

Canine Diabetes Mellitus

- Most diabetic dogs have diabetes mellitus type 1, meaning the body fails to make enough insulin to serve its needs.
- After treatment for diabetes begins, periodic blood and urine tests may be recommended to help ensure that the insulin dosage is right for your dog.
- Many dogs live active, happy lives once their diabetes is well regulated. However, insulin therapy and regular monitoring at home and by your veterinarian are necessary for the rest of your dog's life.

What Is Diabetes Mellitus?

Diabetes mellitus is an illness caused by the body's inability to either make or use insulin, which is a hormone produced and released by specialized cells in the pancreas. Insulin permits the body's cells to take sugar (glucose) from the blood and use it for their metabolism and other functions. Diabetes mellitus develops when the pancreas doesn't make enough insulin or when the body's cells are unable to use available insulin to take glucose from the blood.

Type 1 diabetes mellitus (referred to as "insulin dependent" diabetes) occurs when the pancreas doesn't make enough insulin. Type 2 diabetes (more common in cats and humans) has been called "relative insulin deficiency"; it occurs when the body's cells develop "insulin resistance," meaning that they are unable to effectively use available insulin, or when the pancreas is producing some insulin, but not enough to serve the body's needs. Most diabetic dogs have type 1 diabetes mellitus. Lifelong administration of insulin is generally required to control this illness.

What Are the Clinical Signs of Diabetes in Dogs?

Diabetes can exist for a while before it begins to make an animal obviously ill. Clinical signs may vary depending on the stage of disease, but they can include the following:

- Increased drinking and urination
- Urinary accidents in the house

- Weight loss
- Vomiting
- Dehydration
- Lethargy (tiredness)
- Increase or decrease in appetite

How Is Diabetes Diagnosed?

Your veterinarian may suspect that your dog has diabetes if any suspicious clinical signs, such as increased drinking and/or urinating, have been observed at home. After performing a thorough physical examination, your veterinarian may recommend some of these tests to help confirm a diagnosis:

- **CBC (complete blood count) and chemistry profile:** When a pet is ill, these tests are commonly performed together during initial blood testing to provide information about the pet's organ systems. The CBC and chemistry profile may show dehydration, an elevated blood sugar level, or other changes that can occur with diabetes.

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- **Urinalysis:** Evaluation of a urine sample may show the presence of sugar (glucose) in the urine if a dog has diabetes.
- **Fructosamine:** Fructosamine is a protein in the blood that binds very securely to glucose. The fructosamine level is therefore a close estimation of the blood glucose level, but it is less likely to change due to stress and other factors that affect the blood glucose level. Additionally, the fructosamine level indicates where the blood

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sugar levels have been during the previous 2 to 3 weeks. In a dog with diabetes, the blood sugar levels are usually high for long periods of time, which would be reflected by an increased fructosamine level.

How Is Diabetes Treated?

Because dogs tend to have type 1 diabetes mellitus, insulin injections are generally started at diagnosis and continued for the rest of the pet's life. Your veterinarian may also recommend dietary changes to help control your dog's diabetes. It is very helpful to write a medication schedule for your pet on the calendar, including the date and time that the medication needs to be administered, and to maintain

accurate records. This will help you to avoid forgetting to give insulin to your pet and allows you to track your pet's treatment.

After treatment begins, periodic blood and urine tests are generally recommended. This helps ensure that the insulin dosage is right for your dog. Your dog's weight, appetite, drinking and urination, and attitude at home can all provide useful information that helps determine if his or her diabetes is being well managed. Your veterinarian will consider all of these factors when making recommendations for continued management.

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