

Cushing's disease (hyperadrenocorticism)

Although Cushing's disease is a severe disease the changes it causes can be quite subtle in the early stages. Many owners do not recognise the signs of Cushing's disease in their pet, instead confusing the changes caused by the disease with ageing. It is important to get an early diagnosis for this disease because, with treatment, affected animals can lead a normal and full life.

What is Cushing's disease?

Cushing's disease is caused by prolonged exposure of the body's tissues to high levels of the hormone, *cortisol*. It is also sometimes called "*hyperadrenocorticism*" or "*hypercortisolemia*". Cushing's disease is caused by an excess of the steroid hormone, cortisol. Cortisol has hundreds of possible effects in the body. Among its other vital tasks, cortisol helps to:

- Maintain blood pressure.
- Slow the immune system's inflammatory response.
- Balance the effects of insulin in breaking down sugar for energy.
- Regulate the use of proteins, carbohydrates and fats in the body.

Because cortisol is so vital to health, the amount of cortisol produced by the adrenal glands is precisely balanced and regulated by hormones produced in the brain (in the pituitary gland).

Nearly all cases of Cushing's disease are caused by a tumour in the pituitary gland. Although this is, strictly speaking, a brain tumour the tumour is usually tiny and benign and causes no effects related to pressure in the brain. A few cases of Cushing's disease are caused by a tumour in the adrenal gland.

Common signs of Cushing's disease

The steroid hormones affect almost every tissue in the body and the signs of Cushing's disease can be diverse.

- Increased thirst (and need to more frequently urinate)
- An increased appetite (and weight gain)
- Cushing's disease causes changes to the skin and haircoat.
- The skin may become fragile and thin. It bruises easily and heals poorly. Purplish pink stretch marks may appear on the abdomen.
- Female dogs may stop coming into season.
- Steroid hormones cause muscle wasting and weak muscles may make it difficult for your pet to exercise.
- You may notice that your dog is panting a lot or they may develop joint problems.
- In Cushing's disease, fat is deposited in the liver making it swell and this may be visible causing the abdomen to hang down with a pot-bellied appearance.
- High levels of steroid hormone in the blood suppress the immune system and healing process; so animals with Cushing's disease may have repeated infections or wounds that do not heal as quickly as expected.
- In most cases of pituitary-dependent disease the tumour in the brain is tiny and causes no physical effects. However, in a few animals the brain tumour is sufficiently large such that it can cause neurological signs e.g. depression, blindness or seizures.

Diagnosis

Cushing's disease can be very difficult to confirm. Your vet may suspect the disease based on simple blood tests but specific blood tests are needed to confirm the diagnosis.

Treatment

Most commonly used is a drug called trilostane (Vetoryl). This is a drug that inhibits the adrenal glands' ability to produce cortisol.

Other therapies may include drugs that actually destroy the adrenal gland or those that act at the brain level to inhibit the pituitary gland.

Once an animal with Cushing's disease is stabilised on treatment they will usually live a normal life (simply taking their tablets on a regular basis). Many dogs go on to live a normal lifespan.

Without treatment the complications can be significant and will seriously affect the quality of your pet's life.