Diabetes Mellitus in Cats and Dogs

Introduction

Diabetes Mellitus is a disease that occurs when the pancreas doesn’t produce enough insulin. Insulin allows glucose (a sugar) to be absorbed into the cells. When insulin production decreases, blood sugar rises. A combination of high blood sugar and glucose in the urine typically confirms the diagnosis of diabetes. Some pets (especially cats) have high blood sugar from stress alone. If there is a question about whether your pet is truly diabetic, a fructosamine test may be recommended. This measures the average blood glucose level over the previous couple of weeks and can help differentiate between a one-time elevated glucose level due to stress and persistent elevations of true diabetes mellitus.

Key Symptoms of Diabetes:

When the disease first develops, most diabetics don’t feel sick. The most common signs noticed by owners are:

- Excessive drinking
- Excessive urination
- Weight loss despite good appetite
- Weakness or muscle loss

Regulating the diabetes (by treating with insulin) is the only way to stop or stabilize these symptoms and their underlying cause.

Other Signs:

Cataracts: In dogs, high blood sugar levels cause rapid cataract. This is not generally seen in cats. Cataracts can form so quickly that a cloudy eye and vision loss are the first signs noticed at home. Cataract surgery to correct this problem can improve vision and quality of life in many pets.

Infections: Diabetics are at increased risk for infection, particularly urinary tract infections. In many cases, diabetics don’t show normal signs of an infection (accidents in the house, blood in the urine). A urine culture is often recommended in new diabetics or unregulated diabetics.

Feeding a Diabetic Pets

Diets that have a low glycemic index (meaning they don’t cause spikes in blood sugar) are ideal for diabetics. Treats that aren’t sweet are allowed, but it is important to be as consistent as possible in both the food given and the time your pet is fed. We will discuss diet options readily available as well as restrictions you should plan to follow.

Insulin

Most diabetic pets are dependent on insulin shots to control their blood sugar. There are many types of insulin on the market including some produced specifically for pets. Finding the right type of insulin and the proper dose requires time and some trial and error.

For many owners, giving insulin injections is the most intimidating part of caring for a diabetic pet. While it is normal to have difficulty giving shots the first week or so, once you have been shown how to give the insulin and get used to the process, you will be surprised at how easy it is and how little most pets mind getting their shot.

Frequently Asked Questions About Insulin Administration

- Can I hurt my pet giving the shot? No - The shots are given subcutaneously (under the skin) rather than in a vein or muscle and the needles on insulin syringes are very thin.
- When should I give the shot? Most pets receive insulin twice daily. They should be fed first and given their shot after eating.
- Where do I give the shot? On the back between the shoulder blades. Tent the skin by lightly pinching and give the shot at the base of the “tent.”
- What do I do if my pet doesn’t eat? If your pet does not want to eat, vomits or is otherwise acting ill, skip that dose of insulin. If this persists for more than one meal, your pet should be examined.
- What if I’m not sure that the shot went in? If your pet jumps or the needle comes out of the skin and you are unsure of how much insulin was given, do not repeat the injection. Instead, wait until the next scheduled dose and give the usual amount of insulin.
FAQs About Insulin Administration cont.

- **How do I store the insulin?**
  Insulin should be protected from light and temperature extremes. Storing in the fridge is ideal.

- **How often should I replace my pet's insulin?**
  Every 2-3 months is standard, but if your pet has a sudden increase in blood sugar, replacing the insulin may be recommended.

- **What kind of syringe should I use?**
  Each insulin is designated either U-40 or U-100 insulin syringe, based on the concentration of the insulin. Syringes have this designation on them. Always use U-40 syringes with U-40 insulins and U-100 syringes with U-100 insulins.

### Adjusting Insulin Dose

The best way to monitor blood glucose levels is to do a glucose curve. This is an all day appointment in which blood sugar levels are checked throughout the course of a day. This tells us 1) how low the glucose goes and 2) how long the insulin lasts. This helps us determine whether the dose and type of insulin are appropriate. This test is typically done 10-14 days after starting insulin or after a change in insulin type or dose.

Your pet’s body is used to having high blood sugar. It is important that we start with a low insulin dose and slowly work up to the right dose for your pet. Increasing the insulin dose too quickly or too frequently can cause dangerous drops in blood sugar (hypoglycemia).

**What to Watch for / When to Return to the Hospital**

Your pet should have checkups 2-3 times per year including a glucose curve even if they are feeling good. If, between those scheduled visits, your pet shows any of the following, please call or bring them in for a re-check exam and glucose curve:

- Lethargy or weakness
- Weight loss
- Loss of appetite
- Sudden increase in appetite (especially if paired with weight loss)
- Increased thirst or urination
- Vomiting or diarrhea (more than one episode of either)
- Grogginess or disorientation
- If they are still alert, try feeding a small meal. Do not attempt to feed your pet if they are unconscious or weak enough that they may not be able to swallow normally
- If they are not willing or are unable to eat, rub some corn syrup or honey on their gums
- Please seek medical attention for your pet as soon as possible

### Pancreatitis

Diabetics are at increased risk of pancreatitis (inflammation of the pancreas). Common signs of this include vomiting, abdominal pain, poor appetite, and lethargy.

### Diabetic Ketoacidosis (DKA)

In uncontrolled diabetes, fat stores are broken down resulting in a buildup of ketones (an acid) in the blood and urine, eventually making the animal feel sick. DKA is a serious condition that occurs most commonly in new diabetics, in diabetics who haven’t received their insulin, or those who have developed other diseases (pancreatitis, urinary tract infections, etc.). Signs of DKA include loss of appetite, vomiting, lethargy, and signs of uncontrolled diabetes (increased thirst and urination).

### Hypoglycemia

Hypoglycemia can be a more serious problem than high blood sugar. This can occur with overdoses of insulin (e.g. if a second dose of insulin is mistakenly given or if too much is drawn up) or if an animal’s insulin needs have changed. If your pet appears wobbly, disoriented, or spacey, it may be due to low blood sugar.

If you suspect that your pet has low blood sugar:

- If they are still alert, try feeding a small meal. Do not attempt to feed your pet if they are unconscious or weak enough that they may not be able to swallow normally
- If they are not willing or are unable to eat, rub some corn syrup or honey on their gums
- Please seek medical attention for your pet as soon as possible