

Rocky Mountain Spotted Fever in Dogs

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Rocky Mountain spotted fever is a disease transmitted by ticks and is most prevalent in the east coast, midwest, and plains regions. Rocky Mountain spotted fever affects dogs and humans. Through blood tests, it has been demonstrated that cats may also become infected, but the disease in cats is minimal. Various rodents, raccoons, and fox may carry the causative agent of Rocky Mountain spotted fever.

What causes Rocky Mountain spotted fever?

Rocky Mountain spotted fever is caused by *Rickettsia rickettsii*. It is one of many rickettsia organisms, which on the evolutionary scale are between bacteria and viruses.

How is Rocky Mountain spotted fever transmitted?

R. rickettsii is transmitted from animal to animal through the bite of the American dog tick (*Dermacentor variabilis*) and the Rocky Mountain spotted fever tick (hence the catchy name) *Dermacentor andersoni*.

The tick has various life stages, several of which feed on animals. Any of these stages could be infected with *R. rickettsii* and transmit Rocky Mountain spotted fever. The tick must be attached to a host for a minimum of 5-20 hours for transmission of *R. rickettsii* to occur. Since it is transmitted by ticks, most cases of Rocky Mountain spotted fever occur during the tick season from April to September.

What are the symptoms of Rocky Mountain spotted fever?

There are two stages of Rocky Mountain spotted fever: Subclinical and acute. In the subclinical stage, dogs are infected, but do not show outward signs of the disease though they may have laboratory test abnormalities. These dogs may recover quickly.

In the acute stage, dogs may have a variety of clinical signs, which can mimic many other diseases. These include a loss of appetite, fever, depression, pain in the muscles and joints, swollen lymph nodes, and edema (fluid accumulation) in the face and legs. Some animals develop pneumonia or heart arrhythmias, which can lead to sudden death. Some dogs have gastrointestinal signs such as vomiting and diarrhea. Most dogs have neurological signs (dizziness, depression, stupor, seizures) and these can sometimes become very severe. Most dogs develop hemorrhages in the retina of the eye, and may also have blood in the stool or nose bleeds. Renal failure can occur. Most of these signs appear 2 to 14 days after the tick bite. The dogs may have slight anemia, a low number of platelets (platelets help blood to clot), and increased liver enzymes as measured by a [blood chemistry panel](#). Some dogs develop ulcerations of the mucous membranes and extremities.

How is Rocky Mountain spotted fever diagnosed?

Several blood tests are available which test for the dog's antibodies (proteins produced to fight off the infection) to *R. rickettsii*. Since we need to look for a change in the antibody levels, usually two tests will be done 2 weeks apart and the results compared. Dogs with an active infection will show a significant rise in the amount of antibody present.

A test is also available which detects antigens (protein parts) of *R. rickettsii*. This test can become positive as early as 4 days after the tick bite. This test is not a blood test, but a small biopsy of the skin at the site of the tick bite is tested.

Dogs with Rocky Mountain Spotted Fever will have a low white blood cell count early in the course of infection, and then the cell numbers may increase. During the most severe phase of the disease, the white blood cell counts may again drop, along with the red blood cell counts and platelet numbers. Other organs may be damaged, so liver enzymes, and kidney function tests may be at abnormal levels.

How is Rocky Mountain spotted fever treated?

The antibiotics tetracycline, doxycycline, or enrofloxacin are used. Treatment is for 10-14 days. Some dogs can develop severe disease and must be treated for shock or severe nervous system symptoms. If treated within the first several days, most dogs will recover completely - some dogs actually show improvement within hours of starting the antibiotics. Dogs who have severe damage to their nervous systems may not recover completely. German Shepherds and certain lines of English Springer Spaniels tend to have a more severe form of the disease.

How can I prevent my pet from getting Rocky Mountain spotted fever?

[Tick control](#) is the main way to prevent Rocky Mountain spotted fever. Products which repel and kill ticks such as those containing permethrin are excellent choices. Tick collars containing the active ingredient amitraz are also used, sometimes in conjunction with permethrin products in those areas with high tick infestations.

It appears that dogs who have had Rocky Mountain spotted fever and recovered are immune to reinfection for years.

Because rodents play a role in the life cycle of the *Dermacentor* ticks, rodent control is important as well.

There is no vaccine for Rocky Mountain spotted fever.

Can people get Rocky Mountain spotted fever?

Yes. The common symptoms in people include a rash, fever, chills, headache, and muscle aches. Other less common symptoms include nausea, abdominal pain, and swollen lymph nodes.

People do NOT get infected directly from a dog, but through a tick bite or the contents of a tick. This is why it is very important not to remove a tick from a pet with your bare hands. Check out our article [How do I safely remove a tick?](#) to learn the proper way to remove a tick.