

Nutrition for Dogs with Diabetes Mellitus

My dog was just diagnosed with diabetes mellitus and has started insulin injections. Until now I have just put food in his bowl and let him graze. My veterinarian tells me that we have to make some feeding changes, and I'd like to better understand what kind of changes she's talking about.



Diabetes mellitus (DM) is a complex disease in dogs. There are genetic and breed factors that predispose some dogs to develop DM, as well as some lifestyle issues that can contribute.

DM is a disease in which the body can no longer appropriately manage the use

of glucose for its energy requirements. The pancreas, which normally secretes insulin in order to facilitate absorption of glucose into the tissues, fails to create enough of this hormone. In addition, in dogs with DM, there is an element of resistance to the effects of insulin, due in part to being overweight or obese.

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The single most important lifestyle factor that contributes to the development of DM in dogs is being overweight or obese. While not all of the influences of obesity on DM are well understood, we do know that obese dogs tend to eat more, contributing to increased secretion of insulin from the pancreas. Also, excess body fat creates insulin resistance in the tissues, providing feedback to the pancreas to secrete even more insulin. Finally, the accumulated white fat secretes inflammatory and

proinflammatory hormones that can further stress the pancreas (along with the other organs and tissues of the body).

The best way to deal with DM in dogs is to do everything possible to prevent it. This means meal portion management when feeding, starting when dogs are still puppies. Puppies that are allowed to grow too quickly develop more fat cells than puppies that are portion-fed and allowed to grow more slowly. Juvenile obesity provides great stress to the body's tissues and sets the stage for a lifetime of weight management struggles.

How can I help my dog now that he has diabetes?

Once a dog has been diagnosed with DM, the most important long-term management strategy after beginning insulin injections is weight reduction. It is well established that a lean body condition sets the stage for better control over blood sugar, and controlling blood sugar is the key to managing DM. It is critical to work closely with your veterinarian to choose the most appropriate nutrient profile to achieve weight normalization. The goal during weight loss is to preserve muscle while utilizing fat selectively as an energy source. There is good scientific data to guide nutritional choices, and your veterinarian is the best partner you and your dog have for making the best choices.

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A higher percentage of lean body mass contributes to less insulin resistance in the tissues, and this can lead to the need for a lower insulin dose. Dogs with a more normal body mass and better body composition tend to feel better and therefore often want to be more active. Exercise can help the body use its energy sources more effectively.

When should I feed him?

Insulin therapy in dogs with DM demands that dogs eat at or near the time of insulin injection. Insulin without the benefit of a meal can result in life-threatening hypoglycemia (blood sugar dropping too low). Most

veterinarians recommend giving the insulin injection just as the dog finishes his meal in order to link the insulin injection to something desirable (food), as well as to ensure that the dog has taken in the appropriate amount of calories. If your dog does not eat for any reason **do not give insulin (unless directed to give a different dose by your veterinarian)!**



If you have a home glucose monitoring device, take a blood glucose reading. A missed meal may mean hypoglycemia. Once you know the blood glucose level, call your veterinarian for guidance. If you do not have a home monitoring device, skip insulin and call your veterinarian as soon as you can.

Will my dog be able to stop getting insulin if I feed him as my veterinarian recommends?

Once a dog is diagnosed with DM it is **not** realistic to expect that insulin injections can stop (diabetic remission). The best we can hope to achieve is good control of blood glucose levels, also called good glycemic control. It is known that the nutrient profile a diabetic dog eats plays a critical role in achieving glycemic control. There are several therapeutic foods that have been developed to facilitate this effect. These diets include Royal Canin® Canine Diabetic and Hill's® Prescription Diet® Multi-Benefit w/d™. These foods are only available from veterinarians, which means your veterinarian will assist you in choosing the most appropriate formulation and the most appropriate portion per day.

Will my diabetic dog have to eat a therapeutic food forever?

Once a dog with DM is well managed, with a good body composition, and reasonably stable blood glucose levels, it is critical to maintain as much consistency as possible. For the most part that means feeding the chosen therapeutic food for the rest of the dog's life. Should glucose levels

change, or the insulin requirement increase or decrease, your veterinarian may recommend a modification of the feeding plan you have in place.

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Managing DM in dogs is a complex process that can be frustrating. Nutrition plays a critical role in achieving the best glycemic control possible. No matter what, be sure to work closely with your veterinarian to achieve the best outcomes possible.

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