



Diabetes Mellitus in Cats



PETVET clinics are well-equipped, full-service, small animal veterinary practices providing comprehensive diagnostic, medical, surgical and dental care. We aim to offer quality service, giving your pet the maximum opportunity to lead a long and happy life.

ALL THE CARE YOUR PET NEEDS!



What is diabetes mellitus?

Diabetes mellitus is a medical condition where there is an excessive quantity of sugar (glucose) in the blood. This is caused by a deficiency of the hormone insulin, which is secreted by the pancreas.

Diabetes mellitus is seen more frequently in middle to old-age cats and is more common in males than females. Brown Burmese cats are more commonly affected than other breeds.

What clinical signs do you see in diabetes mellitus?

The most common clinical signs seen in diabetic patients are:

-  Increased volume of urine production.
-  Increased thirst.
-  Weight loss.
-  Variable appetite.
-  Sweet smelling breath.
-  Depression or lethargy.

Some affected cats will develop keto-acidosis. Abnormal glucose metabolism results in high levels of ketones in the blood stream. The toxic and metabolic effects of elevated ketones result in severe illness, ultimately leading to collapse, coma and possibly death.

How is diabetes mellitus diagnosed?

Diabetes mellitus is diagnosed by confirming persistently elevated fasting blood glucose concentrations and the presence of glucose in the urine. However, a diagnosis of diabetes cannot usually be made on single blood and urine tests as other conditions, such as stress, may cause a transient rise in glucose levels. Confirmation of diabetes may therefore require multiple blood samples collected over a period of time (perhaps several days). Prolonged elevation of blood glucose results in increased Fructosamine levels. This can also be used to confirm diabetes or assess how well it is being controlled.

How is diabetes mellitus treated?

Diabetes mellitus is a treatable condition. Although long-term treatment does require commitment, it can be very rewarding to successfully manage this condition. Well managed diabetic cats will enjoy good quality of life, often for many years. Treatment of diabetic cats is aimed to correct biochemical abnormalities that result from abnormal glucose metabolism and to supplement the hormone insulin to maintain normal blood glucose levels.



Initial steps in treating a diabetic cat may involve:

-  Correction of any predisposing causes for the diabetes.
-  Correction of dehydration with an intravenous drip.
-  Correction of electrolyte imbalances.
-  Treatment of bacterial infections often present in the urinary tract.
-  Commencement of a special diet designed for diabetic cats.
-  Twice daily insulin injections to control blood sugar levels.
-  Daily blood and urine tests to monitor progress.

Keto-acidotic diabetics may initially need aggressive intensive care to correct severe dehydration and electrolyte imbalances and resolve acid – base abnormalities, as well as commencing treatment for their high blood glucose levels.

During the initial stages of treatment, it is common for diabetic cats to be hospitalised so they can be closely monitored while a suitable dose of insulin is determined. This is a good time for owners to learn how to give insulin injections. Once the blood sugar level stabilises, treatment can be continued at home. Most cats require twice daily injections of a small dose of insulin. Insulin injections rarely cause discomfort, are usually well tolerated by the cat, and within a short period of time the procedure becomes routine for most owners. Insulin injections are best given at twelve hour intervals, usually 6-8 am and 6-8 pm with meals offered immediately after the insulin.

What about long term care?

It is important to monitor treatment over time to ensure it is working properly, and to adjust the dose of insulin if necessary.

After initial stabilisation cats will need regular glucose curves (blood glucose tests every 2-4 hours over a day) to fine tune the insulin dose. Once the blood glucose curve is correct, monitoring is necessary 2-3 times a year, or more frequently if the diabetes becomes uncontrolled. The cats normal residual insulin production can change with time. With prompt treatment using long acting insulin such as Glargine some diabetic cats will go into remission. This remission may be temporary or occasionally permanent.

Early detection of potential problems may be aided by keeping accurate records of the following information:

-  Time you give insulin injections.
-  Amount of insulin injected.
-  Amount of food offered and eaten (and time).
-  Amount of water consumed.
-  Your cats weight.



In addition, it can be valuable to monitor urine glucose and ketone levels as these can be a guide to the effectiveness of treatment. This is best done on urine that is passed during the night or first thing in the morning. To collect urine, replace cat litter with dry, clean (washed) aquarium gravel at night. This will not soak up any urine passed. We can test the urine with a simple 'dip-stick' test or you can do it at home if you wish. Marked changes in the amount of glucose in the urine or the presence of ketones may indicate the need to alter the insulin dose, but you should never change the dose of insulin without first discussing it with us. Changes in the insulin dose are usually based on trends in urine glucose concentrations as there is normally some day-to-day variation.

An alternative to monitoring urine glucose is to monitor blood glucose. A small drop of blood collected from the ear margin can be tested in a portable blood glucose meter. This method is more reliable than testing urine and is generally well tolerated by most diabetic cats. Blood glucose levels collected at home can sometimes be more reliable in nervous cats as they can become stressed in hospital. Stress increases blood glucose levels and may falsely indicate poor control.

What happens if my cat receives too much insulin?

If your cat receives too much insulin, the blood sugar level may drop dangerously low (hypoglycaemia often abbreviated to hypo). For this reason it is important to be very careful in ensuring your cat receives the correct dose of insulin. Hypos can occur if the dose is miscalculated, if normal insulin secretion changes, if the cat does not eat or if activity levels rise excessively.

The typical signs displayed by a cat with a very low blood sugar level are:

-  Severe weakness and lethargy.
-  Shaking and unsteadiness.
-  Excessive distress or acting strangely.
-  Convulsions.
-  Coma.

If your diabetic cat shows any of these signs it is important to seek urgent veterinary attention. If signs of a hypo are present (ataxia or unsteadiness during walking, and/or convulsions) a tablespoon of glucose syrup, honey or sugar solution should be given by mouth or smeared on the gums immediately. For any cat receiving insulin, it is a good plan to have a supply of glucose syrup or honey readily available to treat a hypoglycaemic emergency. If your cat is not suffering a hypo and you treat it with glucose or honey you won't cause it any harm so it is best to treat before contacting us even if you are suspicious.

Once your cat reaches hospital emergency treatment involves measuring the blood sugar level, an intravenous glucose drip and treatment to reduce brain swelling if signs are severe. Once under control the insulin dose may need to be fine tuned. Most diabetic cats today are treated with the long acting insulin Glargine. This insulin does not usually depress blood sugar levels quickly and, as a result, hypos are not very common in well controlled cats.

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