

Diabetes mellitus is a common endocrine problem in dogs and cats caused by inadequate insulin production or peripheral insulin resistance. This PowerPage reviews the key principles of recognizing and managing diabetic dogs and cats.

Key Points

- Key clinical signs are PU/PD, polyphagia and weight loss
- Less common clinical signs that may be hints are plantigrade stance (cat) and cataracts (dog)
- Diagnosed by documenting persistent hyperglycemia, glucosuria and/or ketonuria
- Treat with dietary changes and insulin

Pathophysiology

Two Types

- **Type I** - pancreas is no longer producing insulin
- **Type II** - caused by insulin resistance (rare in the dog, more common in the cat); if treated properly, some cats may actually go into diabetic remission

Clinical Signs

2 presentations: "healthy diabetic" and diabetic ketoacidosis

Healthy Diabetic

- PU/PD (polyuria and polydipsia)
- Polyphagia (increased appetite) and weight loss
- Recurrent infections
- Plantigrade stance from diabetic neuropathy (cats)
- Cataracts (dogs)

Diabetic Ketoacidosis (DKA)

- Anorexia
- Vomiting
- Weakness
- Metabolic acidosis
- Blood glucose > 500 mg/dl
- May have previous history of the signs of a “healthy diabetic”

Diagnosis

Based on clinical signs and blood work/urinalysis

- Hyperglycemia (often >300 mg/dl)
 - NOTE: Stress can cause hyperglycemia, particularly in cats
- Glucosuria +/- ketonuria
 - NOTE: While less common, stress in cats can also cause glucosuria
- Ancillary tests of fructosamine and glycosylated hemoglobin reflect the patient's blood glucose levels over several weeks

Treatment

- Treatment includes insulin injections
 - Most often given twice daily subcutaneously at home by the owner
- A high fiber, low fat diet (dogs) or high protein, low carb diet (cats) is recommended
- Oral hypoglycemic, such as Glipizide, are often not effective in pet patients
- Types of Insulin
 - Short-acting regular insulin (Humulin-R) used most often in cases of diabetic ketoacidosis (DKA)
 - Intermediate-or longer-acting insulins (Humulin-N, Vetsulin) for maintenance therapy
 - “Peakless” insulin Lantus (glargine) approved and recommended for use in cats

Reference

- Ettinger, Feldman - Veterinary Internal Medicine, 3rd ed. pp 1419-1429, 1460-1499.