

## **Spotted Fever Group *Rickettsia* in California: Rocky Mountain Spotted Fever & Pacific Coast Tick Fever**

### **What are spotted fever group (SFG) *Rickettsia*?**

SFG *Rickettsia* are a type of bacteria transmitted by ticks that cause diseases often associated with a fever and a rash. There are two human diseases caused by SFG *Rickettsia* in California: Rocky Mountain spotted fever and Pacific Coast tick fever.

### **What is Rocky Mountain spotted fever (RMSF)?**

RMSF is a disease caused by the *Rickettsia rickettsii* bacteria. In the United States, most cases happen in the southeastern and south-central United States. In California, only a few cases of RMSF are reported each year, and cases have been reported from throughout the state. Cases have also been reported in people who have traveled to northern Mexico and been exposed to brown dog ticks.

### **How do you get RMSF?**

RMSF bacteria are transmitted by the bite of an infected tick. In California, the American dog tick (*Dermacentor variabilis*), the Pacific Coast tick (*Dermacentor occidentalis*), and the brown dog tick (*Rhipicephalus sanguineus*) may transmit the bacteria to people and dogs when they bite. A tick must be attached to the skin for at least 4 to 6 hours before it can infect a person. A person also can become infected if parts of a crushed tick or feces from the tick enter a scratch or opening in the skin or mucous membranes.

### **Can I get RMSF from my dog?**

Dogs may get RMSF, but you cannot get RMSF directly from a dog. However, a dog may bring infected ticks into the home. The American dog tick and Pacific Coast tick do not live very long in homes and suburban yards. In contrast, the brown dog tick prefers areas where there are dogs and can live easily in homes and yards. Information on the brown dog tick and how to control it can be found on the [Tick Encounter webpage](#).

### **What are the symptoms of RMSF?**

Symptoms of RMSF include sudden onset of moderate to high fever 2-14 days after a tick bite. If not treated, the fever can last for 2 to 3 weeks and lead to other symptoms, such as weakness, deep muscle pain, severe headache, chills, blood-shot eyes, and a painful abdomen. In at least half of the reported RMSF cases in California, a rash appears that quickly spreads to much of the body, including the palms of the hands and soles of the feet. Severe cases can result in kidney failure and death.

## How is RMSF diagnosed?

Early diagnosis of RMSF depends on symptoms and history or suspicion of a tick bite. Blood tests are not useful within the first week of illness. During the early stages of the disease, the bacteria may also be detected by specialized laboratory tests in skin or in blood. Blood tests later in the illness can show the body's immune response to infection with the RMSF bacteria. People should be treated as soon as RMSF is suspected.

## How is RMSF treated?

RMSF patients are treated with an antibiotic prescribed by a doctor, usually doxycycline. RMSF is a serious disease and can be fatal.

## What is Pacific Coast tick fever (PCTF)?

PCTF is caused by infection with the *Rickettsia philipii* bacteria and is transmitted by the bite of an infected Pacific Coast tick (*Dermacentor occidentalis*). Most commonly, PCTF may cause a small open wound about ¼ inch in size (about the size of a pencil eraser) that turns into a dark scab (called an eschar). Treatment and prevention measures are the same as with RMSF.

## How can I prevent getting RMSF and PCTF?

The best way to avoid getting RMSF and PCTF is to protect yourself from tick bites.

- While outside in areas with ticks (called tick habitat), stay in the middle of the trail, and avoid grassy areas, the leafy areas under trees, contact with logs, tree trunks, and fallen branches or tree limbs in forests.
- Use an EPA-registered [insect repellent](#) for use against ticks. Repellents containing at least 20% DEET will keep ticks away and are applied to the skin and clothing. Always follow directions on the container and be especially careful when applying repellent on children.
- Apply permethrin to clothing (only) to kill ticks.
- Keep pets on veterinarian-recommended tick-bite prevention "spot-on" medications.
- Shower or bathe as soon as possible after returning indoors from tick habitat.
- Thoroughly check yourself and others for ticks during and up to three days after activities in tick habitat. Before washing clothes, place the clothes worn while in tick habitat in a hot dryer for 10 minutes to kill ticks crawling on clothing.
- If many brown dog ticks are found in your area, a professional pest control company may need to be consulted to address with the problem.

## What should I do if I find an attached tick?

- Remove the tick as soon as you find it.
- Using tweezers, grasp the tick's mouthparts as close to the skin as possible.

- Gently pull the tick straight out, using a firm, steady motion. Do not twist or jerk the tick.
- Wash your hands and the bite area with soap and water. Apply an antiseptic to the bite site.
- See your healthcare provider if you develop any symptoms within 30 days of the tick bite.

**Where can I find more information on RMSF and SFG *Rickettsia*?**

The U.S. Centers for Disease Control and Prevention has information available on their [RMSF webpage](#) and on their [Other Tick-borne Spotted Fever Rickettsial Infections webpage](#).

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