

## Common Conditions in Senior Dogs: Diabetes Mellitus



Diabetes mellitus is a common disorder in middle-aged and older dogs, particularly those who are overweight or obese. It affects all breeds and both sexes, although it is somewhat more common in female dogs. Diabetes mellitus is also referred to as “sugar diabetes” because it results from the failure of the pancreas to regulate blood sugar, or glucose. *Juvenile diabetes*, which occurs in puppies less than a year of age, is uncommon. This handout focuses strictly on diabetes mellitus in older dogs.

In healthy dogs, 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). In either case, glucose cannot enter the cells, blood glucose levels build up in the bloodstream, and glucose spills over into the urine. A complicated cycle ensues, as sugar in the urine causes the dog 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. Paradoxically, the pet will lose muscle mass despite the increased appetite because the

glucose cannot be used by the body. Thus, the classic signs of diabetes in dogs are:

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

Excessive urination is often the sign that prompts owners to bring their dog in to the clinic for an exam.

**Contact Greenwood Lake Animal Hospital immediately if your dog displays any of these signs, even though he or she may not appear to be terribly ill. The consequences of untreated diabetes can be severe.**

Laboratory tests showing persistent high levels of glucose in the blood and urine will confirm the diagnosis. Your veterinarian will run additional blood and urine tests to look for other conditions that often occur in dogs 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 dogs and, with proper control; these dogs can live for many years. However, successful treatment requires a major commitment from the pet owner 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 dog’s appetite, weight, water consumption, urine output, and test for glucose in the urine. As difficult as caring for a diabetic pet may sound, most owners are able to achieve success and find that it quickly becomes routine.

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

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. Larger dogs 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. Oral diabetes medications are not effective in dogs. 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. Dogs with DKA have no appetite or a reduced interest in food, feel nauseated, often vomit, and become dehydrated.

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 high-fiber or high-protein diet that is lower in sugar and digested slowly. If your dog is overweight or obese, a weight management diet will be prescribed. As the dog loses weight, less insulin may be needed. *When* your dog is fed is also important: ideally, diabetic dogs should be

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

Your dog's insulin needs may change over time—for example, if the 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 dog's blood glucose levels frequently. Once good control is achieved, you'll bring your dog in for a checkup every 2 to 4 months or more often if other health problems develop. Of course the clinic staff is always available to answer any questions you may have about the care of your pet.

Dogs with diabetes mellitus are more prone to the development of other complications. Therefore, it's important to closely monitor your dog'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 dog and will have many questions. Your veterinarian and the entire clinic staff will work closely with you to ensure the best possible outcome for your beloved companion.**

