



## HYPERTENSION

Hypertension is the medical name for high blood pressure. Hypertension is fairly common as your pet gets older, particularly in cats.

### How is blood pressure measured?

Measuring blood pressure is completely painless. We have two different types of blood pressure machines. Our doppler machine uses a cuff placed around the front leg, this is inflated manually and a special probe is placed under the paw to detect the pulse. When using this machine headphones can be worn to avoid the noise upsetting your pet.

Our oscillometric machine uses a cuff around your pet's tail which means you can give them a cuddle and hopefully make it a little less stressful for them. This machine automatically inflates and deflates the cuff and calculates the blood pressure, no probe is required.

We use our oscillometric machine most of the time but with very small kittens or puppies the doppler machine may be more accurate.

We look at the systolic blood pressure value which in both cats and dogs should be below 150mmHg. We do allow for small increases at the surgery as we appreciate that the stress of a vet visit can result in elevated blood pressure, this is also seen in humans and is known as "white coat syndrome."

### What are the effects of hypertension?

- **Eyes** – high blood pressure causes bleeding of the blood vessels at the back of the eyes causing loss of vision. Eye problems are much more common in cats with high blood pressure and changes at the back of the eye can be seen in between 60-100% of cats with high blood pressure compared with only 5-20% of dogs.
- **Nervous system** – high blood pressure can cause bleeding in the blood vessels in the brain and other parts of the nervous system. This can cause altered behaviour, confusion and fits. Serious complications such as fitting are rare but many owners will report that their pets' demeanour improves with successful management of hypertension.
- **Heart** – high blood pressure makes it harder for the heart to pump blood around the body. This can lead to thickening of the heart muscle, rhythm problems, heart murmurs and possible heart failure. A nose bleed can be a

sign that there has been damage to the blood vessels from high blood pressure.

- **Kidneys**– high blood pressure increases the risk of kidney failure by damaging the glomeruli which are the filtration units in the kidney. This can result in protein in the urine which can be easily detected on a urine test.

It often takes several months before the hypertension causes damage to the body. For this reason it is sensible to have your pets blood pressure checked regularly as they get older, so that high blood pressure can be treated before any of the above problems develop.

### **What causes hypertension?**

Hypertension can be described as primary or secondary.

In primary hypertension there is no underlying cause and your pet just develops high blood pressure.

In secondary hypertension, it is caused by another condition. Kidney disease is a common cause of high blood pressure in both cats and dogs.

| <b>Disease</b>                              | <b>Dogs</b>                        | <b>Cats</b>  |
|---|------------------------------------|--|
| Chronic kidney disease                      | common                             | common   |
| Hyperthyroidism                             | N/A                                | Seen in about 20% of cats with hyperthyroidism. This can be both before and after treatment. |
| Hyperadrenocorticism (Cushings disease)     | Common, seen in over 60% of cases. | This condition is extremely rare in cats and doesn't tend to cause high blood pressure       |
| Diabetes mellitus                           | Seen in 25-50% of cases            | Not seen   |
| Primary hyperaldosteronism (Conns syndrome) | Extremely rare                     | Rare but high blood pressure is almost always seen.  |

### **How is hypertension treated in cats?**

Hypertension can usually be controlled very effectively in cats using a medication called amlodipine. The medication is very safe to use and almost all cats can be controlled with medication just once daily.

Cats taking this medication will have their blood pressure checked after one to three weeks of medication. The dose can be adjusted at this stage if necessary.

Treatment is lifelong because as soon as the cats stop taking the medication, their blood pressure will rise again. Cats on medication will have their blood pressure checked at least every six months to ensure that the hypertension remains well controlled.

It is also important to search for underlying disease that may have caused the hypertension. Physical examination and blood tests for kidney and thyroid disease are usually recommended. Specific treatment for these diseases can then be given if necessary.

### **How is hypertension treated in dogs?**

Management of any underlying disease is important. In dogs angiotension converting enzyme (ACE) inhibitors and calcium channel blockers are used to manage hypertension. Additional medications may be required depending upon the response to initial therapy. The blood pressure will be regularly checked and then once your dog is stable they will be checked every 6 months.

### **What is the prognosis for high blood pressure?**

With primary hypertension, in many cases it is possible to control the blood pressure and prevent the development of complications, especially if the problem is caught early.

In secondary hypertension the blood pressure can usually be controlled, as above. The long term outlook depends on the nature and severity of the underlying problem and how easy that is to treat and manage.

### **What if my pet has already suffered blindness?**

Sometimes the first sign of high blood pressure is a sudden onset of blindness, especially in cats. In these cases medication must be started immediately to reduce the high blood pressure. Rest is also advised. If the blood pressure can be reduced within 24-48 hours of the blindness starting there is a chance that vision may be restored. Unfortunately if the blindness has been present for several days, it is likely to be permanent.

If your pet does not recover their site, they may seem confused and bump into things initially, however they can still have a good quality of life. Many pets seem to adjust to being blind after a few days or weeks, and learn to rely more on their other senses. There are cases reported of completely blind cats being able to hunt mice and birds!

Even where permanent blindness has occurred, it is still important to control the blood pressure to prevent further damage to the other body organs.