

# Metropolitan Veterinary Hospital

## Akron Veterinary Internal Medicine/Oncology Practice

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## Peripheral Vestibular Disease

Client Handout

**Summary:** The vestibular system is responsible for the body's equilibrium and balance. It coordinates eye, body, and limb movements in response to changes of the head's position. The vestibular system relies on visual function, sensors in the body's joints and tendons that relay information back to the brain, sensors in the inner ear, and normal central nervous system function. Peripheral vestibular disease affects the inner ear or vestibulocochlear nerve and causes the animal to have abnormal bodily movements, but the central nervous system is unaffected.

**Clinical Signs:** Nystagmus (abnormal twitching or jerking of the eyes), head tilt, ataxia (uncoordination, difficulty walking, falling to one side, rolling), circling, strabismus (abnormal deviation of the eyes or one eye), vomiting/nausea, anorexia/decreased appetite, may appear anxious or disoriented but have normal behavior/attitude.

### Causes:

**Idiopathic Feline or Canine ("Old Dog") vestibular disease-** cause is unknown, diagnosed by excluding other causes, treated by providing supportive care and most animals recover in 10-14 days.

**Congenital vestibular disease-** a condition animals are born with, signs are usually present by 3 months of age, more common in purebred animals.

**Hypothyroidism-** a decrease in function of the thyroid gland, other signs of illness are generally present (obesity, hair loss/rat tail appearance, etc.)

**Hypoxia-** lack of adequate oxygen in bodily tissues, due to another disease process.

**Neoplasia-** many different tumors or types of cancer can disrupt the vestibular system, signs will progressively worsen, other signs of illness may be present.

**Otitis media/interna-** middle or inner ear infections.

**Inflammatory polyps-** a polyp forms in the middle ear, common in young to middle-aged cats.

**Aural cholesteatoma-** a cyst that forms in the inner ear, may require surgery.

**Trauma-** any injury involving the petrous temporal bone.

**Ototoxicity-** some drugs/antibiotics if overdosed or used for extended periods of time can be toxic to structures of the ear.

### Potential diagnostics:

**Physical/neurologic exam-** most cases of vestibular disease can be adequately localized and treated based on history/onset and severity of signs and a thorough and complete examination.

**Blood work-** to test for any metabolic causes (hypothyroidism, etc.)

**Otoscope examination-** using a scope to examine the ear canals and the tympanic membrane (ear drum) looking for any signs of infection, inflammation, or trauma.

**Brainstem auditory evoked response electrophysiological test-** tests the function of the nerves between the ears and the brain.

**Radiography-** radiographs (X-rays) of the skull and bony part of the ears.

**Computed tomography (CT scan)-** to further evaluate the skull, ears and brain.

**Magnetic resonance imaging (MRI)-** best evaluation of the soft tissue structures of the ear and brain.

**Myringotomy-** placing a needle through the tympanic membrane (ear drum) and collecting fluid, then evaluating the fluid (cytology and culture) based on the type of cells that are present to determine if there is inflammation or infection present.

**Treatment:** Specific treatment varies based on the cause of the disease. One of the mainstays of treatment is supportive and symptomatic care. If animals have severe clinical signs and cannot be cared for at home they may have to be hospitalized. Most animals will be started on an anti-nausea medication called Meclizine, this is the same medication people take for seasickness. Antibiotics will be given if an infectious cause is suspected. Animals may need assistance walking, using the bathroom, and eating/drinking. They should be kept confined when unsupervised to avoid injuring themselves.

Although some animals may never completely recover from this disease and some may have re-occurrences of signs, most animals with peripheral vestibular disease will improve over time and can lead a normal healthy life.