

# Polyradiculoneuritis in Dogs, Acute

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## BASIC INFORMATION

### Description

Acute polyradiculoneuritis is an inflammation that develops suddenly when the body's immune system attacks the nerves. It results in generalized weakness and paralysis.

After leaving the spinal cord, spinal nerves join together to form the nerves that travel to peripheral (distant) areas of the body. Some nerves activate the muscles and are called *motor nerves*. Other nerves relay information on touch, temperature, pain, and sense of position of the legs and are called *sensory nerves*. In acute polyradiculoneuritis, autoimmune inflammation usually affects the motor nerves, resulting in weakness that may progress to complete paralysis. A similar condition, called *Guillain-Barré syndrome*, occurs in people.

### Causes

In most dogs, the cause of acute polyradiculoneuritis is never identified. Some dogs develop the disease 7-10 days after fighting with raccoons, hence the name *coonhound paralysis*. In these dogs, the disease is caused by a reaction to the saliva of the raccoon. Rarely, the disease occurs after vaccination or an infection.

### Clinical Signs

Clinical signs typically occur very suddenly (acutely). The primary sign is weakness, with the hind legs affected first. Signs usually progress rapidly over 1-2 days to also involve the front legs. Affected dogs may walk with a crouched, short-strided gait. They become tired quickly with any activity.

Paralysis of all four legs can occur within 2-5 days after the onset of clinical signs. Severely affected animals may not be able to stand, lift their heads, or move their legs. Decreased muscle tone in the legs is common, and over time the muscles may actually shrink (atrophy).

Rarely, the nerves of the head are involved, with decreased blinking and other signs. In severely affected animals, the muscles of the diaphragm may be affected. These dogs are unable to breathe on their own and require mechanical ventilation to survive. Some dogs appear to be in pain or very sensitive to touch and may cry out. These signs occur with inflammation of the sensory nerves.

### Diagnostic Tests

A tentative diagnosis may be made from the history and clinical examination findings. Routine laboratory tests are usually recommended to search for an underlying illness. X-rays may be performed to look for pneumonia, which can occur from the animal

lying on its side and inhaling (aspirating) food or stomach contents. Other tests may be needed to rule out other diseases that cause similar signs. A definitive diagnosis is difficult to establish, because there is no single test that can be performed for this disease.

A biopsy of peripheral nerves may reveal evidence of inflammation in some instances, but spinal nerve biopsies are difficult to obtain and are rarely done. Analysis of cerebrospinal fluid (CSF) obtained through a spinal tap may reveal evidence of inflammation, such as elevated protein content. Specialized electrophysiologic testing procedures, such as electromyography and nerve stimulation testing, help to identify nerve dysfunction that supports the diagnosis. Often the diagnosis is made by excluding other diseases that cause similar clinical signs.

## TREATMENT AND FOLLOW-UP

### Treatment Options

There is no specific treatment for acute polyradiculoneuritis. Supportive care is needed while the nerves try to recover. Physical therapy exercises can be performed to prevent muscle wasting and encourage improved muscle tone. Affected dogs require clean, dry, padded bedding and frequent changes in their position to prevent bedsores and pneumonia. Assistance is needed with urination and defecation and keeping the animal clean. If the muscles of the diaphragm are involved, the dog may need to be placed on a ventilator.

The eyes may require lubrication if the dog cannot blink, and assistance may be needed with eating and drinking. Supplemental nutrition may also be recommended. Many dogs require hospitalization for intensive care when they are paralyzed. Any secondary problems that arise because of this disease also require specific treatment.

### Follow-up Care

Severely affected animals are often hospitalized for an extended period. Once they are discharged, frequent follow-up visits are needed during the recovery period. Continued nursing care may be required at home. Long-term follow-up may not be necessary in dogs that make a full recovery.

### Prognosis

Most dogs will recover, but full recovery may take several weeks to months, depending on the severity of weakness. Prognosis is worst for dogs that have difficulty breathing or aspiration pneumonia.