



## Associated Veterinary Specialists, PC, LTD

12462G Natural Bridge Road

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Emergency 314-739-3330

### Diabetes mellitus & Diabetic ketoacidosis

Diabetes mellitus (DM) is a disease that causes an increased blood sugar when the pancreas is unable to sufficient insulin.

Insulin is a hormone needed by the body to transport glucose (sugar) out of the bloodstream and into energy producing cells. Glucose is the fuel for cells of the body and is needed for normal body functioning. Lack of an energy source by cells of the body tells the brain that more energy source is needed and the animal then has an increased appetite. Therefore, a common clinical sign of diabetes is a hearty appetite with weight loss rather than weight gain. Another clinical sign that may be seen includes increased drinking and urinations due to result of excess glucose in the urine. Other clinical signs that may be identified include the following:

- Sudden blindness due to the development of cataracts
- Abnormal gait or weakness

Some patients can become severely weakened, depressed, and dehydrated. They may have vomiting and a loss of appetite. These patients are most likely experiencing what is termed diabetic ketoacidosis (DKA). This is a serious condition that requires immediate medical attention since it can be life threatening.

Possible causes of the development of diabetes include a genetic predisposition, chronic pancreatitis, obesity, hormonal abnormalities, endocrine disease (including Cushing's disease), infections, and certain medications (including corticosteroids).

Your veterinarian may recommend some of these common diagnostic tests to rule out diabetes mellitus:

- Thorough history and physical examination
- Blood tests: Complete blood count, chemistry panel and an evaluation of the urine
- Abdominal x-rays or ultrasound

Treatment of diabetes in dogs is life long and requires twice daily insulin injection. Occasionally cats can develop a diabetic remission and not require insulin injections for an extended period of time.

Maintaining a good body condition with exercise and diet are also important aspects of treatment.

There are many types of insulin available allowing doctors to tailor the dosage and schedule to meet the needs of the patient. Some insulins are designed for dogs and cats while other insulins are designed for humans but used safely in dogs and cats. If a certain type of insulin is not working well for your pet, another type of insulin may be recommended by your veterinarian.



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To help keep blood glucose levels normalized, it is important to have a consistent feeding schedule and the timing of the insulin injection in relation to the meal. It is best to give insulin after your pet has eaten. If your pet does not eat a full meal, or if they vomit, it is important to adjust the insulin by giving half of the usually amount. If your pet does not eat well for 2 meals it is important to contact your veterinarian.

Our experienced technicians will teach you how to administer the insulin and check blood sugars, if elected. We recommend following these steps in this order!

1. If you elect to monitor blood glucose numbers at home, check this value
2. Feed your pet
3. If your pet eats well, administer the insulin

Important things to remember:

- The insulin needles are very small and your pet will probably not even feel the injections
- You can learn to monitor blood glucose values at home or have your veterinarian perform blood glucose curves periodically at their hospital

It is important to maintain a close relationship with your veterinarian especially after your pet has been diagnosed with diabetes mellitus. Monitoring blood glucose values and clinical signs helps to determine the proper type and amount of insulin that your pet requires.

**\*\*Make sure you have patience because sometimes it can be challenging to figure out what dose of insulin your pet requires\*\***

If your pet is not receiving enough insulin, the blood glucose level will remain high, but if they receive too much insulin the blood glucose will drop too low (hypoglycemia) which can lead to weakness or seizures. Your pet can also become hypoglycemic if he/she does not eat well and receives a full dose of insulin. If your pet is profoundly weak or seizures at home, you can place sugar in the form of Karo syrup, honey, etc on the gums and then transport them to a veterinarian immediately.

Diet is important in the management of diabetes (more so in cats than dogs), and there are a variety of prescription diets that may be recommended for your pet. However, it is most important that your pet eat meals consistently and on a regular basis.

How do I handle insulin?

- Insulin should be stored in the refrigerator. The bottle should be gently rolled between the hands to mix before drawing it up into the insulin syringe
- Never shake or freeze insulin since it can reduce its effectiveness



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Insulin is dosed in “units (U)”. There are 2 main types of insulin syringes (U-40 and U-100).

-U-40 syringes are used with veterinary insulins

-U-100 syringes are used with human insulins

It is important to use the appropriate type of syringe, depending on the type of insulin. You will be told what type of syringe is needed based on the type of insulin that is prescribed.

After the injection has been given, do not attempt to recap the needle, as you could accidentally stick yourself in the finger or hand. Please place the uncapped needle in an empty plastic milk or soda container. You can bring this container to the veterinarian’s office at the time of recheck so that the needles can be properly disposed.

What do I need to watch for at home?

If your pet develops any of these clinical signs, they may be having trouble regulating their blood glucose. Please contact your veterinarian if you witness any of the following:

- Seizures or twitching
- Unresponsiveness
- Decreased appetite
- Depression
- Stumbling when walking
- Vomiting
- Cataracts (cloudiness of the lens) in the eyes
- Increased thirst and urination

### Other Considerations

Diabetic animals are more susceptible to other health problems, even those that are well controlled. Diabetes can increase the risk of infections (especially urinary tract infections), delay wound healing, increase the risk of pancreatitis and nervous system disorders, and can lead to cataracts.

The cost of caring for a diabetic pet is important to consider. In most patients, this is a life-long requirement. Cost will vary depending on the size of the pet and type of insulin required to manage the diabetes. Frequent blood work is also needed in a newly diagnosed patient, and continued monitoring is required once control has been established.

There is a time commitment required to care for diabetic pets. It is important to establish a consistent routine when treating diabetes and you must be able to commit to regular evaluations by your



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veterinarian. Most owners become quite comfortable giving injections and it can even become a bonding time for you and your pet.

Please visit the links below to learn how to check your pet's blood glucose level and how to give insulin.

How to check your pet's blood glucose level at home:

[https://www.youtube.com/watch?v=kRPP8\\_OiFY](https://www.youtube.com/watch?v=kRPP8_OiFY)

How to administer insulin to your pet:

<https://www.youtube.com/watch?v=c3vFEo3Ruyc>

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Reference: Cornell University Veterinary Specialists