

## Diabetes

Diabetes is a controllable (but not curable) hormonal condition. It is most common in middle-aged dogs and cats; it is extremely rare in young pets. Most pets who start insulin therapy will require it for life; rarely some patients are transiently diabetic and are able to be weaned off insulin over time (this is more common in cats).

### Cause

Diabetes can occur due to poor production of insulin or cellular resistance to the effect of insulin. The distinction between Type I and Type II diabetes that is commonly made in human patients is not relevant to dogs and cats. The overwhelming majority of dogs and cats with diabetes are dependent upon insulin.

Insulin is produced by the pancreas and affects every cell in the body. Insulin acts to carry glucose (sugar) from the bloodstream into our cells, where it can be used as energy. Patients with diabetes will have high blood sugar, but low cellular sugar, and therefore, low energy.

The majority of veterinary patients with diabetes have low pancreatic insulin secretion, but some have peripheral insulin resistance. This means the pancreatic production of insulin is normal, but the cells in the body do not respond appropriately. This can occur due to some medications, such as steroids, and some other hormonal conditions such as Cushing's disease and acromegaly.

### Clinical Signs

In the early phase of diabetes, most families notice extreme thirst, increased urination, and breaking houstraining. As the disease progresses, diabetic patients will have an increase in appetite but, because of their inability to appropriately metabolize energy from food, they will lose weight.

Without appropriate therapy, diabetic patients can develop extreme energy imbalance that results in electrolyte abnormalities and disruption of the normal acid and base balance in the body. This can be potentially life-threatening if not addressed swiftly.

Dogs with diabetes are prone to the development of cataracts, due to the effect of excess sugar on the lens of the eye. This will cause the eye to appear white in the center, and vision will be severely diminished.

### Diagnosis

Diabetes is diagnosed with a combination of blood and urine tests. If a patient has high blood sugar as well as detectable sugar in their urine, they are considered diabetic. Occasionally, cats will have markedly high blood sugar due to stress or a patient is on medication (most commonly steroid) that can cause high blood sugar and an additional test called a fructosamine is done. This test measures sugar molecules attached to protein. It can help determine if the patient is truly diabetic. Because diabetes is more common in middle-aged and older pets, it is not uncommon for doctors to recommend other tests to assess the patient's overall health.

### Treatment

The treatment for diabetes is insulin, delivered by injection, generally twice daily at mealtimes. Therapy often also involves a change in diet. Patients that are relatively uncomplicated at the point of diagnosis, meaning they feel well overall and do not have significant laboratory abnormalities, generally go home on insulin on the day of diagnosis.

Complicated diabetics, meaning those that are ill with electrolyte and acid-base abnormalities, often need to be hospitalized for IV fluids, monitoring, and aggressive support until their condition stabilizes. Ketosis and ketoacidosis are states of extreme diabetic dysregulation, and these can be life-threatening. Patients in this condition generally need to be hospitalized at a facility with the advanced care and round the clock monitoring.

**Prognosis**

Most diabetic pets can be managed successfully for years with a commitment to care and monitoring and partnership with an experienced veterinarian.

Some patients have a more brittle type of diabetes, making care challenging in spite of great effort. Additionally, patients with other health conditions, particularly those that can affect diabetic control, can be more difficult to keep stable over time. Repeated hospital stays are sometimes necessary for these types of diabetic patients.

The complications of diabetes seen commonly in people (kidney failure, nerve pain, limb amputation) are thankfully quite rare in pets. Blindness can occur as a complication of unregulated diabetes, or in certain pets with a predisposition to cataracts; cataracts can be surgically removed to restore vision in these patients.

**Long Term Follow-Up**

It is important diabetic patients be monitored closely and managed by an experienced veterinarian. At Veterinary Specialty Center, the internal medicine specialists manage most of the diabetic patients. Often it is easiest to make a follow-up appointment with one of them to discuss your pet's condition and begin a follow-up program. This is particularly important if your pet's diabetic regulation is challenging, has required hospitalization, or has a second health condition complicating care. Veterinary Specialty Center doctors always keep primary care veterinarians informed when tasked with managing a pet's diabetes, and all routine care should continue with your primary care veterinarian.

Many families choose to use a variety of available home monitoring devices (AlphaTrak or similar) for their diabetic pets. These tools can be connected to phone and computer devices that make recording and communicating with veterinarians easier. For families averse to this practice, patients often come in for periodic testing to assess diabetic control and overall health.

Always remember that Veterinary Specialty Center never closes, do not hesitate to call or come in if you are concerned about your diabetic pet.