



WHAT IS DIABETES MELLITUS?

Diabetes mellitus is also known as sugar diabetes. Diabetes occurs when (a) the pancreas (an organ near the stomach) doesn't produce enough of a hormone called insulin (perhaps due to damaged cells) or (b) when there is insulin available but the body is unable to use it properly.

Glucose is the energy source obtained when dogs breakdown/digest food. Usually it travels in the blood to body cells, where it is used. If there is a lack of insulin the glucose cannot enter the cells and accumulates in the blood. High levels of glucose/sugar in the blood is called hyperglycemia. If left untreated this can cause damage to tissues and organs including the brain, nerves, kidneys and blood vessels.

In humans, Diabetes Mellitus can be segregated into many different groups but in dogs there are two main types; Insulin dependant diabetes (IDDM) and non-insulin dependent diabetes (NIDDM). Nearly all dogs come into the first category and require daily injections of insulin to manage the condition.

What are the most common symptoms of diabetes?

In the early stages of diabetes you may see your dog displaying some or all of the following symptoms:

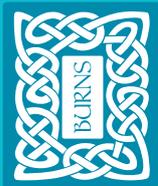
- Drinking too much (polydipsia)
- Urinating excessively (polyuria)
- Increased appetite (polyphagia)
- Weight loss despite eating more (the body burns fat for energy instead of glucose)
- Lethargy

Why do dogs develop diabetes?

Dogs which have been allowed to become obese are at a far higher risk of diabetes however, as certain breeds seem to be more likely to develop it, there is thought to be a genetic component to this disease as well. Some autoimmune diseases can damage the pancreas resulting in diabetes.

Types of insulin

There are several different types of insulin that can be given to diabetic dogs but the three main groups are rapid acting, intermediate acting and long-acting insulins. They can all differ in their onset time (how long they take to work after the insulin is injected), their peak time (when they are working the best) and their duration (how long the insulin lasts in the body). The type, amount of insulin and whether you inject once or twice a day will depend on many factors and will vary from dog to dog.



What is a glucose-curve?

Once your dog has been on a starting dose of insulin for a week or two your vet will recommend doing a glucose curve. This is where your vet will measure your dog's blood sugar levels every 1-2 hours over the period of a day (12-24 hours). This tells your vet if your dog is on the correct dose of insulin and whether it is lasting long enough. Your vet may do more glucose curves every few months to continue to monitor your dogs progress.

The glucose curve is not always accurate as other things such as stress of being at the vet surgery can affect blood sugar levels but it can still be a useful guide.

You should not change the insulin dose without speaking to your vet first.

Feeding & Exercise regime

We recommend you consult with your own veterinary surgeon about the best feeding regime for your dog as this will depend on the type of insulin and timing of insulin injections as well as your dog's body condition.

Some dogs are recommended 2 meals per day; others can eat small frequent meals or graze through the day. You and your vet will need to adjust the feeding depending on how well your dog is doing.

- The time(s) of day you feed your dog should be same every day.
- The calorie content of the meals should be kept consistent – so it is not advised to add something different on the weekend for example.
- If any treats are fed they should be fed at the same time and in the same amount every day. Treats which contain sugar (labelled as sucrose, fructose, dextrose, corn syrup etc.) should be avoided. Some owners offer a treat after injection as a reward for their dog, others wait until the insulin is working at its peak.
- Exercise should also be kept consistent. Try to walk/exercise your dog at the same time every day. The duration and type of exercise should also be kept consistent. Doing a 30 minute walk 6 days a week and then a two hour hike on the weekend is not generally advised.
- Semi-moist dog foods should be avoided as they use sugars such as fructose (high-fructose corn syrup) and sucrose as humectants (a humectant helps the food retain water).
- Ideally your dog needs to eat at the same time as being given insulin, however if you inject with insulin before feeding and your dog refuses to eat this can result in low blood sugar (hypoglycaemia), it may therefore be better to inject just after your dog has eaten.

Fibre

Foods with a higher fibre content can benefit glycemic control (amount of sugar in the blood) in diabetic dogs (Nelson et al, 1991, 1998). Burns Weight Control + diet is made with whole grain oats which are an excellent source of soluble fibre and are classed as a low GI food*. A high fibre diet is not suitable for diabetic dogs which are underweight.

*Glycemic index (GI) is a system which ranks the effect that different carbohydrates have on blood sugar levels. Carbohydrates with a low GI rating (such as oats) release glucose more slowly which prevents sharp rises in the blood sugar levels.



Fat

A low fat food is recommended if the dog is at risk of other health problems such as pancreatitis. For dogs that are overweight it is beneficial for them to lose weight. Weight loss can help them become more responsive to insulin which means the insulin dose can often be reduced. A low fat diet may not be suitable if the dog is underweight.

Consistent monitoring and evaluation is important as the insulin and/or food amount may need to be adjusted depending on your dog's condition.

**For more information please speak to a Burns
Nutritionist: 0800 083 66 96**