Whiskers Vets

22 Battle Road
Heathfield Industrial Estate
Newton Abbot, Devon
TQ12 6RY

Caring for your diabetic dog

What is diabetes?

Dogs need glucose (sugar) as an energy source to survive. Diabetes Mellitus is a disease in which there is an absolute or relative deficiency in insulin, a hormone responsible for the uptake of glucose from the blood stream into the cells of the body.

Most diabetic dogs suffer from Type 1 diabetes which causes an absolute lack of insulin usually due to immune-mediated destruction of the cells that produce it. Therefore, they are dependent on insulin injections to manage the disease.

What causes diabetes?

There are several causes of diabetes. As above, the most common form of canine diabetes is due to destruction of the cells that produce insulin. Other causes include genetic factors, obesity, sex hormones, use of steroids, a range of illnesses including hormonal diseases and infections. Diabetes can sometimes occur during the normal oestrus cycle of a bitch or during pregnancy.

How does it work?

To put things simply, when your dog eats a meal his/her blood sugar will increase as the meal is digested and the glucose absorbed from the gut. This glucose is then transferred from the blood into the cells of the body so it can be used as their energy source. It is insulin that facilitates the transfer of glucose from the blood into the cell.

In a healthy animal, insulin is secreted in small quantities based on demand. When treating diabetics we mimic the secretion of insulin by injecting it after a meal. Without insulin the blood glucose would be too high (hyperglycaemic) and too much insulin would result in the blood glucose dipping too low (hypoglycaemic). Allowing your pet's blood glucose to become too low can be very dangerous and can result in a coma. High blood glucose is less detrimental in the short term but can be equally as serious if experienced over a long period of time.

Clinical signs

- Drinking/urinating excessively
- Excessive hunger
- Weight loss
- Sweet- smelling breath
- Sometimes diabetic patients can present quite severely with dehydration, vomiting, anorexia,

seizures, shivering, weakness, abnormal behaviour/disorientation, an unusual gait, breathing rapidly or collapsed.
-

One or more of these clinical signs may lead your vet to test for diabetes. To a large extent, the clinical signs and their severity will depend on how early the disease has been presented.

Diagnosis

- Clinical signs of diabetes
- Evidence of persistently high blood glucose.
- Evidence of glucose in the urine.
- Although the above alone are sufficient to provide an accurate diagnosis of diabetes your vet may recommend other tests such as full blood and urine profiles to enable detection of underlying diseases or complications.

Treatment

The treatment for diabetes includes injecting daily insulin, controlling the diet and the treatment of underlying/concurrent diseases.

Initial stabilisation of a newly diagnosed diabetic dog

Once your dog has been diagnosed with diabetes we will arrange a long consultation to go through how to care for them. It is important to set aside some time without the distraction of other pets or children as the amount we need to discuss can be overwhelming.

Your vet will talk to you about four main points;

1. Understanding the basics of the disease and how it works; the better you understand the disease the easier it will be for you to manage your friend's illness with confidence.
2. A feeding regime which may include a weight loss schedule; feeding the appropriate diet and correct quantities is imperative to the successful treatment of diabetes.
3. How to store insulin and how to inject your pet.
4. A treatment/monitoring plan tailored to you and your family depending on factors such as financial restraints, work/commitments/schedules other than the family pet!

The goal when treating diabetics is maintaining a routine. It is imperative that your pet's treatment regime is realistic and achievable considering your own personal commitments. Our goal is to eliminate their clinical signs, improve their quality of life and minimise any complications whilst maintaining your sanity!

Feeding

- The priority is a controlled and consistent diet. This will be a measured amount at a set time and may require feeding members of the family under close supervision!
- It is advised that you feed a diet high in complex carbohydrates and fibre and low in fat. There are prescription diets available to provide exactly what your pet needs in an easy reliable source.
- Treats should be avoided between mealtimes.
- A diabetic will be more stable and healthy if it is a healthy body weight so your vet may advise a diet aimed to facilitate gradual weight loss.

Exercise

- It is important to keep exercising – it increases insulin absorption.
- It also facilitates weight loss/maintenance.
- It is crucial to keep the exercise unchanged and regular – if an animal is suddenly exercised more (longer walks when visitors come to stay!) then it uses more energy (glucose) and this can cause the patient to have very low blood sugar levels.

Insulin injections

Insulin can be injected with the use of a syringe and needle which requires you to draw up a suitable dose from a vial of insulin. More popularly, you can purchase a Vetpen which calculates the dose and injects for you! This is likely to be a more hassle free and accurate way to dose your dog.

Using a Vetpen

Loading a VetPen

1. Remove pen lid, unscrew pen body from cartridge holder.
2. Check internal plunger is fully retracted.
3. Mix insulin by gently turning cartridge up and down.
4. Load the cartridge and put cartridge holder and pen body firmly together.
5. Attach the VetPen needle to VetPen and remove outer protective cap.
6. Prime VetPen
7. Hold VetPen with needle facing up
8. Dial 1 unit and release
9. Repeat this until a steady stream of insulin is seen coming from needle

Injecting using a VetPen

1. Ensure the arrow on the VetPen body points to the start line on the dose selector and then dial up the number of units your pet requires.
2. If you over-dial, never wind back the dose selector.
3. Expel the insulin and draw up the correct dose.
4. The injection should be given under the skin behind the shoulder blades.
5. After dose selector has returned to the start line, wait a minimum of five seconds.
6. After pressing the release button count to a minimum of 5 seconds, making sure that the dose selector has returned to the start line before removing the needle from the skin.
7. Remove the needle from VetPen and dispose of appropriately.

There are excellent videos on the caninsulin website **www.caninsulin.co.uk** that teach you all about

diabetes and how to use the Vetpen. Please watch them. If you do not have a computer we can arrange extra time for you to watch them on our computers at the surgery. The vet/nurse will also teach you how to inject and there will be opportunity to discuss any concerns you may have.

Using a syringe:

1. Always use a new syringe.
2. Only use 40 IU Caninsulin syringes.
3. Gently mix the insulin and then draw up the required dose.
4. Ensure you remove any air bubbles.
5. Tent the skin at the injection site and gently push the needle through the skin.
6. Draw back on the syringe.
7. If you see any blood, simply withdraw and reinsert the needle elsewhere.
8. Administer the insulin by depressing the plunger.
9. Dispose of the used syringe appropriately.

Stabilisation

It may take some time to stabilise your diabetic dog. The stabilisation process can be a frustrating one for both owner and vet as each dog will respond individually to the treatment plan provided. The period is usually 1-6 months but can be shorter. It will be necessary to take blood tests during this period in order to assess the level of control.

Initially we will start your dog on a safe dose of insulin that may need to be increased but will allow initial stabilisation to commence without the fear of dangerously lowering blood glucose. We will then ask you to keep a diary at home and bring it to your next consultation.

Hypoglycemia

It is important that you are aware of the clinical signs of hypoglycaemia (low blood glucose) so that you can respond appropriately should it occur. It may occur if your dog is overdosed or doesn't eat and can be life-threatening if left untreated.

The signs of hypoglycaemia include:

- Lethargy
- Weakness, affected cats can look floppy or uncoordinated
- Twitching / convulsions
- Loss of consciousness
- Seizures (fits)
- If left untreated this can progress to death

Treat quickly with glucose/sugar solution/honey rubbed onto gums and then feed as soon as safe to do so. After treating – contact us! If you have any concerns do not hesitate to phone the surgery.

Storage of insulin vials

- Insulin must always be stored in the fridge prior to opening
- After opening, it may be possible to store up to 25 degrees Celsius or in the fridge.
- Insulin must not be frozen.
- Always store in an upright position.
- Discard once the vial has been breached for 28 days.

IMPORTANT WARNING: IF YOU ACCIDENTLY SELF INJECT SEEK MEDICAL ATTENTION WITHOUT DELAY.

Ongoing care and monitoring of a diabetic

Once your dog is stabilised it should be monitored at home for any clinical signs. It is also important to monitor the blood glucose levels. There are several ways in which this blood glucose can be monitored, and your vet will discuss which option is best suited to you dog.

A assessment of how well the blood glucose is being managed can be made using the simple technique of symptom tracking. Alongside this, we use blood tests such as Fructosamine or HbA1c measurements – these measure an average glucose over a period of time. For those requiring assessment of a more tricky stabilisation, some will come into hospital for the day to have a serial blood glucose curve. This is when we take measurements of blood glucose throughout the day to assess the fluctuations your pet may be undergoing within the day. However, doing this at the vets can be unreliable as blood glucose naturally elevates in stressful situations. To get a more accurate picture, at home monitoring is preferable. This can be achieved by using a glucometer at home and taking serial readings through the day in the same way that we would in the surgery and submitting these results. Our vets and veterinary nurses will offer instruction and advice on using a glucometer at home. Another option is a device called a Freestyle Libre which is a device used in human medicine which can temporarily attach to you pet to provide regular glucose reading without the need for repeated manual sampling.

Prognosis

Diabetes is not curable but is treatable. It is possible for a diabetic dog to live comfortable and normal lives. Please be aware that it is likely that your dog may not reach the normal life expectancy for his/her breed.

Complications

- Cataracts are the most common complication of diabetes in dogs. Nearly 100% of diabetic dogs will develop cataracts during the course of the disease. Ideally, cataracts should be removed surgically if finances allow. The reason for this is that they predispose to glaucoma, a serious disease causing blindness. If your dog has untreated cataracts please ask your vet to explain the warning signs of

glaucoma so that you can seek veterinary attention as soon as possible.
- Recurrent bacterial infections, in particular, urinary tract infections.
- Concurrent disease may complicate diabetes, worsening the prognosis and making stabilisation difficult.
- Diabetic ketoacidosis: is an emergency condition where the body has sustained a level of hyperglycaemia for a prolonged period of time. This should not occur in a treated dog but any diabetic should be seen by a veterinary surgeon should they develop any unusual clinical signs.

Summary

- Give Caninsulin injections at the same time(s) each day.
- Do not change the dose without consulting us.
- Ensure food and exercise are consistent.
- Monitor eating, drinking, weight and demeanour.
- Always ensure water is available to your pet.
- Contact us if you have any concerns.