and they do not have the craving for sweets and forbidden foods that plague human diabetics. Of course, a diabetic cat can still enjoy occasional treats or tablescraps provided that their main nourishment is from two nutritionally balanced feedings a day. I know that Lloyd and I could not have managed so well if my husband had not been willing to take an active part in Lloyd's care. Even though my husband has no medical background, he quickly learned everything necessary for Lloyd's care. It is not unusual to hear Lloyd purring loudly during the entire procedure. We have been managing for over a year now, and Lloyd is content and comfortable as his enthusiastic purr tells us. So if your four-footed friend should become diabetic, let your veterinarian

know that you are interested in caring for your pet at home. With some cooperation and practice, it can be done. ■

*Sandra Karcher is a member of the Cornell Feline Health Center. Professionally, she is a registered nurse in New York State.*



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