

# Diabetes in Dogs

A Brief Guide • Part of the Educational Pet Disease Series from Lap of Love

## Signs & Symptoms

### Initial Symptoms

- Increased drinking
- Increased urination
- Increased appetite
- weight loss
- Frequent urinary infections
- Clingy behavior

### Intermediate Symptoms

- Cataracts and blindness
- Vomiting
- Diarrhea
- Severe weight loss
- Collapse
- Anorexia

### Advanced Symptoms

- Trouble breathing
- Lethargy
- Dental problems
- Coma
- Muscle weakness
- Quiet behavior

### Hypoglycemia (low blood sugar) Requires Immediate Medical Intervention

If your pet is displaying signs of low blood sugar (weakness, stumbling, inability to move, tremors, lethargy, coma, seizures, collapse) call or bring your pet to your veterinarian ASAP, or if not available take your pet to an emergency clinic. At home rubbing maple syrup or karo syrup on the gums can help - NEVER try and make your pet swallow or give insulin.

## What Is It?

Diabetes mellitus is a disease of the pancreas, a small organ near the stomach. The pancreas has two specific cell groups; the first group produces enzymes for food digestion and the other cells produce insulin, a hormone necessary for blood glucose (sugar) regulation. Insulin is necessary for the glucose in the blood to become accessible by tissues within the body; once taken up by tissue, glucose is used to create energy in the cells to keep the body functioning. The symptoms of DM are directly related to blood glucose levels which, without insulin, will continue to elevate in the blood stream. Dogs typically are affected by type 1 DM (insulin dependent), which occurs due to a complete or near complete destruction of the pancreatic cells required for insulin production. All diabetic dogs fall into the categories of uncomplicated diabetes or complicated diabetes. A dog with uncomplicated diabetes typically presents with a history of increased thirst, urination, and appetite with decreasing weight. A pet with complicated diabetes will present with more severe clinical signs; complicated diabetics may be undiagnosed or may not be responding to therapy that has already been initiated. Complicated diabetics may require hospitalization, however once stabilized, these patients may then become uncomplicated diabetics. Long term effects of DM can include persistent frequent urinary infections and cataracts leading to blindness.

## Diagnosis

A preliminary diagnosis of diabetes, based on clinical signs and your veterinarian's physical examination, is further confirmed with blood and urine tests before initiating therapy. Diabetes mellitus is diagnosed in a dog with repeatable elevated blood sugar (hyperglycemia) AND sugar in the urine (glycosuria). Another test measuring fructosamine (a type of long-lasting sugar in the blood) can help to confirm the chronic nature of DM. Once diabetes is confirmed, other testing initially may include: a urine culture, X-rays, and specialized blood panels.

## Treatment and Management

The goals of management include: minimizing the symptoms, treating concurrent illnesses, slowing long term complications, and avoiding low blood sugar. Once stabilized, canines with DM generally require twice a day insulin injections given under the skin. Your veterinarian will teach you how to give the injections, and discuss medications and handling, needles, food, and overall care. Adjustments in the type or dosage of insulin and treatment of other illness may be necessary long term. The use of prescription DM canine diets are highly recommended to decrease the body's insulin need and promote nutritional health. Monitoring the pet's long term health can include: periodic in hospital or at home blood and urine testing, blood sugar curves, fructosamine testing, and monitoring of the clinical symptoms. Dogs with DM require consistent feeding times, insulin injections twice a day, and restriction of treats and meals in between. As a pet owner, the ability to provide a consistent schedule, medical and dietary needs, follow up, and monitoring is imperative. The most significant complication is generally low blood sugar (hypoglycemia), which most commonly results from insulin overdose from owner error at home; severe or chronic hypoglycemia may result in coma, seizures, and death.

## Prognosis

Most dogs with DM can live a good quality life with controlled symptoms. However, DM in dogs cannot be cured and requires lifelong therapy. The expenses are greater initially, upon diagnosis and stabilization, then lessen significantly during chronic treatment. Complicated canine diabetics such as those with other illness,



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showing resistance to diabetic control via resistance to insulin, and those presenting in a state of ketosis (critically high levels of blood sugar) have a worsened prognosis. Despite our best efforts, some dogs may be difficult to manage and require frequent veterinary intervention. Management of concurrent illnesses, such as urinary tract or skin infections, is necessary to provide the best prognosis possible. Consult your veterinarian, and, if warranted, veterinary internal medicine specialist for an individualized plan to best treat your dog.

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## *Management Tips*

### *Consider providing:*

- Easily accessible water
- Consistent, measured meals
- Wet food to increase water intake
- At home blood and urine testing

### *Try to:*

- Be consistent with medicating and feeding times
- Track your dog's appetite, urination, drinking, weight, etc.
- Limit stress (kids, noise)
- Plan monetarily for costs ahead
- Use a prescription diabetic diet
- Keep up with preventative care
- Address concerns ASAP
- Avoid snacks in between meals
- Consult with an internal medicine specialist for complicated cases and pets with multiple illnesses
- Never adjust the insulin dose unless previously discussed with your vet
- Assign one person for medicating to avoid missed doses or overdosing of insulin
- Refill insulin/needles ahead of time
- Use pet sitters with medical experience or board at a hospital

Before your pet's condition becomes unmanageable or they are losing quality of life, it is important to begin end-of-life care discussions. Learn about pet hospice care and/or euthanasia services in your area so you are prepared.