

# Diabetes Mellitus in Dogs

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## What is Diabetes Mellitus?

Also known as Type 1 or insulin dependent diabetes, this disease impairs the body's ability to utilise carbohydrates and sugars. The pancreas produces the hormone insulin which regulates the uptake of sugars into cells throughout the body. In diabetic dogs, either the pancreas is defective and insulin is not being produced, or it is in fact being produced but the body is not recognising and using it appropriately. In some cases, there is a genetic predisposition for the body's immune system to destroy insulin producing cells. In other cases, genes can make the dog more susceptible to diabetes in association with other factors such as obesity, illness or exposure to some drugs in large doses (corticosteroids or reproductive hormones). Without insulin, sugar builds up in the blood causing an array of problems. There is no cure for diabetes, but it can be controlled with insulin injections, diet and exercise. Once the disease begins, your pet will need careful monitoring and insulin injections, usually twice a day, for the rest of its life.



## What are the Signs or Symptoms?

Symptoms may go unnoticed at first, as the onset of the disease is usually gradual. The first sign will usually be an increase in the amount the dog drinks and urinates. Affected dogs will also be hungrier because they cannot utilise the sugar in their blood, but then tend to lose weight because they are burning body fat for energy almost exclusively. Fat can then accumulate in the liver. When blood sugar is about twice its normal level it enters the urine, causing excessive thirst and urination. Long term problems include the development of cataracts, liver disease, pancreatitis and an increase in the occurrence of bacterial infections especially of the urinary tract. Persistent infections of the bladder and skin are common. If diabetes is left untreated, dogs will eventually develop ketoacidosis, a serious illness that can develop quite quickly over a few days. Waste products called ketones build up as a result of fat metabolism and causes depression, vomiting, breathing problems and dehydration which may lead to eventual coma or death. Treating ketoacidosis can be very expensive and may not be successful.

In severe cases of diabetes, signs are evident by six months of age. Affected puppies tend to eat and drink more than normal, but grow quite slowly. They urinate a lot and their faeces are soft. In later onset, diabetes does not develop until middle age. Signs include an increase in food and water intake and frequent urination combined with weight loss.

## How is it Diagnosed?

If your dog is showing symptoms of diabetes, you will need to take it for a physical examination by a vet, who will also test for sugar and ketone levels in the blood and urine.

### **How is it Treated?**

If caught early and there are no other complications, then insulin treatment, diet and exercise will balance out blood glucose levels and help minimise daily fluctuations. It may be necessary to test glucose levels in the urine or blood on a daily basis, and then inject insulin up to twice a day. If your dog's diabetes is due solely to obesity and there are no other complications, it should improve significantly or even fully recover once its weight is under control.

Complications from insulin treatment can occur if the dose is not right. If given too much insulin, hypoglycaemia or low blood sugar can occur. If not enough, secondary problems such as cataracts and liver disease may develop. If you are committed to helping your dog by carefully following a treatment plan provided by your vet, then your dog can still lead a happy, healthy long life.

### **How can you Avoid Buying a Dog with Diabetes?**

Diabetes appears to be an inherited trait in some breeds, although the mode of transmission has not yet been identified. However, to reduce the incidence of this disease, it is recommended that dogs with diabetes, along with their parents and siblings should not be used for breeding.

Most dogs that are susceptible to diabetes will not develop the disease until after the age of five, so if you are purchasing a puppy, it is important that you enquire about the health status of the parents. If you are buying an older dog however, then a general vet check should be performed before purchase if you are concerned about diabetes. If the dog is obese or has had pancreatic problems in the past it will be at greater risk of developing diabetes. Reproductive females are also at higher risk.