



At-Home Care for Diabetic Cats

Glucose monitoring is most successful when the patient is in a familiar setting and stress-free.

Performing standard procedures such as vaccinations or blood tests on a cat that is afraid of the veterinarian can be traumatic. For the diabetic cat, blood glucose readings collected in the veterinarian's office can be so skewed by the cat's stress that they are virtually useless. Under such circumstances, determining how much insulin the cat requires can be problematic.

Human diabetics have been measuring their blood glucose levels at home for years, and now the option of home testing — by using a lancet device and a portable blood glucose meter (PBGM) — is growing more popular with caregivers of diabetic pets.

"Test results are more objective at home," says Claudia Reusch, DVM, diplomate of the European College of Veterinary Internal Medicine and head of the Clinic for Small Animal Internal Medicine, University of Zurich, Switzerland. "At home, measurements are taken during normal life, and the results are less influenced by stress or lack of food intake," says Dr. Reusch, who co-authored "Measurement of Capillary Blood Glucose Concentrations by Pet Owners: A New Tool in the Management of Diabetes Mellitus," which appeared in the *Journal of the American Animal Hospital Association* (May 1, 2002).

Less Costly, More Effective

For the cat owner on a budget, home BG testing is more economical and particularly useful for a cat that is either difficult to regulate or no longer needs insulin injections. "I home test every month or two, just to ensure that we are still on track," says Denise Ethier about her cat, Missy, whose diabetes is now under control without the need for insulin.

In the past, testing for glucose in the



Some cats fear a trip to the veterinarian's office to such a degree that it makes it difficult — and sometimes impossible — to obtain accurate blood glucose levels. At-home testing can be a big help in these cases.

urine had been the only way to monitor cats at home. For a cat owner, urine samples may be difficult to collect because the cat often uses the litter box when the owner is not looking or asleep — although special cat litters may make the job a little easier.

Capillaries Are Used

Blood is typically collected from the capillaries located in the inside of the cat's ear, although other locations may work as well, such as the paw pads. Capillaries are closer to the skin surface

than blood vessels from which a veterinarian might draw blood. "Portable glucose meters are especially designed for use with capillary blood," says Dr. Reusch.

It's important to ask your cat's veterinarian for a hands-on demonstration while in his or her office. But here is one method: Hold the tip of the cat's ear between the thumb and index finger and flatten the ear pinna (ear flap) with the other fingers. With the other hand place the lancet device on the pinna, forming an airtight seal, and press the

plunger to move the lancet back and forth once.

When pressure is released, a drop of blood forms on the skin. The test strip in the PBGM is brought into contact with the blood drop. The concentration of glucose in the blood displays on the PBGM.

The owner may use the same lancet device to perform a blood glucose curve (the glucose curve is the plotting in graph form of the results of testing multiple times throughout the day, and tells you visually how your cat is responding to the insulin). "Each measurement takes one to two minutes total, and the measuring time of the glucose meter is 30 seconds," says Dr. Reusch.

The subjects in the Zurich study used the glucose meter Glucometer Elite from Bayer and the Microlet Vaculance lancet, also from Bayer. "We find that it is easier to generate a big enough blood drop with this lancet," says Dr. Reusch.

Start with Your Veterinarian

If home glucose measuring interests you, talk to your veterinarian to obtain a recommendation for the type of meter to use and detailed instructions on how to use it. "Pet owners need very good information on which type to use, how to use, and what mistakes can happen," says Dr. Reusch. "For example, with the Glucometer Elite, measuring starts after an acoustic signal, but this signal is given even if the blood drop is too small. The meter will give a wrong result, therefore the veterinarian has to show the owner how much blood is required."

Dr. Reusch's study emphasized the importance of access to veterinary support. "Ten of the 14 [dog and cat] owners called for advice one or more times, particularly on the first day. Some had specific questions, while others simply wanted reassurance."

How Cats Respond

Success or failure with home BG testing depends on your cat's disposition,

Find Support on the Web

The site www.petdiabetes.com has lots of useful information about diabetes and different testing devices, as well as results of a survey of owners who do or do not perform home testing and why.

To interact with other owners of diabetic cats, find information, exchange tips and garner support, you can visit: felinediabetes.com.

The U.S. Food and Drug Administration regulates the medical products you use to treat diabetes — in humans and pets — including glucose meters, insulin pumps, diabetes medicines, and insulin. Visit them at: fda.gov/diabetes.

your patience, and your creativity. And not all cats adjust to being tested at home. In Dr. Reusch's study, four of the seven cat subjects resisted the procedure — and of course, the cats' resistance would artificially alter the readings. Two of the owners were not able to successfully restrain their cats.

Patience is Required

Other problems included the inability to generate negative pressure using the lancet device, and inability to obtain adequate amounts of blood. If your cat resists being restrained or is generally uncooperative, he or she will probably not be a good candidate for home testing.

Perseverance is the key to success. "It took me two days to get a large enough blood drop, two weeks to feel comfortable doing the tests, and a month to perfect a daily routine," says Dana Walker, who has been home testing her cat, Raphael, for four years. "Now it is easier to give Raphael a blood test at home than it is to give him a pill." ❏

By Karen Commings

(Dr. Lindell, Continued from page 11)

if she left her dish kitchen and came directly to you before meowing. Your cat learned to call you. She also learned that your proximity indicated that delicious food was available. Now she would produce the signal even when her dish was full.

To fine tune the behavior, you needed to teach your cat that she'd be most likely to receive food if she signaled to you while you were otherwise engaged, perhaps sleeping. Two steps were required for you to accomplish this task. First, when you were awake, you probably rewarded a "meow" with a mere "good kitty." When you were resting, however, you waited for a clear, intense signal, then rewarded this polished behavior by joining kitty in the kitchen, remaining there until she was satisfied.

Voila, a cat that calls. ❏

(Dr. Richards, Continued from page 12)

the heart and the kidneys taking the biggest hits. Failure of either or both organs is the end result. If I could make printed words shout, I'd do it here: You do NOT want to ignore this.

Your fears of the dangers of treatment are overstated, especially in light of the consequences of not treating. [Surgical removal of the overactive gland(s) is a third method you didn't mention.]

Treatment with iodine-131 — the treatment of choice for some thyroid conditions in people — is my personal favorite. I know the term "radioactive iodine" conjures up mental pictures of glowing cats, but this image is incorrect. The treatment is quite safe (Dr. Mew, the feline staff member of the Cornell Feline Health Center, will discuss this treatment in an upcoming issue of *CatWatch*), but each of the three main treatment options has advantages and disadvantages that you should discuss with your veterinarian — and I suggest doing so very soon. ❏