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
- Treatment with dietary changes and insulin

**Pathophysiology**

**Two Types**

- **Type I** - pancreas is no longer producing insulin
- **Type II** - usually 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 “severe 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)

- **Severe diabetic ketoacidosis (DKA):**
  - Anorexia
  - Vomiting
  - Weakness
  - Severe metabolic acidosis
  - Blood glucose > 500 mg/dl
  - May have previous history of the signs of a “healthy diabetic”

**Diagnosis**

Based on clinical signs and bloodwork/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
Diabetes Mellitus

- Ancillary tests of fructosamine and glycosylated hemoglobin reflect the patient's blood glucose 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** (or high protein, low carb for 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