



## Diabetes Mellitus in Dogs



Insulin is created by specialized cells in the pancreas. Insulin is needed for the absorption of sugars (glucose) into cells where it can be converted to energy. Diabetes mellitus arises when there is a shortage of insulin or the insulin present is ineffective. Without insulin, the cells of the body are unable to convert glucose into an energy source. The cells will seek other energy sources such as ketones, fats and muscle stores. This will often result in weight loss.

There are two types of diabetes. Type 1 diabetes is where the pancreas produces no insulin. This is also called insulin dependent diabetes as the patient is dependent on insulin injections life-long. Type 2 diabetes is where the pancreas is not producing enough insulin or another condition causes interference with insulin production or use. Type 2 is also called insulin independent diabetes or non-insulin dependent diabetes.

Most dogs have insulin dependent diabetes and are often diagnosed between ages 4 and 14 with the peak being around age 7 to 9. Female dogs tend to be affected more often than male dogs.

### Clinical signs of Diabetes

- Increased thirst
- Increased urination
- Weight loss
- Lethargy
- Unkempt haircoat, poor skin quality
- Cataracts



### How is diabetes diagnosed?

A complete blood count, biochemistry and urinalysis are the first steps towards a diagnosis of diabetes. The biochemistry will show an elevated glucose level. Glucose is often present in the urine. A fructosamine blood test is a test that helps to determine blood sugar levels in the past 7-21 days and can be helpful in dogs that are just becoming diabetic or for monitoring purposes.

### Risk Factors

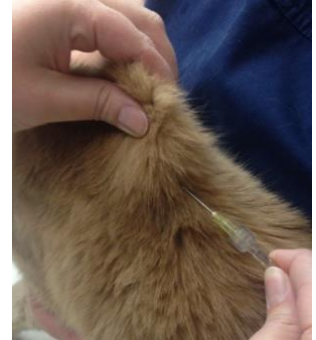
- Obesity
- Chronic pancreatitis
- Steroid use
- Certain breeds including; Australian Terrier, Standard and Miniature Schnauzers, Bichon Frise, Spitz, Fox Terrier, Miniature Poodle, Samoyed, Cairn Terrier, Keeshond, Maltese, Toy Poodle, Lhasa Apso



## Treatment

Insulin replacement injections are the most common course of treatment for diabetic patients. There are many different types of insulin on the market and choosing the right type for the right patient is key. Most dogs require twice daily injections and it is given after meal feeding.

Other important treatments for diabetic control in dogs include controlling any concurrent infections or diseases, discontinuing any medications that may inhibit insulin and feeding a high fiber diet.



## Diet

High fiber diets are recommended for canine diabetic patients. If obesity is present, weight loss is a goal as diabetes may be reversible once weight loss is achieved.

We offer half of the daily food intake with each of the insulin injections, this will mean twice daily feedings are ideal.

Recommended diets for dogs are Purina's EN Gastroenteric Fiber Response, Hill's w/d and Royal Canin's Fiber Response diets.



## Follow up care

After a patient has been diagnosed with diabetes and treatment has begun, follow up care is needed to ensure the correct dose and frequency of insulin. This means that re-assessing the patient 7-10 days later is important to monitor weight gains or losses, appetite, energy and blood glucose levels. Blood glucose levels can be monitored by taking serial blood samples and creating a curve to assess the insulin's effectiveness. This is called a blood glucose curve. Other tests such as a fructosamine blood test or timed blood glucose checks are often used. Blood tests usually performed 7-10 days after all insulin dose changes.

Urine tests are often recommended to screen for infections. Urinary tract infections are very common in diabetic animals due to the dilute nature of the urine and sugar being present in the urine. This creates a great environment for bacteria to grow. Infections will often cause insulin resistance which will affect the control of the diabetes, making it appear as though the insulin is not working.





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## Signs of hypoglycemia

- Seizures
- Weakness or collapse
- Ataxia
- Lethargy or other strange behaviour
- Blindness
- Coma



Hypoglycemia is more dangerous for the body than hyperglycemia. This means we are always monitoring diabetic patients who are on insulin therapy for signs of hypoglycemia. Hypoglycemia can occur when insulin injections are given without food or too much insulin is given. If hypoglycemia is suspected, placing some corn syrup on the dog's gums can help and seek veterinary care.

## What to expect

It can be scary to learn of a diagnosis of diabetes in a loved pet. Your veterinary team at Nanaimo Veterinary Hospital wants to work with you to help improve your cat's quality of life. We want to work together to help you maintain the special bond you have with your pet. We are here to support you and your pet along this journey. Please contact us with any questions or concerns that you may have at 250-758-3985 or by email at [nveth@shaw.ca](mailto:nveth@shaw.ca)