

## FACT SHEET

### Diabetes

#### What is diabetes?

Diabetes Mellitus, otherwise known as sugar diabetes, is a complex metabolic disorder caused by the inability to produce, or to utilise adequate amounts of insulin. Insulin is needed by the body to help metabolise sugar and fats, if it is not produced in adequate quantities, the utilisation of sufficient glucose is unable to take place and the animal has little energy reserve. Ultimately, if left untreated this could lead to coma and death.

There are two major types of diabetes. The most common in the dog is due to a deficiency in 'insulin producing cells' resulting in deficiency of insulin. It is now known that viruses, drugs, tumours or long-standing inflammation can be instrumental in the destruction of insulin producing cells.

However in recent years it has become clear that diabetes mellitus can also develop when body cells fail to respond to insulin, i.e. when the body develops an insulin resistance. This type of diabetes can result from overeating or from an excess of other hormones.

In particular two types of hormone known to interfere with the action of insulin are cortisol-like drugs, used in therapy, and growth hormone. Growth hormone is stimulated by the presence of progesterone, which is of particular significance in bitches. At the end of each season a bitch will produce progesterone for a while, whether or not she is pregnant, and this in turn stimulates production of growth hormone, which in turn blocks the effects of insulin. This may be sufficient to produce signs of diabetes mellitus for a while after each heat in some bitches, but generally they spontaneously recover. Use of progesterone like drugs to postpone or suppress heat will have the same effect.

#### Signs and symptoms

The first signs that are often noticed are a severe increase in thirst and urine production. Sometimes the pet will be ravenously hungry. Over a long period of time the animal will lose weight and may develop liver and kidney problems. Cataracts are also associated with diabetes.

#### Diagnosis

Your veterinary surgeon will make a preliminary diagnosis based upon an assessment of all the clinical signs. Tests will be carried out on the urine and blood.

#### Management

A diagnosis of diabetes means that the pancreas is not producing adequate levels of insulin and therefore the animal must obtain it by other means. This can be done by giving daily injections of insulin. Injecting your pet may give you concern, but do not worry. Your vet will show you how to do it and after a few attempts it will just be a matter of routine.

You will need to test the urine on a daily basis to establish if there is an amount of glucose still being lost in the urine. This is usually best done first thing in the morning collected by means of a clean tin or tray slipped under your pet just before they urinate, always use a clean container. Once the sample has been collected it can be transferred to a sample pot or universal container. The testing is done with specially impregnated dip sticks and is very simple to carry out. Your vet will explain what to do if the reading is abnormal in any way.

In addition to insulin injections the amount of food and exercise that your pet has must be closely controlled. Food adds extra glucose into the blood, insulin then removes the glucose not used by muscle cells during exercise. This is the balance between food, insulin and exercise.

It is important not to give diabetic dogs tit-bits and to inform anyone who comes into contact with your dog that this could upset the balance.

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## Typical daily routine

Consistency in exercise, feeding times, type and quantity of food are important parts in maintaining the balance between food, insulin and exercise. It is vital that these amounts do not vary from day to day. Your vet will advise you on the balance for your particular pet, as each animal is an individual.

A typical daily routine is as follows:

- 8.00 a.m. collect urine and test
- 8.30a.m. Feed 1/4 to 3/4 of daily food
- 8.35 a.m. Inject required amount of insulin
- 5.00 p.m. Give remainder of food

Exercise should be given in the same amount at the same time each day.

## Coping with a crisis

Problems occur when the blood sugar level is either too high (hyperglycaemia) or too low (hypoglycaemia).

**Hyperglycaemia** is the result of too much sugar in the blood. This situation can arise due to poor management - when no insulin has been administered, or because the dog has been given or had access to a large amount of food. The first signs are increased thirst, more frequent urination, leading on to vomiting and coma if untreated.

**Hypoglycaemia** is the result of too little glucose in the blood. This situation can arise from an overdose of insulin, or the administration of insulin and the animal not eating. The first signs of hypoglycaemia are anxiety, unrest, disorientation, trembling, shivering and muscle twitching. Unless some kind of glucose is administered at this point a fit or coma may follow.

## Memo

It is always a good idea to keep a record of the daily routine. A chart such as the one below will help you to maintain consistency.

Urine test results	Insulin injection time and amount	Feeding time and amount	Water intake	Any other comments eg tidbits
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

## How can Naturediet help?

The type of diet and the amount fed each day is also extremely important in the management of diabetes. It is important to feed a diet that is made to a consistent formula. The most suitable diet for a diabetic dog is one which contains high fibre and low protein. High fibre diets contain more complex carbohydrates. These have to be broken down into glucose before being released into the blood stream. This process takes time to occur thus helping to maintain stability in the level of glucose in the blood.

Naturediet products are made to a consistent formula and contain complex carbohydrates and added fibre. Our Naturediet Senior/Lite diet is often recommended by veterinary surgeons for diabetic dogs as this has a high fibre level and lower protein content.

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