



**Birchwood
Animal Hospital**

For the love of animals since 1959

Birchwood Animal Hospital

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Diabetes Mellitus and Your Cat

What is diabetes mellitus and how is it diagnosed?

- Diabetes is a disorder caused by an insulin deficiency or a lack of sensitivity to insulin, resulting in high blood sugar (hyperglycemia). Insulin is a hormone made by the pancreas, which allows cells to take up sugar from the bloodstream and use it as energy. Insulin is also important in the metabolism of fats and protein.
- Your veterinarian is able to diagnose this disorder based on a physical exam and a routine blood and urine test.



What causes this disease?

- Diabetes occurs when the pancreas does not make sufficient insulin to meet the body's needs. The body may require more insulin because the tissues are less sensitive to it. This may be brought about by genetics, obesity, poor diet, drug reactions and a variety of other factors.

Why is treatment important?

- Animals with diabetes mellitus have very high blood sugar. This produces a variety of symptoms, which may include increased drinking and urination with dehydration, significant weight loss, depression, weakness and increased hunger or lack of appetite. Other complications may include cataracts and blindness, as well as infections.
- Diabetes becomes a true medical emergency when it remains untreated and the body begins to burn fat for energy, resulting in excessive ketone production. Ketones are toxic to the body in large quantities.
- Treatment requires a commitment of time for the owner. With daily insulin injections, diet and exercise management, your pet can live a happy, comfortable life. The risk of complications is greatly reduced with treatment, and most pets will live a much longer life than those not treated. Some cats receiving treatment may even go into remission.

Getting Started: determining an appropriate dose of insulin

- Newly diagnosed diabetics are placed on daily insulin therapy. It takes the body some time to adjust to the insulin. In cats we usually use glargine insulin, also known as Lantus. To determine the appropriate insulin dosage for your pet, a spot check of the blood sugar is taken _____ days after insulin therapy is begun. The sample should be collected **4-6 hours after** the insulin is given. Subsequent samples will be taken as determined by your veterinarian.
- Unlike human diabetics who may check their blood glucose several times a day with an electronic instrument, this is not done for animals. Reasons for this include practicality issues and an inability to monitor our animals 24 hours a day. As well, animals have shorter life spans than people so we do not see as many long-term complications with slightly higher blood sugar. We rely on periodic spot glucose samples to determine how your cat is doing.

Handling Insulin:

- **Insulin should be kept in the refrigerator at all times, be sure to replace it every 3 months.**
- **Caninsulin:** *Shake the vial thoroughly until a homogenous, uniformly milky suspension is obtained. Foam on the surface of the suspension formed during shaking should be allowed to disperse. In case the suspended particles have settled during the waiting period, the product should be mixed again, gently this time, prior to use, to maintain a homogenous, uniformly milky suspension.*
- **Levemir (Detemir):** *No mixing/shaking required.*
- **Lantus (Glargine):** *No mixing/shaking required.*

Handling Syringes:

- Keep syringes out of reach of children.
- Store the syringe in its protective wrapping to maintain sterility.
- Syringes are for single use and should be used once only.
- Replace the cap after using the syringe and place it in a safe container such as a clean and dry bleach container. They may be brought back to the clinic for safe disposal.

Food BEFORE Insulin:

- It is very important that your animal eats before getting the insulin injection.
- **If your pet has no appetite and refuses to eat, do not give the insulin.** Call your veterinarian for further advice. An animal that gets an insulin injection and refuses to eat may subsequently have low blood sugar, which may result in an emergency.

How to Draw Up Insulin:

1. Remove the cap from the syringe, and push the plunger all the way in so no air is in the syringe.
2. Insert the needle into the bottle.
3. Turn the bottle upside down and draw back the plunger, filling the syringe with the correct amount of insulin.
4. Hold the plunger at this level while withdrawing the needle from the bottle.
5. Double check that you have the right amount of insulin in the syringe.
6. Ensure there is no air in your syringe. If any air is present then flick the side of the syringe to float the air bubbles to the top, then depress the plunger to expel the air.

How to Give an Injection:

IMPORTANT: Always have the same family member give the injection, or have a schedule posted so that double injections are not given. Double doses can cause serious complications.

1. Have someone else hold your pet as still as possible.
2. Hold the syringe in your dominant hand.
3. Pick up a fold of skin, picking a different spot each day.
4. Push the needle through the skin quickly, while avoiding depressing the plunger.
5. As we want to avoid injecting into a blood vessel, pull back gently on the plunger to ensure there is no blood drawn back. If you see blood, pick a different spot.
6. Push the plunger into the syringe to inject the insulin.
7. Withdraw the needle from your pet's skin.
8. Place the cap back on the needle and discard properly.
9. Dry food should be avoided at all times, even as a reward or distraction.

What Do I Feed My Diabetic Pet?

- Cats are special when it comes to diabetes: weight loss is often important, as is a high protein diet. Each animal has different dietary needs based on their weight and medical history. In many cases, a veterinary diabetes management diet may be prescribed. These include Purina DM Formula and Royal Canin Diabetic DS Formula. Canned diets are preferred over dry as they contain less carbohydrate. Please discuss these issues with your veterinarian or veterinary technologist.
- As a general rule, the diabetic patient is fed at least twice a day to maintain proper blood glucose levels.
- Table scraps should be avoided, and a consistent high quality food should be fed.

What About Exercise?

- There are no restrictions on your pet's normal activity.
- Diabetic cats should be kept indoors to ensure their safety.

When Should I be Concerned?

- ✓ If your pet accidentally receives a double dose or refuses to eat, yet was given an insulin injection, call your veterinarian immediately.
- ✓ Contact your veterinarian immediately if you see your animal exhibit:



- ✓ **Seizures**
- ✓ **Depression/Coma**
- ✓ **Drunken State**
- ✓ **Lack of Appetite**
- ✓ **Cataracts**
- ✓ **Atypical behaviour**

Keep corn syrup on hand to use in case of emergency!

We can provide details on how and when it should be administered.

After hours emergency: Winnipeg Animal Emergency Clinic (204)452-9427

Special Considerations:

- Diabetic animals who are well controlled live happier, longer lives than those who are not on insulin therapy. However, even controlled diabetics are more susceptible to other health problems than the average pet. These can include an increased frequency of infections (especially bladder infections), slowed healing and cataracts, among others.
- Diabetic females should not be bred as it is difficult to control diabetes during pregnancy, and may cause a life-threatening situation.

Cost:

- The financial cost of caring for a diabetic pet is an important consideration. The cost does vary depending on any additional problems which may arise and the size of your animal. To estimate your costs, it is best to break down the treatment stages:
 - a. Initial diagnostic workup
 - b. Stabilization
 - c. Maintenance

Your veterinarian can discuss the costs involved for each stage.

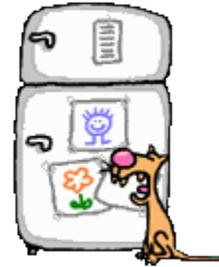
- A commitment of time is also required of diabetic pet owners. This commitment may not seem easy, especially initially, but can be very rewarding for both the pet and owner.

Diabetic Diet Options

It is strongly recommended to feed diabetic cats only canned food that has less than 10% of metabolize-able energy from carbohydrates. The following diets fall in this category:

Diets available from veterinary facilities:

- Purina DM (dry or canned)
- ROYAL CANIN/MEDI•CAL Reducing (overweight cats)
- ROYAL CANIN/MEDI•CAL Diabetic (dry only)
- ROYAL CANIN/MEDI•CAL Calorie Control (overweight cats)
- Hill's m/d



Diets available from grocery/pet stores:

- Fancy Feast – all flavours (*except grilled, minced, roasted or sliced*)
- Friskies – all flavours (*except with egg or in gravy*)
- Heinz 9-lives - ground meat dinner, hairball (all flavours)
- Iams - kitten, turkey & giblets, chicken & rice active, maturity
- Pro Plan - all flavours (*except with rice*)
- Sheba - tender beef, gourmet salmon dinner
- Whiskas – chicken & tuna dinner, chicken dinner, ground-any flavour

Premium diets available from select pet stores:

- Eagle Pack – chicken & lamb, ocean fish & tuna, turkey & barley
- Evolve – chicken, turkey, seafood, felidae
- Natural Choice – chicken & liver, turkey & giblet, salmon & ocean fish, ocean fish & tuna, chicken & liver (kitten), chicken & turkey, senior
- Newman's Own – chicken & brown rice, chicken & salmon, turkey
- Nutro – max chicken & lamb, max kitten (all flavours), gourmet California, chicken supreme, gourmet lamb & turkey cutlets, gourmet salmon & whitefish entree, gourmet veal
- Pro Plan – all flavours (*except with rice*)
- Wellness – all flavours
- Wysong – beef all meat, chicken all meat

Food available from grocery stores

(not to make up more than 25% of the diet)

- meat & poultry (cooked)
- hearts (cooked)
- liver (cooked)
- baby food – meat flavours

