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DIABETES MELLITUS

What is Diabetes Mellitus?

Diabetes mellitus is a medical condition resulting in an excessive amount of sugar (glucose) in the blood. This is caused by a deficiency of insulin, which is a hormone secreted by the pancreas.

The clinical signs seen in diabetes are largely related to the elevated concentrations of blood glucose and the inability of the body to use glucose as an energy source due to the deficiency of insulin.

Diabetes mellitus affects an estimated one in four hundred cats, and is seen more frequently in middle to old-age cats, males than females, and obese cats.

What Are the Clinical Signs of Diabetes Mellitus?

The most common clinical signs seen in diabetic patients are an increase in water consumption and urination. Weight loss is also a common feature, and an increase in appetite may be noticed in some cats. Recognition of these signs is variable though, particularly because of the life-style of some cats. If a cat spends a lot of time outdoors, it may drink from ponds or pools of water outside rather than appearing to drink excessively from what is provided indoors.

How is Diabetes Mellitus Diagnosed?

The diagnosis of diabetes mellitus is made based on clinical signs, persistently elevated blood glucose concentration and the presence of glucose in the urine. However, a diagnosis of diabetes cannot be made on a single blood and urine sample as other conditions such as particular stress may also cause a transient rise in glucose levels. Confirmation of diabetes may therefore require more than one blood sample collected over a period of one to five days.

How is Diabetes Mellitus Treated?

Diabetes mellitus is a treatable condition. Although long-term treatment requires commitment, it can be very rewarding to successfully manage this condition.

1) Initial steps in treating a diabetic cat may involve removal of any predisposing causes for the diabetes. For example, the administration of some drugs predisposes cats to develop diabetes and withdrawal of these drugs may lead to resolution of the condition. Obese cats are more prone to develop diabetes and weight reduction can lead to resolution of the signs in some cats.

2) If there are no predisposing causes, or if correction of the predisposing causes does not lead to resolution of the diabetes, specific treatment is required. Although some cats will respond to oral hypoglycemic medication, many cats will require insulin injections to control the diabetes.

During the initial stages of treatment, your cat will require several hospital visits until an appropriate insulin dosage is determined. Please give insulin 6 hours prior to testing if possible as close to regular daily administration as possible. Alternatives are available for cats that cannot be brought into the hospital, please ask your doctor (www.veterinarypartners.com, www.sugarcats.net/sites/harry, and www.felinediabetes.com). Most cats will achieve initial stabilization within a few days to a few weeks. Most cats will require once or twice daily injection of a small dose of insulin. Very small needles are available which cause no pain to the cat, and within a short period of time the procedure becomes very routine. Administration times, dosages and type of insulin will be determined by your veterinarian. Feeding small frequent meals half hour prior to insulin is best, do not give insulin if your cat has lost his/her appetite.

Do Treated Cats Need to Be Monitored?

Yes, it is important to monitor treatment to make sure it is working properly, and to determine if any insulin dosage adjustments are necessary.

Monitoring can be done in part through the collection of occasional blood samples by your veterinarian, but it is particularly valuable to keep accurate records of the following information:

Daily records:

- Time of insulin injection
- Amount of insulin injected (use various locations along the back for improved uptake)
- Amount and time of food fed and consumed
- Amount of water drunk

Weekly record:

- Weight of the cat

In addition to these records, it can be valuable to monitor the quantity of glucose passed in the urine as a guide to the effectiveness of the treatment. This is best done on urine that is passed during the night or first thing in the morning. To collect urine, it is usually easiest to replace the normal cat litter with clean (washed) aquarium gravel at night, which will not soak up any urine passed. You can also place saran wrap in strips over the litter just to catch a small sample. If there is any marked change in the amount of glucose in the urine, this *may* indicate the need to alter the insulin dose, **but you should never change the dose of insulin without first discussing it with your veterinarian**. Changes in the insulin dose are usually based on *trends* in urine glucose concentrations, as there is normally some day-to-day variation.

What Happens if My Cat Receives too Much Insulin?

If a cat receives too much insulin, it is possible for the blood sugar level to drop dangerously low. For this reason it is important to be very careful in ensuring the cat receives the correct dose of insulin.

The typical signs displayed by a cat with a very low blood sugar level are severe weakness and lethargy, shaking, unsteadiness and even convulsions. If a diabetic cat shows any of these signs it is important to seek immediate veterinary attention. If more severe signs are displayed (ataxia or unsteadiness during walking, and/or convulsions) a tablespoon of honey, corn syrup or sugar solution should be given by mouth.

1. Read and reread this material so that you understand the specifics of proper regulation and how to recognize and treat hypoglycemia.
2. Purchase the supplies for treatment. Your prescription will specify the type of insulin and syringes. If you will be using urine glucose tests strips, they should be purchased at a pharmacy.
3. Give the first injection of insulin of _____units at about _____ AM/PM.
4. If your doctor has requested, measure the urine glucose twice daily for the next two-three weeks, for long term you can check weekly or biweekly. As the urine glucose drops, report when it crosses over to no glucose so as to expedite your cat's regulation.
5. Return to our hospital in 3-7 days for a blood glucose test. This should be done about 5-8 hours after an injection of insulin initially. If two injections are given each day, be sure the test is done *before* the evening injection. For sequential blood draws your vet may change the time by 2-3 hours depending on previous blood draws.
6. Once regulated, return to our hospital for a blood glucose test in 1 month. This should be done about 5-8 hours after an injection of insulin. If two injections are given each day, be sure the test is done *before* the evening injection.