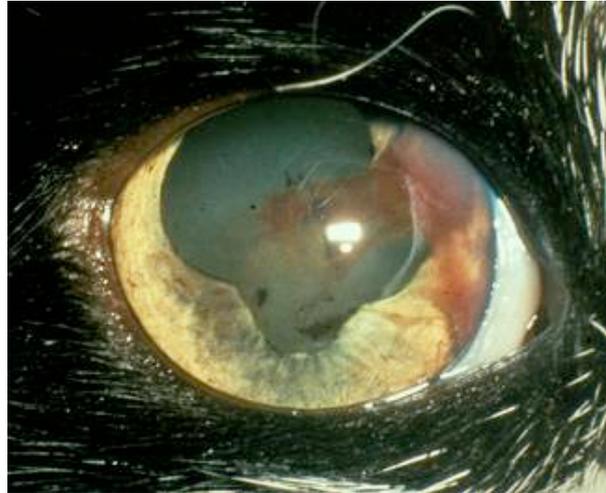


High blood pressure (hypertension) in cats

Hypertension is the medical term for high blood pressure, which is a common problem in people. It is recognised as a common condition in older cats.

Feline hypertension is commonly found as a complication of other underlying medical conditions (so-called 'secondary hypertension'), although primary hypertension (hypertension without any underlying disease) may also be seen in cats. In contrast to people, where primary hypertension (also called essential hypertension) is most common, secondary hypertension is more common in cats. The most common causes of secondary hypertension in cats are **chronic kidney failure** and **hyperthyroidism** (an overactive thyroid gland). Diabetic cats and obese cats may be at a higher risk of hypertension although this has not been proven. Another cause that is being more frequently recognised is hyperaldosteronism (a tumour of the adrenal gland).



Eye showing bleeding into the anterior chamber (in front of the lens) caused by hypertension

Effects of hypertension

Hypertension is damaging to the body. The effects are most serious in certain vulnerable organs:

Eyes

Bleeding into the eyes and retinal changes such as swelling and detachment can occur and this may result in damage to the cat's vision which is often permanent. In some cases, bleeding into the front chamber of the eye can be seen without the use of special veterinary equipment (see picture above).

Brain and nervous system

Bleeding in this area of the body can cause neurological signs such as odd behaviour, a wobbly or drunken gait, seizures, dementia and coma.

Heart

Over time, the muscle of one of the heart chambers (the left ventricle) becomes thickened, as the heart has to work harder to pump the blood when there is high blood pressure. In very severe cases, this can lead to the development of congestive heart failure. Affected cats may show signs of breathlessness and lethargy.

Kidneys

Over time, high blood pressure damages the kidneys and may increase the risk of kidney failure developing. In cats with existing renal failure, the hypertension is likely to make the renal failure significantly worse over time.

Clinical findings

As hypertension is often seen as an effect of other diseases, cats with hypertension may be showing signs attributable to their underlying problem. For example, in the case of hyperthyroid cats with high blood pressure, weight loss (in spite of a voracious appetite) and hyperactivity may be the major clinical signs. In many patients, no specific clinical signs of hypertension will be seen until the condition advances to the point where there is spontaneous bleeding into the eye or retinal detachment - these cats are often taken to a veterinary surgeon as they develop sudden onset blindness. Early recognition of hypertension is therefore important in order to minimise the severe and often permanently damaging effects of persistently high blood pressure on the eyes and other organs. Some cats with hypertension do appear depressed, lethargic and withdrawn, and many owners notice an improvement in their cats' behaviour once hypertension has been successfully managed even if signs of damage to other organs are not present.

Diagnosis

In order to try and detect hypertension early, regular blood pressure checks in cats from 7 years old are recommended. Hypertension should be suspected as a possibility in any cat with chronic renal failure, hyperthyroidism or heart disease. Hypertension is a cause of sudden-onset blindness or other ocular signs. Older cats are more likely to develop hypertension and there is good rationale therefore for including blood pressure assessment in the routine clinical examination of these cats.

Diagnosis of hypertension is ideally made following measurement of blood pressure. Various techniques and equipment are available and many veterinary clinics now have these facilities. The equipment used is often similar to that used routinely in people, with an inflatable cuff placed around one of the front legs or the tail. Measuring blood pressure only takes a few minutes, is completely pain-free and is extremely well tolerated by most cats.

A detailed eye examination is also essential since ocular disease is common in hypertensive cats. In mildly affected cats, subtle changes to the appearance of the blood vessels at the back of the eye (retina) and to the retina itself may be seen. In more severely affected cats, the changes can be dramatic and include retinal detachment and bleeding into the eye. Abnormalities are usually detected in both eyes although they may be more severe in one. In the absence of blood pressure measurement devices, a thorough ocular (eye) examination may enable a diagnosis of hypertension to be made and can be used to monitor progress once treatment has been started. However, proper blood pressure measurements are much preferred both for the diagnosis and monitoring of response to therapy.



Cat having its blood pressure measured

Management of hypertensive cats

In any diagnosed hypertensive, management has two broad aims:

- To reduce the blood pressure using anti-hypertensive drugs. A number of agents are available for treatment of hypertension although many of these are not specifically licensed for this use in cats. Examples of drugs commonly used are amlodipine (Istin; Pfizer) and the veterinary licensed agent benazepril (Fortekor; Novartis).
- To search for an underlying disease, such as kidney disease, which has caused the hypertension. In some cases, for example hyperthyroidism, treatment of the underlying disease may also resolve the high blood pressure.

It is also important to assess what complications of hypertension are present in any patient (such as ocular disease) so that these can be appropriately monitored following therapy. There is a great degree of individual variation in response to anti-hypertensive therapy and in some cats it can take some time to stabilise the blood pressure. This may involve trying several drugs and /or using more than one drug simultaneously. Response to therapy should ideally be monitored closely by measuring blood pressure and monitoring ocular abnormalities.

In patients with kidney failure, it is important to monitor renal function when using anti-hypertensive drugs.

Hypertension can cause damage to the kidneys, which may worsen the kidney disease. Use of anti-hypertensive agents may therefore be of potential value in slowing the progression of renal disease, although this has not yet been proved. Amlodipine and, more recently, benazepril are agents which have been used with success in renal failure patients without causing adverse effects.

Feeding a low salt diet may also be of value although it is unlikely to be sufficient as a sole treatment of hypertension. Feeding of cat treats should be discouraged since most of these are quite high in salt. Most hypertensive cats can be fed a normal commercial cat food. Prescription diets may be recommended in some cases, such as cats with chronic renal failure, where a protein and phosphate restricted diet is often helpful.

Prognosis

In primary hypertensive cases (where there is no underlying disease that has caused the high blood pressure) it is usually possible to manage the hypertension and prevent future complications such as damage to the eyes. In cases of secondary hypertension, the long-term outlook is very dependent on the nature and severity of the disease that has caused the high blood pressure. Cats with chronic renal failure that have developed hypertension have a worse prognosis than those where the cause of the high blood pressure is treatable, such as hyperthyroidism. It is important in all cases that the hypertension is monitored as accurately as possible on a regular basis in order to pre-empt any problems such as blindness. In cats where blindness has occurred as an effect of their hypertension, control of the blood pressure can still be beneficial and affected cats may live for several years with a good quality of life.