

Dexamethasone Suppression Test

- A dexamethasone suppression test is used to help diagnose Cushing disease (a condition involving the adrenal glands) in dogs.
- Cushing disease affects the way the body produces the hormone cortisol, which has many functions in the body.
- Dexamethasone suppression testing can usually be performed at your veterinarian's office and takes a few hours to complete. The risks associated with dexamethasone suppression testing are minimal.

What Is a Dexamethasone Suppression Test?

Dexamethasone suppression testing is used to help diagnose Cushing disease, a condition that affects the adrenal glands in dogs. Cushing disease is much less common in cats.

What Is Cushing Disease?

Cortisol is a steroid hormone produced by the body's adrenal glands. Under normal circumstances, the body has highly developed systems called *feedback mechanisms* that control how much cortisol the body produces. This allows the adrenal glands to produce/release higher or lower amounts of cortisol, based on the body's needs. Cortisol affects many systems in the body, including the immune system and systems that control the body's fluid balance. Cushing disease occurs when something in the body causes the adrenal glands to disregard the normal feedback mechanisms. Sometimes Cushing disease is caused by a tumor on one of the adrenal glands, which continues to make cortisol despite signals from the body telling it to stop. Sometimes, the adrenal glands are "tricked" by another gland (the pituitary gland in the brain) into continuing to produce too much cortisol.

Cushing disease eventually results in negative effects on the body due to the sustained overproduction and release of cortisol. Clinical signs associated with Cushing disease can include the following:

- Increased drinking and urination
- Increased appetite

- Thinning hair
- Muscle weakness
- Liver enlargement

Cortisol overproduction can also cause problems with the body's regulation of sugar, a condition that can predispose a pet to developing diabetes.

What Is a Dexamethasone Suppression Test Used For?

A dexamethasone suppression test checks whether the body's cortisol feedback mechanisms are working properly. Normally, if the body is given cortisol from an outside source (for example, in a pill or by injection), the adrenal glands "realize" that there is additional cortisol in the body, and they respond by decreasing

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their own production and release of the hormone. However, if the feedback mechanisms are not working properly, the adrenal glands will continue to produce cortisol despite the introduction of additional quantities. This inappropriate response by the adrenal glands is consistent with a diagnosis of Cushing disease. Your veterinarian may also recommend additional testing to help confirm a diagnosis.

How Is a Dexamethasone Suppression Test Performed?

Your veterinarian will begin the test by drawing a small amount of blood from your dog to check the baseline ("starting") cortisol level. Afterward, a very small dose of cortisol is given by injection. Repeat blood samples are then taken at specific intervals (a few hours apart) to measure the cortisol level and

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determine if the body's response to the injection of cortisol is appropriate. The blood samples are submitted to a diagnostic laboratory. Results are generally available within a few days.

Your veterinarian will likely recommend that your dog remain in the hospital for the few hours that are needed to complete the dexamethasone suppression test. This is to avoid stress (for example, from a car ride), which can affect your dog's cortisol level and reduce the accuracy of the final test result. Generally, dogs undergoing dexamethasone suppression testing are temporarily kept in a very quiet area of the hospital to reduce stress and excitement as the test is being performed. Your veterinarian may ask you to withhold food on the day of the test. You should mention any medications or supplements that your pet may be receiving, as some chemicals can affect the accuracy of the test. Be sure to address any questions or concerns with your veterinarian.

What Are the Benefits and Risks of Dexamethasone Suppression Testing?

There are very few risks associated with dexamethasone suppression testing. The amount of cortisol that is given by injection is very small and is not enough to cause side effects. Drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at your veterinarian's office or at a diagnostic laboratory, so there is no risk of harm to your pet.

Diagnosing Cushing disease can be complicated, but early diagnosis can mean early treatment and a better chance at a normal life. Several different tests can be performed to diagnose Cushing disease, so your veterinarian may recommend performing multiple tests to help confirm the diagnosis.