

DIABETES MELLITUS

Diabetes mellitus occurs in dogs and cats. It is defined as high blood sugar (*hyperglycemia*), and results when the pancreas is unable to produce enough *insulin* to meet the animal's requirements, or when the animal's cells become resistant to insulin. Insulin is a hormone that is needed to transport glucose (blood sugar) as well as amino acids and minerals into cells. When a lack of insulin or insulin resistance occurs, glucose cannot move into the cells and the glucose in the blood rises to abnormally high levels.

SYMPTOMS

An animal with diabetes mellitus will have some or all of the following signs: weakness, increased thirst, frequent urination and possible incontinence, "sticky" urine, rapid weight loss, depression, abdominal pain and/or vomiting. An animal may also show signs of increased hunger, or loss of appetite in later stages. In some animals, sudden blindness due to cataract formation may indicate diabetes.

CAUSES

Diabetes mellitus in dogs and cats results from damage to the pancreas. Predisposing factors are: OBESITY, poor diet, genetic predisposition, hormonal abnormalities, a previous history of pancreatic disease, stress, and drugs. In dogs, females are affected twice as often as males. In cats, diabetes is more prevalent in males. In both species, older animals are generally affected.

DIAGNOSIS

Your veterinarian will perform a thorough physical examination of your pet and ask you questions about your pet's health history. Generally, a blood sugar level will be tested and a urinalysis is performed. Following these tests, complete bloodwork including a chemistry panel, blood count, and thyroid hormone levels will be assessed. Diabetes is often complicated by urinary tract or other infections, other hormonal or metabolic disorders, liver disease, or a build-up of chemical compounds called *ketones* in the body. If there are complications, more testing may be necessary.

TREATMENT

Treatment requires a commitment of time and diligence from the owner. There is no cure for diabetes mellitus, but, as with humans, it can be controlled with insulin injections, diet, and exercise management. With such therapy, your pet can lead a happy, comfortable life. Once your pet has been diagnosed with diabetes mellitus, your veterinarian will determine a specific insulin requirements. As each pet's insulin needs are unique and often vary from day to day, frequent re-evaluation over the next several weeks is required until satisfactory control is achieved. The animal's insulin needs may change due to alterations in diet, exercise and environmental stresses. Once control is achieved, a blood glucose evaluation should be completed every 2-4 months. If difficulty is encountered in regulating an animal, a blood glucose curve and/or hospitalization for 1-2 days may be indicated.

HOME CARE

You must give your pet daily injections of insulin, generally for the rest of its life. It is also important that the insulin injections be given at the same time each day, with a meal, twelve hours apart if twice daily injections are indicated. (Varying injection times by 60 minutes or less is generally acceptable.) Oral medication is occasionally effective for diabetic cats.

The injection is given just under the skin and is generally not painful to your pet. Your veterinarian will show you how to administer the injections. Remember, our hospital staff is here to help you care for your pet.

(OVER)

DIET

Dietary therapy is an *essential* component of regulating a diabetic patient. Currently, high fiber diets are utilized in dogs, and high protein/ low carbohydrate diets are recommended in cats. It is important to follow dietary and feeding schedule recommendations exactly. Your veterinarian will discuss special dietary requirements with you further.

EXERCISE

There are no restrictions on your pet's normal activity. However, it is important that exercise be moderately regulated and consistent in order to keep the insulin requirements as level as possible. Short bursts of strenuous activity may increase the risk of hypoglycemia and weakness.

HOME MONITORING

Things to watch for:

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| <input type="checkbox"/> Seizures | <input type="checkbox"/> Increased water intake |
| <input type="checkbox"/> Disorientation/ drunken state | <input type="checkbox"/> Increased urination/ accidents |
| <input type="checkbox"/> Weakness | <input type="checkbox"/> Cataracts |
| <input type="checkbox"/> Lack of appetite | |

If your pet exhibits any of these signs, please contact your veterinarian as soon as possible.

SPECIAL CONSIDERATIONS

Although diabetes mellitus can generally be controlled with insulin and diet, diabetic animals are susceptible to other health problems. Diabetes mellitus can cause an increased incidence of infections (especially bladder infections), delayed wound healing, cataracts, gastrointestinal dysfunctions, pancreatitis, liver disease, kidney disease, heart disease and nervous system disorders.

You should not breed a diabetic female animal because it is extremely difficult to control diabetes during pregnancy and estrus, and it may cause a life-threatening situation. There also exists the risk of passing the disease to the offspring. If not already done, female animals should be spayed and male animals should be neutered as soon as a diagnosis of diabetes mellitus is made.

COSTS

The cost of caring for a diabetic pet is an important consideration. The cost will vary, depending upon additional health problems that may occur and the size of your animal. It is best to break down the treatment stages: 1) initial diagnostic work-up, 2) stabilization, and 3) maintenance costs. Your veterinarian will discuss the costs involved for each stage. Physical examinations cost from \$30-55. Initial blood testing and urinalysis will run \$230-250. Antibiotic therapy may run \$30-70. Insulin costs approximately \$30 per bottle, with 10 ml's per bottle (about ½ oz.), and 100 units of insulin per ml. How long the bottle lasts is dependent upon the number of units your pet is receiving at each dose. A box of 100 1/3 cc syringes is about \$25. Specialized diets may run from \$18 - 40 per case/ bag, depending on size and type. Follow-up blood sugar tests are approximately \$35 per test. Again, it is difficult to predict exactly which diagnostic tests or treatments your animal may require.

Beyond the monetary cost, there is a time commitment required of the owner(s) of a diabetic pet. You will need to administer the insulin injections and feed your pet at the same time each day. This may affect your own work/ home schedule, travel, care during vacations, etc. Such a commitment may not seem easy, but it can be very rewarding for both pet and owner. We do offer extended care for diabetic pets in our hospital facility, with insulin injections and feeding schedules monitored by veterinarians and licensed veterinary technicians. Please speak with us if you are interested in this service.

Our hospital staff welcomes any questions you may have concerning your pet's health. Please feel free to contact us at any time.