



Diabetes in Dogs and Cats



In healthy animals, insulin is secreted by the pancreas after a meal and moves blood sugar into cells, where it is converted into energy. Diabetes mellitus occurs when the pancreas does not produce enough insulin (Type 1) or when the body's cells don't respond well to insulin (Type 2). Most animals suffer from Type 2 Diabetes. In either case, glucose cannot enter the cells, blood glucose levels rise in the bloodstream, and glucose spills over into the urine. A complicated cycle ensues, as sugar in the urine causes the animal to pass large amounts of dilute urine and to drink large quantities of water. Appetite is controlled by glucose levels in the brain. Without insulin, the brain doesn't receive the signal that appetite has been satisfied, and the pet responds by eating more and more. Weight loss occurs because the pet's body cannot use glucose appropriately and it is then forced to burn fat for energy.

The classic signs of diabetes in dogs and cats are:

- Weight loss
- Increased thirst
- Increased appetite
- Increased urination

Laboratory tests showing persistently high levels of glucose in the blood and urine will confirm a diagnosis of diabetes. Your veterinarian will run additional blood and urine tests to look for other conditions that often occur in pets with diabetes, such as: bladder, kidney, or skin infections; Cushing's disease (another endocrine imbalance); pancreatitis; fat accumulation in the liver; and cataracts in the eyes.

Diabetes is a treatable disorder in pets and, with proper control, these animals can live for many years. However, successful treatment requires a major commitment from the pet parent who, in most cases, will need to inject insulin once or twice a day, feed a prescribed diet on a consistent schedule, and carefully monitor the pet's appetite, weight, water consumption, urine output, and possibly test for glucose in the urine. As difficult as caring for a diabetic pet may sound, most owners are very successful and find that it quickly becomes routine.

Initially many pets are hospitalized for few days for testing and to start the regulation process. Your pet will receive insulin and blood glucose levels will be monitored carefully to determine the type of insulin, effective dose, and frequency of administration that is appropriate. Some newly diagnosed diabetic pets that are very ill and have been vomiting or have not been eating or drinking for several days may have a dangerous complication called *keto-acidosis*, and a week or more of hospital care may be needed to stabilize the pet's condition with intravenous fluids and insulin.



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Before your pet is sent home, you will receive detailed instructions and training on how to administer insulin injections twice a day. You may be relieved to find that the technique is not difficult to master and the injections are not painful or upsetting for your pet. Some pets may only need one injection each day. New insulin products have recently been introduced and others are in development, so there are more options than ever before for diabetes treatment in dogs and cats. Oral diabetes medications are not very effective in dogs and cats and your pet will most likely require insulin injections.

Your veterinarian's instructions must be followed carefully. If too much insulin is given, low blood sugar or *hypoglycemia*, a serious complication that can result in seizures, blindness, coma or death, could occur. If too little insulin is given or treatment is inconsistent, diabetic *ketoacidosis (DKA)* can occur. Animals with DKA have no appetite or a reduced interest in food, feel nauseated, often vomit, and become dehydrated. This is a life threatening situation.

Diet is an important component of diabetes treatment because insulin needs are closely related to the type and amount of food eaten by the pet. Your veterinarian will recommend a diet appropriate for your pet to help better regulate his or her blood sugar levels. If your pet is overweight or obese, a weight management diet may be prescribed. As your pet loses weight, less insulin may be needed. *When* your pet is fed is also important: ideally, diabetic pets should

be fed two meals a day, just before each insulin injection.

Your pet's insulin needs may change over time—for example, if your pet loses weight, is exercising more or less, or develops another health problem—and this can necessitate a change in the type of insulin or frequency of injection. At first, your veterinarian will need to monitor your pet's blood glucose levels frequently. Once good control is achieved, you'll bring your pet in for a checkup every 2 to 4 months or more often if other health problems develop.

Animals with diabetes mellitus are more prone to the development of other complications. Therefore, it's important to closely monitor your pet's appetite, urine production, and urine glucose levels at home and alert your veterinarian **immediately** if there are any significant changes.

You may feel overwhelmed by the diagnosis of diabetes in your pet and will have many questions. Consult with your veterinarian to ensure the best possible outcome for your beloved companion.