



# Diabetes Mellitus

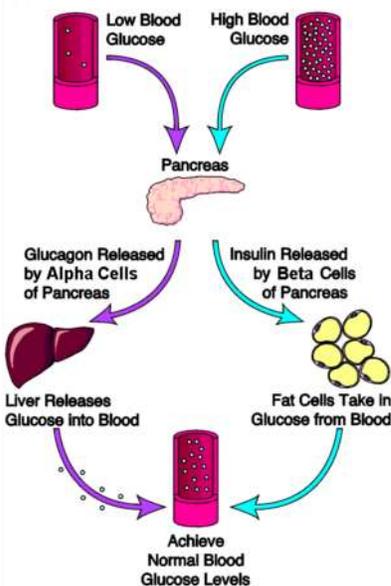
Diabetes mellitus is a disease where the body cannot control the glucose (sugar) levels within the body. Diabetes mellitus is what people mean when they talk about diabetes. There is another condition called diabetes insipidus that has some similar signs but is completely different and has nothing to do with sugar levels or insulin.

Some drugs can also make a pet more prone to developing diabetes such as steroids (like prednisolone or cortisone) and some hormones.

## Signs

One of the most common early signs of diabetes is increased thirst and urination. As the glucose levels increase in the blood stream, it reaches a point where the body cannot keep the glucose out of the urine. Once this happens, water will follow the glucose into the urine.

A pet with diabetes will also feel hungry because the body is starving, regardless of the amount of food, because it cannot properly use the energy. Weight loss often occurs. A diabetic pet will be more prone to health problems such as skin infections and liver disease. Kidney and bladder infections are common because of the extra glucose in the urine. This glucose is also a source of energy for bacteria, and they will take advantage of the opportunity.



Glucose is the body's main energy source. The body normally responds to high glucose in the blood by releasing insulin from the pancreas. Insulin causes the cells of the body to take the glucose from the bloodstream and use it.

In a cat or dog with diabetes mellitus, the body does not produce enough insulin. Therefore, the

glucose remains in the blood stream and is unavailable for the body to use. This causes the body's cells to starve. Without treatment, diabetes can lead to serious complications and death.

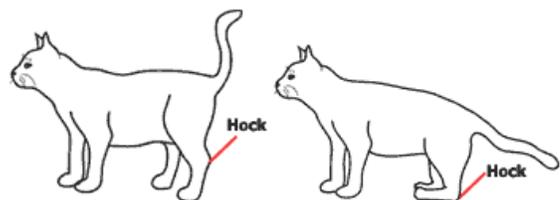
Diabetic dogs can develop cataracts in their eyes, but this is rare in cats. A diabetic can develop a condition called diabetic neuropathy that causes weakness in the rear legs. The pet walks with its hocks lowered (instead of walking on his toes) and cannot jump as well. This is more common in cats than dogs.



Although any pet can get diabetes, it is typical of middle age or older. It is more common in female dogs and male cats. Overweight pets are at a much higher risk for developing diabetes, especially as they age.



Injury to the pancreas by inflammation (called pancreatitis) can also lead to diabetes.



In an untreated or poorly controlled diabetic pet, a life-threatening situation called diabetic ketoacidosis (DKA) can occur. This is where the body has resorted to breaking down fat instead of glucose for energy and in the process produces ketones. When ketones get high enough, they cause the blood to be acidic. This is a very dangerous condition.

Pets with this condition become very sick, are vomiting, will appear depressed, and will have a “fruity” smell to their breath. They need immediate treatment to survive. This treatment consists of hospitalization, insulin, intravenous (IV) fluids, and monitoring of blood glucose levels.

### **Diagnosis**

A veterinarian can easily diagnose diabetes. Blood tests show increased levels of glucose in the blood. A urine sample with glucose in the urine is required for confirmation. This is because some cats will have increased blood glucose levels simply due to stress, but these cats do not have glucose in their urine.

If diabetic ketoacidosis is present, ketones will be in the urine as well. A urine culture will be performed to rule out urinary tract infections and allow proper treatment if present.

### **Treatment**

Treatment for diabetes usually requires insulin injections once or twice daily given by owners at home. Oral medication rarely works in cats and dogs. Most people can easily learn how to give these small injections and most pets accept them easily.



Owners must monitor their pet closely because low blood glucose (hypoglycemia) is a concern when on insulin. Insulin given at the wrong time or on an empty stomach may cause too much of the glucose to leave the blood stream. This is often due to a pet vomiting or not eating after receiving an insulin injection.

Signs include weakness, dizziness, and seizures. If left untreated, it can lead to coma and death.

In cases of low blood sugar, offer your pet food such as a canned food. If he refuses, rub a sugar source such as corn syrup (Karo syrup) on his gums. **Do not give any more insulin.**

If your pet does not recover quickly, is having a seizure, or if you don't know if his sugar level is too high or too low, take him to a veterinarian immediately. To avoid low blood sugar, feed meals on a consistent schedule and monitor closely. Give insulin after you know your pet has eaten.



Diet and exercise are also important for diabetics. Overweight pets should lose the excess weight.

There are prescription diet foods available for diabetics that have increased protein and decreased carbohydrates. This combination helps regulate the blood glucose levels. Sometimes, with cats, this can cause the diabetes to go into remission.

The goal of treatment is regulation. This means maintaining the blood glucose level at a reasonably normal level throughout the day. Our doctor will help determine the insulin dose and schedule that works best for your diabetic pet.

This requires checking the blood glucose levels when your pet hasn't eaten yet (called a fasting glucose check). Test the blood right before your pet receives insulin to determine the highest glucose levels. Your pet may need to be tested two or more times in a day to determine whether insulin needs to be given more than once a day.

Since any changes in insulin are done in small increments, check glucose levels weekly until regulated.

Once regulated, check blood glucose levels periodically to make sure the dose of insulin is still the best choice.

Some people are able to test the blood at home using a machine called a glucometer. This often works well for cats that are stressed by visits to the vet.



**Please note: the insulin dose should NEVER be changed without consulting the vet first, regardless of what the level is.**

Since diabetics are more likely to get urinary tract infections, a urine sample should be examined and cultured every 6-12 months. Monitor your pets drinking and urination amounts. Increases can indicate urinary tract infections or that the diabetes is no longer regulated properly.

Almost every pet can be managed successfully and most diabetic pets can live many years once their condition is regulated and under control.

