

Living with Cushing's syndrome



YOUR DOG AND CUSHING'S SYNDROME

This pack has been designed to help answer any questions you may have about Cushing's syndrome and how it is treated.

It will give you some factual information about the condition as well as some guidance on how best to help your dog during treatment.

With daily medication, careful monitoring and a watchful eye, your dog will soon be feeling a lot better and many of the signs associated with Cushing's will start to disappear and will be kept under control.

This pack has been divided into easy to use reference sections together with an appointment calendar to help you treat your dog.



WHAT IS CUSHING'S SYNDROME

Dogs with Cushing's syndrome produce excessive amounts of cortisol.

This can have harmful effects on other organs and on the ability of the body to regulate itself.



A BRIEF DESCRIPTION

AN IMPORTANT HORMONE

Cushing's occurs in dogs who are producing excessive amounts of cortisol, an important hormone that helps to regulate the body's metabolism.

Cortisol plays a vital role in protein, carbohydrate and fat metabolism and is released into the bloodstream at times of stress to prepare the body for a flight or fight response.

Cortisol is produced by the adrenal glands - two small glands located in the abdomen, next to each kidney. A hormone called ACTH controls the production and release of cortisol from the adrenal glands. ACTH itself is produced by the pituitary gland, a pea-sized gland located at the base of the brain.

The concentration of cortisol in the blood of healthy animals varies greatly as the body's demand for cortisol fluctuates. For example, during a period of anxiety or illness, it is normal for the adrenal glands to increase their production of cortisol. Once this period of stress has passed, the cortisol concentration in the blood returns back to normal.

CORTISOL OVERPRODUCTION

In dogs with Cushing's syndrome, there is a chronic overproduction of cortisol over weeks and months. Although the concentration of cortisol in the blood of a dog with Cushing's also fluctuates greatly, it tends to be, on average, much higher than in healthy dogs. The excessive amount of cortisol released into the bloodstream has a harmful effect on the function of many organs and the body's metabolism.

WHAT CAUSES CUSHING'S SYNDROME

Cushing's will usually occur as a result of a tumour - often benign - of either the pituitary gland (most common) or adrenal glands (less common). Regardless of its cause, over time a dog suffering from Cushing's will develop a combination of clinical signs which may initially be associated with the ageing process.

Most dogs with Cushing's (approximately 85% of cases) have a benign tumour of the pituitary gland. The tumour cells produce large amounts of the hormone ACTH, which in turn stimulates the adrenal glands to overproduce cortisol.



The other cause of Cushing's (approximately 15% of cases) is a tumour of one (or very rarely both) of the adrenal glands, which produces excessive amounts of cortisol.

Irrespective of the cause of Cushing's syndrome in your dog, the result is always the same - more cortisol is produced than is actually needed by the body. This results in the slow development of a combination of clinical signs that are classically associated with Cushing's.

THE IMPORTANCE OF GETTING TREATMENT

If left untreated your dog may develop other serious conditions which will weaken its body and require further costly treatment.

Aside from the impact on your dog's quality of life, if left untreated Cushing's syndrome increases your dog's risk of developing several serious conditions such as diabetes mellitus (a deficiency of insulin resulting in high blood sugar), blood clots in the lungs, kidney infection, urinary tract infection and inflammation of the pancreas.

RECOGNISING THE SIGNS OF CUSHING'S SYNDROME

Cushing's is more often seen in older dogs and in smaller breeds of dog. Hair loss, pot-belly, skin diseases, changes in behaviour, frequent urination and a ravenous appetite are some of the most noticeable signs.

Cushing's is usually seen in older dogs. Small breed dogs are more likely to develop the disease. The most common signs of the disease are very similar to those associated with the normal ageing process.

This can make it difficult to diagnose and later monitor. It is always a good idea wherever possible to keep a note of the changes you see in your dog's habits, behaviour and appearance.



The most noticeable signs of Cushing's syndrome include:

- Large water intake
- Frequent urination and possible incontinence
- Ravenous appetite
- Pot belly
- Thin skin
- Hair loss or recurrent skin diseases
- Muscle wastage
- Lethargy
- Excessive panting

Not all dogs will react to the disease in the same way and your dog may not necessarily display all of these signs.

If you become concerned with your dog's welfare, you should consult your veterinary surgeon immediately.

THE EARLY STAGES

Initial signs might alert your veterinary surgeon to Cushing's syndrome. Diagnosis is not always straightforward. Your dog will need to undergo a series of blood tests.



SUSPECT CONDITION

Your veterinary surgeon will initially suspect Cushing's syndrome based on the clinical signs your dog is showing. You may have taken your dog for a check up because you have noticed that it is drinking and urinating more than usual. Your veterinary surgeon may have noticed a change in your dog's appearance, such as a prominent "pot belly". Sometimes, the results of a routine blood test may lead your veterinary surgeon to suspect this condition.

In most cases, the changes in your dog's appearance and behaviour caused by Cushing's occur very gradually, making them easy to overlook.

CAREFUL DIAGNOSIS

Once your veterinary surgeon suspects Cushing's, he/she will need to perform blood tests to confirm the diagnosis. A blood test to assess your dog's general health is also recommended.

You might remember that the concentration of cortisol in the blood of both healthy dogs and dogs with Cushing's fluctuates greatly throughout the day. It is for this reason that a diagnosis cannot be confirmed by just one measurement of cortisol. The two tests that are used to confirm a diagnosis of Cushing's are called the **ACTH stimulation test** and the **low-dose dexamethasone suppression test**. It may be necessary to perform both tests.

In the ACTH stimulation test, blood is taken to measure cortisol before and after your dog is given a synthetic version of the hormone, ACTH. This test assesses how well your dog's adrenal glands control the production of cortisol.

GETTING THE RIGHT RESULT

You will need to leave your dog with your veterinary surgeon for a few hours or for the day. Your veterinary surgeon may also elect to perform a test to identify whether your dog has a pituitary or an adrenal tumour.



MANAGING CUSHING'S SYNDROME

Cushing's syndrome cannot be cured but it can be successfully managed and controlled through medication. Vetoryl® is the only licensed treatment for Cushing's in the UK. It contains trilostane which is a chemical substance that blocks the production of cortisol.

Cushing's syndrome is not curable but with Vetoryl® it can be very effectively controlled; maintaining a good quality of life for your dog for years to come. Vetoryl®, which is the only licensed treatment for use in dogs, contains the active ingredient trilostane, a drug that rapidly reduces the production of cortisol by the adrenal glands.

CONTINUOUS CARE

Your dog will need to be carefully monitored and return for follow-up appointments on a regular basis. Once your veterinary surgeon is happy that your dog is stable, you will normally need to visit every three months to make sure nothing is affecting your dog's condition. At some stage during therapy, it might become necessary to adjust the dose of Vetoryl® prescribed.

Your dog will begin Vetoryl® at the recommended starting dose dependent on its bodyweight. You should then make an appointment for your dog to see your veterinary surgeon after 10 days. Your dog should be regularly examined and monitored using blood tests.



Your veterinary surgeon will assess your dog's response to Vetoryl[®] treatment by:

Looking for an improvement in clinical signs

In most cases you can expect to see a decrease in your dog's appetite and the amount they drink within the first couple of weeks on treatment. Other clinical signs may take 3 to 6 months to improve.

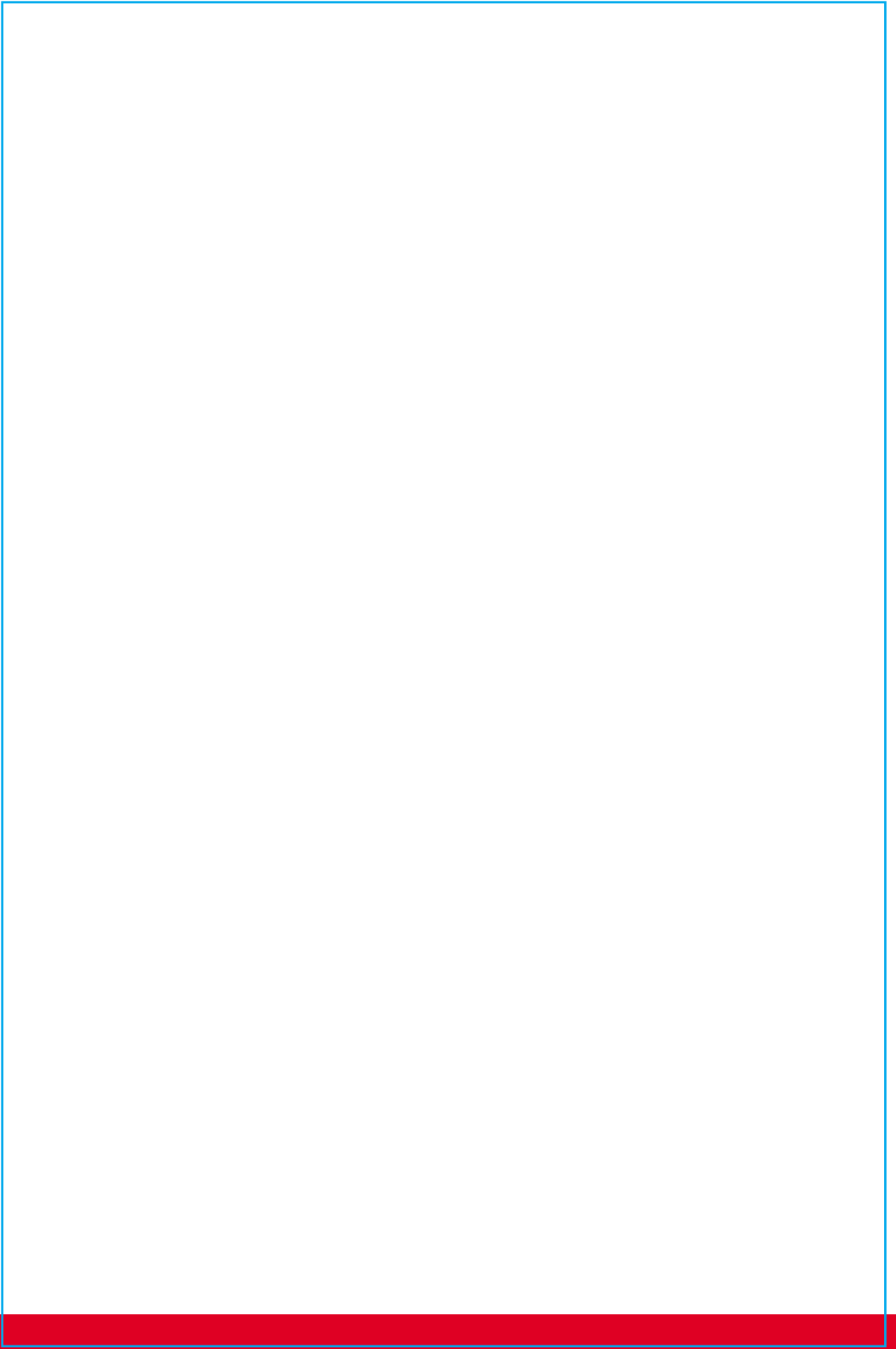
Performing blood tests

The results of routine blood tests and an ACTH stimulation test are used to assess the effectiveness of Vetoryl[®] treatment at 10 days, 4 weeks, 12 weeks and every 3 months after starting treatment.

Your dog should be closely monitored in the early stages of therapy so that the dose of Vetoryl[®] can be adjusted to meet its specific needs. This also helps to minimise the risk of side-effects or complications that could be harmful to your dog.

Once your veterinary surgeon is happy with your dog's progress, it is strongly recommended that you visit your veterinary surgeon every 3 months for regular monitoring so that dose adjustments can be made as required.

Please use the appointment calendar provided at the back of this booklet as a reminder of your appointments.



WHAT DO I NEED TO KNOW ABOUT VETORYL®?

Now that your dog has started treatment, you should soon notice some marked improvements.

It is important that you follow the instructions given by your veterinary surgeon.



Below are the answers to some of the questions you might have about Vetoryl®.

Why do I have to give Vetoryl® every day?

The active ingredient in Vetoryl® is a drug called trilostane. Trilostane is a short-acting drug which needs to be given every day to control the disease.

How do I give Vetoryl® to my dog?

Vetoryl® comes in a range of capsule sizes. Your veterinary surgeon will advise you of the right dose for your dog. We recommend that you give your dog Vetoryl® with a meal in the morning, as this will make it easier for your veterinary surgeon to perform monitoring tests 4-6 hours after dosing.

What should I do if I forget to give a capsule?

Speak to your veterinary surgeon. **DO NOT** give a double dose the next day.

How long will my dog require treatment?

Most dogs need to be given Vetoryl® every day for life.

How long will it take for my dog to improve on treatment?

The clinical signs of Cushing's such as lethargy, increased drinking, eating and urination improve quickly - often within the first two weeks of treatment. Skin changes and hair loss take up to 3 to 6 months to improve.

Will I need to revisit my veterinary surgeon?

Yes. It is important that your dog revisits your veterinary surgeon for assessment and monitoring tests at 10 days, 4 weeks and 12 weeks after starting Vetoryl[®], and thereafter every three months.

If your dog becomes unwell at any time whilst on Vetoryl[®], stop treatment and consult your veterinary surgeon as soon as possible.



Does Vetoryl[®] have any side-effects?

Vetoryl[®] is well-tolerated by most dogs. If your dog develops any signs of illness while on Vetoryl[®] including lethargy, vomiting, diarrhoea and anorexia, stop treatment immediately and contact your veterinary surgeon as soon as possible.

Too much jargon? Confused?

Don't worry. We have listed some of the terms with their definitions below.

ACTH

Stands for adrenocorticotrophic hormone. This hormone is produced by the pituitary gland and stimulates the adrenal glands to produce hormones, including cortisol.

ACTH stimulation test

This test is designed to measure the amount of cortisol released into the bloodstream.

Adrenal glands

Two small glands located next to each of the kidneys responsible for producing hormones that help control metabolism, blood pressure and fluid balance. Cortisol is one of the hormones released by the adrenal gland.

Cortisol

The body's natural stress-fighting and anti-inflammatory hormone.

Cushing's disease

Another name for hyperadrenocorticism - the term given to an endocrine condition characterised by an excessive amount of cortisol being released into the body. Harvey William Cushing (1869-1939) was a pioneering neurosurgeon and gave his name to this disease. The group of clinical signs resulting from the disease is known as Cushing's syndrome.

Glucocorticoids

Also known as steroids, are a group of hormones released from the adrenal glands that affect the body's metabolism. Cortisol is a glucocorticoid.

Enzyme

A protein that triggers chemical reactions in the body.

Hormone

Hormones act as chemical messengers to body organs stimulating certain life processes and retarding others.

Hyperadrenocorticism (HAC)

This is another name for Cushing's disease. It is often abbreviated to HAC.

Metabolism

The physical and chemical processes by which the body builds and maintains itself and by which it breaks down food and nutrients to produce energy.

Pituitary gland

A gland situated at the base of the brain. The pituitary gland releases ACTH which in turn stimulates the production and release of cortisol into the body.

Pituitary-dependent hyperadrenocorticism (PDH)

This is a form of Cushing's resulting from a tumour in the pituitary gland.

Adrenal-dependent hyperadrenocorticism (ADH)

This is a form of Cushing's resulting from a tumour in the adrenal glands

Trilostane

An active ingredient that is known to block the production of cortisol.

Vetoryl®

A drug containing the active ingredient trilostane developed by Dechra Veterinary Products to treat Cushing's syndrome in the dog.

QUICK REFERENCE GUIDE

Below is a quick reminder of the key things you need to remember about Vetoryl® treatment.

DO:

- Give Vetoryl® capsules in the morning with food so that they can be easily absorbed. This also allows your veterinary surgeon to carry out monitoring tests at the appropriate time of day.
- Take your dog back to your veterinary surgeon for regular monitoring.
- Note your dog's weight, water consumption, appetite and frequency of urination before treatment so you can monitor its improvement once treatment starts. Contact your veterinary surgeon if you have any concerns.
- Contact your veterinary surgeon immediately if your dog stops eating, drinking or urinating or becomes unwell while on Vetoryl® treatment.
- Wash hands after using Vetoryl®.
- Book follow up appointments with your veterinary surgeon every three months so that progress can be assessed.
- You might like to consider taking a photo before you start treatment - improvements such as hair regrowth, or the loss of a pot belly occur gradually so are less noticeable on a daily basis.

DO NOT:

- DO NOT split capsules.
- DO NOT handle if pregnant or trying to conceive.
- DO NOT change your dog's dose without advice from your veterinary surgeon.

Ensure you continue giving your dog the prescribed dose of Vetoryl[®] every day. Even if you notice dramatic physical improvements to your dog's health - for example your dog's appetite is back to normal or your dog is no longer incontinent - this does not mean that you should stop treatment. Vetoryl[®] will curb the excesses associated with the overproduction of cortisol but it will not cure the disease.

Monitoring is important and regular checks performed by your veterinary surgeon will ensure your dog continues to get the best possible care.

Remember to book follow up appointments with your veterinary surgeon every three months so that progress can be assessed. This is all the more important since:

- Other underlying diseases can be better prevented and detected.
- Your dog's medication might need to be adjusted.
- You will be able to share any concerns about your dog's health.
- Potential side effects can then be averted.



Helping you to help your dog

Now that your dog has been diagnosed with Cushing's syndrome, it is important to follow a strict treatment and monitoring plan.

The treatment and monitoring plan has been established following an extensive trial programme and is designed to optimise the management of Cushing's, helping to ensure your pet enjoys a good quality of life.

Week	Date	Monitoring Notes	Procedure
Day 1 Enter start date of treatment			<p>An ACTH stimulation test and other blood tests will have established that your dog suffers from Cushing's syndrome. Vetoryl® has been prescribed. Remember to read the package insert before starting treatment and discuss any concerns you may have with your veterinary surgeon.</p> <p>Start Vetoryl® treatment in the morning with food as instructed by your veterinary surgeon. Monitor your dog's water intake and appetite. If your dog shows any signs of being unwell, stop treatment and contact your veterinary surgeon immediately.</p>
Day 10			<p>Your veterinary surgeon will want to assess progress by performing an ACTH stimulation test. It is important to check that cortisol levels are not too low nor too high, and to ensure that there are no other underlying conditions affecting the health of your dog.</p>
Week 4			
Week 12			<p>Adjustments to your dog's Vetoryl® prescription may need to be made.</p>
Week 24			
Week 36			
Week 48			