

Aireworth Vets 
SMALL ANIMAL 

CANINE DIABETES



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If you have any further queries regarding the welfare of your pet, please do not hesitate to ask a member of staff

We are happy to assist!

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What is diabetes mellitus?

There are two forms of diabetes in dogs: diabetes insipidus (drinking diabetes) and diabetes mellitus (sugar diabetes). Diabetes insipidus is a very rare disorder that results in failure to regulate body water content. Your dog has the more common type of diabetes: diabetes mellitus. This is a fairly common disorder and is most often seen in dogs 5 years of age or older. Diabetes mellitus is a disease of the pancreas. This is a small but vital organ that is located near the stomach. It has two significant populations of cells. One group of cells produces the enzymes necessary for proper digestion. The other group, called beta-cells, produces the hormone called insulin. Simply put, diabetes mellitus is a failure of the pancreas to regulate blood sugar.

Why is insulin so important?

The role of insulin is much like that of a gatekeeper: it stands at the surface of body cells and opens the door, allowing glucose to leave the blood stream and pass inside the cells. Glucose is a vital substance that provides much of the energy needed for life, and it must work inside the cells. Without an adequate amount of insulin, glucose is unable to get into the cells. It accumulates in the blood, setting in motion a series of events which can ultimately prove fatal.

When insulin is deficient, the cells become starved for a source of energy. In response to this, the body starts breaking down stores of fat and protein to use as alternative energy sources. As a consequence, the dog eats more; thus, we have weight loss in a dog with a ravenous appetite. The body tries to eliminate the excess glucose by excreting it in the urine. However, the excess blood sugar attracts water; thus, urine glucose takes with it large quantities of the body's fluids, resulting in the production of a large amount of urine. To avoid dehydration, the dog drinks more and more water.

Thus, we have the four classical signs of diabetes:

Weight loss

Ravenous appetite

Increased water consumption

Increased urination

How is diabetes mellitus diagnosed?

The diagnosis of diabetes mellitus is based on three criteria: the four classical clinical signs, the presence of a persistently high level of blood glucose and the presence of glucose in the urine.

To prevent glucose loss from the body the kidneys only allow it to pass out in the urine when very high levels of glucose are circulating in the blood. This means that dogs with a normal blood glucose level will not have glucose in the urine. Diabetic dogs, however, have excessive amounts of glucose in the blood, so it will be present in the urine.

What are the implications for me and my dog?

For the diabetic dog, one reality exists: blood glucose cannot be normalised without treatment. Although the dog can go a day or so without treatment and not get into a crisis, treatment should be looked upon as part of the dog's daily routine. Treatment almost always requires administration of insulin and some modification of the diet.

For the owner, there are two implications: financial commitment and personal commitment. When your dog is well regulated, the maintenance costs are minimal. The special diet, insulin, and syringes are not very expensive. However, the financial commitment is significant during the initial regulation process and if complications arise.

Initially, your dog may be hospitalised for a few days to deal with the immediate crisis and to begin the regulation process. The "immediate crisis" is only great if the dog is so sick that it has stopped eating and drinking for several days. Dogs in this state, called ketoacidosis, may require a week or more of hospitalisation with a number of laboratory tests. Otherwise, the initial hospitalisation may be only for a day or two in order to start stabilisation. At that point, your dog goes home for you to administer medication.

At first, return visits are required frequently to monitor progress. It may take a month or more to achieve good regulation. The financial commitment may again be significant if complications arise. We will work with you to try and achieve consistent regulation, but a few dogs are difficult to keep regulated. It is important that you pay close attention to our instructions related to administration of medication, to diet, and to home monitoring. Another complication that can arise is hypoglycemia, or low blood sugar. If severe, this can be fatal. This may occur due to inconsistencies in treatment.

Your personal commitment to treating your dog is very important in maintaining regulation and preventing crises. Most diabetic dogs require insulin injections once or even twice daily. They must be fed the same food in the same amount on the same schedule every day. If you are out of town, your dog must receive proper treatment while you are gone. These factors should be considered carefully before deciding to commence treatment.

If you have any queries or would like to know more please don't hesitate to contact us and we will be happy to assist.