



CLIENT INFORMATION ON DIABETES MELLITUS IN DOGS AND CATS

Diabetes mellitus is a condition caused by inadequate or inactive insulin production. The body's cells need glucose (sugar) as an energy source. Insulin, produced by the beta cells in the *pancreas*, is a hormone used by the body to control blood glucose levels and to assist its entry into the cells. Diabetic animals cannot deliver glucose to the cells, causing it to accumulate in the blood, and, once a certain level is reached, spill over into the urine. The body must then break down fat and muscle to meet its energy needs. Thus, diabetes is similar to starvation in the midst of plenty, as the glucose that is overabundant in the bloodstream cannot get into the cells where it is vitally needed.

Diabetes has been divided into two categories, based on the classification used for people. **Type I**, or Insulin Dependent Diabetes Mellitus, results from total or near-complete destruction of the beta-cells. **Type II**, or Non-Insulin Dependent Diabetes Mellitus, is different because some insulin-producing cells remain. However, the amount produced is insufficient, there is a delayed response in secreting it, and the tissues of the body are relatively resistant to it. Dogs appear to only suffer from Type I Diabetes, while cats have been shown to have Type I or Type II Diabetes.

SYMPTOMS AND DIAGNOSIS OF DIABETES MELLITUS

Diabetes most commonly manifests itself with four classic signs: 1) **weight loss**, 2) a **ravenous appetite**, 3) **increased urination**, and 4) **increased thirst**. Not all of these signs are readily seen in every diabetic animal, but usually you will have seen at least two of them. Other signs may include lethargy, vomiting and/or diarrhea, a flaky and dull hair coat, or an abnormal, somewhat "flat-footed" gait. Like diabetic people, pets with diabetes are more prone to infections, especially in the urinary tract.

Diagnosis of the disease is made primarily through blood testing and urinalysis. While elevated blood and urine levels indicate Diabetes mellitus, care must be taken in interpreting test results, as some animals (especially cats) may experience a significant rise in blood sugar when stressed. Other diseases that may secondarily result in diabetes must also be considered. Generally, though, if both the blood and urine glucose levels are elevated in a pet with at least two of the classic signs of diabetes, a diagnosis of Diabetes mellitus can be made.

TREATMENT CONSIDERATIONS: A BRIEF OVERVIEW

The overall goal of treatment is to keep the pet's blood sugar levels within the normal range for as much of the day as possible. This is accomplished primarily through the daily administration of *insulin* by injection to make up for the insulin that the animal's body is not producing on its own. Factors influencing treatment include the following (more specific details are contained in an additional handout):

- While some animals may be maintained on a constant insulin dose, others may require changes in insulin dosage to keep their insulin levels stable.
- Diet influences insulin levels, such that special prescription diets may be recommended for your pet.
- Observation of your pet's eating and drinking habits, monitoring of his/her urine *glucose* and *ketone* levels, as well as periodic blood testing are vital tools for planning insulin dose adjustments.

Most importantly, **a blood glucose level that is too low is much more dangerous than one that is too high**, so care must be taken in administering the insulin such that too much is not given. This is especially true in cats, which can experience a sudden restoration of their own pancreas' ability to make insulin, leading to an insulin overabundance and possible life threatening hypoglycemia (low blood sugar).

While Diabetes mellitus may not be a curable disease, treatment with insulin often allows your pet to live a comfortable, healthy life. Careful monitoring of your pet will greatly aid in the control of blood glucose levels.