**Diabetes Mellitus (DM) in Dogs**

**What is diabetes mellitus?**

Diabetes mellitus (DM) is a fairly common disorder most commonly seen in dogs over 5 years of age.  It is a disease where the pancreas fails to produce sufficient insulin (or the body fails to respond to the insulin) to regulate the glucose (sugar) levels in the blood.  Being overweight for long periods of time significantly increases the risk of developing DM.

**What are the signs of DM?**

There are four classic signs of diabetes:

1. Weight loss
2. Ravenous appetite
3. Increased water consumption
4. Increased urination

**Why is insulin so important?**

All cells in the body need glucose as a source of energy.  Without insulin, the body is unable to use the glucose in the blood stream and will need to turn to other energy sources - fat and protein.  It is for this reason that you may be noticing rapid weight loss despite a ravenous appetite. If the body continues to burn fat and protein instead of glucose then dangerous waste products will be produced.  This is called diabetic ketoacidosis (DKA). It is an extremely serious condition and can be life threatening.

**How is DM diagnosed?**

Blood and urine tests will need to be performed to diagnose DM.  Additional testing for other conditions or diseases may be indicated as the presence of these could make stabilisation difficult.  Urinary tract infections are a common example.

**What are the implications for me and my dog?**

Blood glucose cannot be normalised without treatment.  Two things need to be considered prior to undertaking treatment - can the financial and personal commitments required to successfully control this disease be met?

Initially, the financial costs can be quite considerable, especially if your dog needs hospitalisation and treatment for DKA.  Some animals will be more difficult to stabilise than others, calling for regular monitoring blood tests in the first few months.  It can be frustrating, especially in the first few weeks, as things may seem to ‘not be working’. Don’t despair - with commitment and close monitoring, both at home and at the clinic, things *should* stabilise with time.

The personal commitment is also a very important consideration to make prior to embarking on treatment.  Treatment will require insulin injections twice daily for the rest of the dog’s life and a VERY consistent diet.

**What is involved in treatment at home?**

Consistency is vital to proper management - 12 hourly administration of insulin and a consistent diet.

*Diet:* Food contains sugars which will in turn elevate the blood glucose.  If there are constantly DIFFERENT types and amounts of food on offer yet the SAME amount of insulin being injected there may be significant variation in blood glucose levels throughout the day.  For best control, it is recommended to feed the SAME FOOD and the SAME AMOUNT twice daily. There are prescription diets available which are specifically formulated for diabetic animals. Should your dog be fussy with food then homemade diets can be given.  We can advise on what homemade diets would be best. Once again, consistency is very important, whether using commercial or homemade diets. Treats in the middle of the day will unfortunately lead to poorer control!

*Insulin:* Ideally, the insulin is given as an injection under the skin at the time of feeding.  If there is a concern the dog may not eat, then the insulin can be administered directly after the meal.

If you are concerned about the injection hurting then remember:

* The injections are made with very tiny needles that will hardly be felt.
* The volume injected is TINY and will not cause pain.

We will demonstrate the correct drawing up and injection technique and ensure you are confident with this prior to taking your dog home.

It is important to closely follow our recommendations on diet and insulin dosage.  Too much or too little of either may have serious, even life-threatening, consequences.

**What monitoring is needed?**

*At home:* it is important to closely monitor your dog’s appetite, drinking habits and amount, weight and general demeanour.  Should you notice changes in any of these, then it is recommended to visit the clinic for a recheck.

*In clinic:* regular monitoring blood tests are recommended to assess the control of DM.  The readings of most importance are the blood glucose levels just prior to giving insulin (highest) and the level 6-8hrs after insulin (lowest).  This only provides a ‘snapshot’ of the blood glucose at a particular point in time. As glucose levels normally rise and fall throughout the day in curved fashion, readings every 1-2 hours may be required over the course of the day.  This is called a blood glucose curve. This may be recommended in dogs that are difficult to stabilise.

Stress and excitement can affect blood glucose readings and it may therefore be recommended to perform a fructosamine test.  This is a test which can give an indication of the AVERAGE blood glucose over the previous 2-3 weeks.

Regular urine tests can also help to assess the level of control.

We will advise when and how regularly this monitoring should be performed.

**What if the blood glucose is too low?**Hypoglycaemia is when the blood glucose level is too low.  This can occur if too much insulin is given or if an injection is accidentally given twice (eg by two different family members).  A common sign of this is tiredness or lethargy. Your dog may be unsteady on their feet. In severe cases, when the blood glucose is very low, seizures and/or unconsciousness can occur.  If you are concerned, then it is important to contact the clinic, day or night as this can be a life threatening emergency.

**If you are concerned your dog may be diabetic it is best to visit the hospital for a consultation and to discuss your concerns with the vet.**