

## **Education for Families with a Diabetic Pet**

### **What is Diabetes Mellitus?**

In order to understand the problems involved with diabetes mellitus it is necessary to understand some of the normal body's metabolism.

The cells of the body require sugar, known as glucose, to survive. Glucose comes from the diet. After eating, glucose is released from the food into the blood stream, and excess glucose can be stored in various forms in the body for use at a later time. In order for the cells of the body to utilize glucose a special hormone called insulin must be present. Insulin allows cells to move glucose from the blood stream into the hungry cells.

### **Diabetic Animals**

In diabetic animals there is a shortage of insulin, or an inability of the cells of the body to use the insulin already present. Without insulin these cells are unable to utilize the glucose they need for survival and they begin to slowly starve. Furthermore, a large excess of glucose builds up in the blood because the cells are not using it as fuel. This is why the diabetic pet has a high glucose measurement when its blood is tested (referred to as hyperglycemia—too much glucose in the blood). In a normal pet, the kidneys are able to prevent glucose in the blood from being lost into the urine. In diabetic animals, the kidneys are overwhelmed with glucose and the excess glucose spills into the urine and is lost. This explains a second laboratory abnormality used to diagnose diabetes—glucosuria (too much sugar in the urine). Additionally, glucose is able to draw water with it into the urine. This leads to excess urine production and excess thirst to keep up with the fluid lost in the urine.

### **Main Clinical Signs of Diabetes Mellitus**

- Excessive eating in the face of weight loss
- Excessive drinking
- Excessive urination

### **Other Signs**

- Cataracts: In dogs, excess sugar levels can enter the lens of the eye causing cataract formation. Because cat's lenses are different, this phenomenon occurs only in dogs.
- Urinary Tract Infections: All the sugar in the urine makes an excellent broth for bacteria to grow.

### **Treatment for Diabetes Mellitus**

Because the signs and symptoms of diabetes mellitus are caused by an insulin shortage it makes sense that we can treat the diabetic by administering insulin in the form of an injection. Although many pet owners become very nervous at the thought of giving their pet an injection twice a day, given time they tend to find that it is actually very simple and easy. Many owners find it easier to administer an injection or shot than give their pets a pill. In addition, due to the very small needle size used, most pets don't find the procedure painful and many look forward to their injections because they learn that they are associated with mealtime.

### **Administering Insulin Injections**

One of our staff members will thoroughly train you to give an insulin injection. If you are uncomfortable with the process, we are glad to schedule multiple training sessions with you and your pet. Try not to worry; it is a very simple procedure with very low risk to you or your pet. For more information on insulin administration, please go to our website: [www.belmontshorevet.com](http://www.belmontshorevet.com). In the "links" section, please visit [veterinarypartners.com](http://veterinarypartners.com) and search "insulin administration guide." You can also view an informative video by clicking on the Cornell Feline Health Center link.

### **Things to remember:**

- Keep a diary for your pet. You should have at least two entries a day that include your pet's appetite; the time and amount of insulin administered; and any changes noted in weight, drinking habits or urination habits.
- Never adjust the insulin dose yourself. If you feel that the insulin dose your pet is receiving needs to be adjusted please call your doctor for an appointment. Many of the parameters that we use to evaluate your pet's response to medication can be affected by recent changes in insulin dose.
- Before each insulin injection, the insulin bottle should be slowly and gently rolled. Avoid shaking the bottle as this can destroy the fragile insulin molecules. Insulin should always be REFRIGERATED.
- If you are unsure that you gave the full injection please try not to make up for this shortage by giving more. If in doubt, IT IS ALWAYS better to give too little insulin than too much.
- It is best to feed your pet two equal meals a day approximately 12 hours apart. After your pet finishes its meal, administer its insulin dose. If your pet doesn't eat its meal DO NOT administer the insulin. Call your veterinarian. Remember, IT IS ALWAYS better to give too little insulin than too much.
- A specially formulated high protein, low carbohydrate food, such as Purina DM (Diabetes Mellitus) for cats, or Purina OM for dogs, should be used.
- Consistent moderate exercise is important to properly maintain the daily insulin requirements.
- During the first few weeks (or sometimes months) of treatment several consultations and tests may be necessary to properly regulate your pet. Changes in insulin dose, diet and exercise may be necessary.

### **Hypoglycemia**

Hypoglycemia means having a low blood sugar. Low blood sugar is an infrequent yet potentially life threatening complication of insulin administration. Low blood sugar can occur with an insulin overdose or when insulin is given but the pet has not eaten. If your pet has seriously low blood sugar it may appear to be wobbly or drunken; it may also become lethargic, have seizures, or enter a coma like state. If this occurs you can quickly and easily increase your pet's blood sugar by applying honey or Karo syrup to their gums. The sugar in the honey or syrup is absorbed directly through the surfaces of the lips and gums, and these sugars can counteract the effects of low blood sugar. After this application, please call us immediately for further instructions (562-961-0028).

**Any Questions? Please Call!**

We understand that this information may seem confusing and overwhelming initially, but as time passes we have confidence that you will become an expert at treating and monitoring your diabetic pet. During the first few weeks we anticipate that you will have many questions and we expect to hear from you often, sometimes daily. This is normal and we will look forward to answering all of your questions.