



## VESTIBULAR DISEASE IN RABBITS

Rabbits are unfortunately prone to developing vestibular disease, a syndrome where they suddenly develop a 'head tilt' and become very unbalanced. It can be very traumatic for owners to find their rabbit like this and can also be a stressful time for your rabbit. Vestibular disease can be caused by many conditions, some of which need advanced testing to diagnose definitively.

In general, we think about vestibular disease being caused by either a central vestibular problem (in the brain) or a peripheral vestibular problem (in the ear). Both of these conditions can occur suddenly and in most cases with ongoing care and treatment a large portion of these rabbits either recover completely or go on to lead active and fulfilling lives even with a head tilt. Recovery can take several weeks or months and, in most cases, those rabbits that only partially recover learn to live happily with their condition and only a few minor changes to their living arrangements are required.

### **Peripheral Vestibular Disease**

This condition involves the inner ear - the part of the ear that converts balance and sound to nerve impulses that can be read by the brain.

*An inner ear infection can be due to bacteria introduced:*

- Via the blood stream
- From the Eustachian tube that connects the nose with the ear
- Due to infection from the external ear.

*Other less common problems affecting the inner ear*

- Foreign bodies (such as grass seeds)
- Trauma
- Growths or cancers
- Toxins

In general, the most accurate way to diagnose inner ear disease is with a CT or MRI scan. External ear exams and radiographs (x-rays) are not always sensitive enough to pick up signs of inner ear disease. If the middle or external ear is also infected, a discharge can sometimes be seen in the ear canal. A bulging or abscess at the ear canal base is also common.





## What can be done for an inner ear problem?

Inner ear infections can often be treated with antibiotics, often requiring 3-6 weeks of treatment. Large amounts of pus may sometimes need to be removed via an operation to open up the area. A surgically obtained culture swab may help identify the bacteria involved and help choose the appropriate antibiotic.

### Central Vestibular Disease

This condition involves the brain and nerve centers controlling the body's balance control.

*Causes of Central Vestibular Disease are:*

- Bacterial infection. These can originate in the inner ear or can be spread from other areas.
- Viral infection
- Bleeding or blood clots
- Protozoal disease (i.e. *Encephalitozoon cuniculi* infection (see below for more information) or Toxoplasmosis)
- Growths and cancers
- Trauma
- Toxins
- Disease of the Liver or Kidney

Often rabbits with Central Vestibular Disease will have signs of problems in other areas of the brain such as dullness, loss of appetite, paralysis and seizures.

### *Encephalitozoon cuniculi*

This is a common parasite that infects mainly rabbits. Rabbits are infected by ingesting or inhaling the spores (that are passed in the urine of animals with active infection) or from their mother during pregnancy. It has been reported that 50- 70% of rabbits will have this organism and not show any clinical signs. However other rabbits that are infected can have serious consequences to infection with kidney disease, spinal, cataracts and central vestibular disease all seen. A blood test is available and can be useful to rule out EC as a cause of infection however as the test looks for the rabbit's antibody response to the infection a positive result does not always mean that the organism is causing the vestibular signs as it is possible they are affected and not showing any signs. The only definite test to confirm infection is to take a sample of brain tissue (which is not really an option for a living rabbit).





## How do we treat vestibular disease in rabbits?

The first step is to try to find out the cause of the vestibular disease as this helps us to be able to formulate a treatment plan. Blood testing and advanced imaging (ie CT or MRI) are generally recommended. In addition to treating the primary cause of the disease supportive care is also very important. Some of the supportive care measures we commonly use are as follows:

- Anti-inflammatory medication
- Provide lubrication for the downward eye
- Acupuncture
- Supportive feeding (ie with critical care)
- Fluid therapy
- Anti-nausea medications – although rabbits cannot vomit they may still experience nausea and some rabbits seem to show good improvement on these medications
- Provide a small padded area to prevent further injuries
- Modify the environment to ensure that the rabbit cannot harm themselves, a smaller area is required if the rabbit is rolling and providing 'bumpers' of rolled up towel around the enclosure.
- Make sure to include their bonded pair in any change of environment
- Cleaning away their faeces and urine that becomes matted on their coat if they are unable to do so themselves

Recovery from vestibular disease can take weeks to months and sometimes a persistent head tilt remains. This is generally due to permanent nerve damage and is often this is more evident when the rabbit is stressed or confined. A lot of rabbits can live very happily with a head tilt and often the head tilt can bother humans more than the rabbit as their world is the right way up to them!

Sometimes the middle ear can be involved in the disease and damage to the facial nerve can occur. This is seen as drooling, lip drooping or eye lids drooping. This can be a transient or permanent problem and can have some long-term effects on the mechanical grinding of the teeth (as the tongue has decreased mobility).

If you are at all concerned about your rabbit or have any other questions please don't hesitate to get in touch with us.

