

Diabetes Insipidus in Dogs

- Diabetes insipidus occurs when the body is unable to produce an adequate amount of the hormone vasopressin (also called *anti-diuretic hormone* [ADH]).
- Affected dogs drink excessively because they lose excessive amounts of fluid through urination.
- With treatment, dogs with diabetes insipidus can live a normal life span and enjoy a relatively normal life.

What Is Diabetes Insipidus?

When most of us think about diabetes, we think of a condition called *diabetes mellitus*. This is a disease in which the body doesn't make an adequate amount of the hormone insulin or the body is unable to use its available insulin effectively. The result is an inability to regulate the body's blood sugar level.

However, there is another form of diabetes called diabetes insipidus. Like diabetes mellitus, diabetes insipidus involves changes in one of the body's hormone levels. Diabetes insipidus occurs when the body is unable to produce an adequate amount of the hormone vasopressin (also called *anti-diuretic hormone* [ADH]) or when the available vasopressin is not being used properly.

Normally, ADH is produced by the brain, enters the bloodstream, and affects several areas of the body, particularly the kidneys. ADH helps the kidneys retain water, which is necessary for keeping the body adequately hydrated. Diabetes insipidus occurs when the body doesn't have enough ADH or when the kidneys can't use it properly. The result is fluid loss by the body, leading to dehydration.

Because ADH is produced in the brain, medical conditions such as brain injury, brain inflammation, and brain tumors can sometimes interfere with the brain's ability to produce a normal amount of the hormone. Conditions that can reduce the kidney's ability to use ADH properly include uterine infections, kidney infections, and adrenal gland disease. In some dogs, diabetes insipidus is a genetically inherited condition.

What Are the Clinical Signs of Diabetes Insipidus?

Because ADH helps the body retain water, an inadequate amount of ADH (or an inability to use it properly) causes the body to lose too much water through urine production by the kidneys. A very common clinical sign associated with diabetes insipidus is increased production of abnormally dilute urine. The pet responds to this water loss (dehydration) by drinking more water, so dogs with diabetes insipidus tend to urinate frequently and

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drink large amounts of water. Affected dogs may also begin to urinate in the house.

In some cases, the dog may be so desperate for water that he or she stops eating (preferring instead to drink even more water) and begins to lose weight. Some dogs also "steal" water from various sources around the home, eat snow and ice, or drink urine in an attempt to drink more fluids.

How Is Diabetes Insipidus Diagnosed?

Your veterinarian will begin the diagnostic process by obtaining a thorough medical history from you and performing a physical examination on your dog. Initial diagnostic tests may include a chemistry panel, a CBC (complete blood cell count), and a urinalysis. These tests can help rule out kidney disease, diabetes mellitus, and other medical conditions that tend to make dogs drink more water and urinate excessively. If there is an underlying medical condition that may be causing diabetes insipidus, such as a uterine or kidney infection, investigation of the underlying problem will likely be part of the diagnostic process.

Common Conditions

Additional testing for diabetes insipidus may include additional blood testing and urinalysis as well as a specific test to determine if your dog's kidneys are able to produce concentrated urine. This test may require that your dog spend a day or more in the hospital. As part of the diagnostic plan, some veterinarians administer desmopressin (a synthetic replacement for ADH) to measure how the patient responds to ADH replacement.

Your veterinarian will evaluate your pet and discuss diagnostic testing options with you.

Treatment

Several synthetic ADH substitutes are available for use in dogs. Some of these agents are administered by injection or as pills, but some formulations are administered as drops into the eyes or nose.

Weaning the pet onto a sodium-restricted diet may also be part of the recommended therapy for diabetes insipidus.

Some pet owners may elect not to treat diabetes insipidus. In this case, the pet must have unrestricted access to water at all times. If water is restricted in any way, the pet can quickly become dehydrated and suffer life-threatening complications. Also, the home environment and daily routine must be modified to allow for frequent urination. This may include installing doggie doors, increasing the frequency of walks, and/or allowing the dog to spend more time outside.

With treatment, dogs with diabetes insipidus can live a normal life span and enjoy relatively normal lives. An untreated dog can also do very well, as long as plenty of water is always available.