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## What is Spotted Fever Rickettsiosis (SFR)?

Spotted Fever Rickettsiosis (SFR) refers to a group of related illnesses caused by bacteria in the genus *Rickettsia*. The two most common SFR illnesses in Virginia are Rocky Mountain spotted fever caused by *Rickettsia rickettsii*, and Tidewater spotted fever caused by *Rickettsia parkeri*. Rocky Mountain spotted fever can be transmitted to humans by the bites of an infected American dog ticks, lone star ticks, or by brown dog ticks. Tidewater Spotted fever can be transmitted to people by the lone star tick or by the Gulf Coast tick. Lone star ticks are by far, the most common cause of tick bites to people in Virginia.

## Who gets an SFR illness?

Anyone who has an exposure to an infected tick can get an SFR infection. The disease is most often reported in adult males, children under the age of 10, or people who are immune-compromised. People with frequent exposure to dogs or who reside near and spend time in wooded areas or areas with brush and tall grass are more likely to come in contact with ticks.

## How are SFR illnesses spread?

SFR illnesses are transmitted by the bites of infected ticks, but might also be transmitted by contamination of a skin wound with the bodily fluids from an infected tick. SFR illnesses cannot be transmitted from one person to another. Usually, an infected tick must be attached to a person for a period of 10 to 20 hours for disease transmission to occur, but there have been rare instances of SFR transmission in which the tick was attached for less than a few hours.

## What are the symptoms of SFR illnesses?

Symptoms of Rocky Mountain spotted fever (RMSF) are characterized by a sudden onset of moderate to high fever, a severe headache, fatigue, muscle pain, chills and a rash. The rash associated with RMSF typically begins on the ankles and wrists and spreads to the rest of the body including the soles of the feet and palms of the hands. If left untreated, RMSF can be fatal. Tidewater spotted fever is typically less severe and its symptoms include fever, headache, muscle aches, a rash and an eschar (dry, dark scab). People diagnosed with this illness typically have a rash with widely separated spots, and always develop an eschar at the site of the infectious tick bite. The eschar starts as a puss-filled pimple and eventually ruptures and scabs over.

## How soon after exposure do symptoms appear?

Symptoms usually appear within two weeks of the bite of an infected tick.

## How are SFR illnesses diagnosed?

SFR illnesses can be accurately diagnosed by use of laboratory tests for *Rickettsia* DNA in the patient's whole blood samples or punch biopsy samples from rash spots. If an eschar is present, a swab sample or punch biopsy can be collected from it, or the eschar scab can be collected for DNA testing to accurately diagnose a *Rickettsia parkeri* infection.

## What is the treatment for SFR?

Prompt treatment in the first five days of illness with an appropriate antibiotic (i.e., doxycycline) will minimize the chances of severe illness complications, and usually results in a rapidly effective cure. Doxycycline antibiotics should be used in both children and adults.

## How can RMSF be prevented?

As much as possible, avoid areas where ticks are found, such as leaf litter in woods, or fields with tall brush and weeds. When working or playing in tick-habitats, wear light-colored clothing and tuck pants into socks, tuck shirt into pants, and wear clothing, shoes and socks that have been treated with permethrin based "repellents" for clothing. Apply other repellents (containing active ingredients such as DEET, oil of lemon eucalyptus, Picaridin, Bio-UD, or IR3535) to exposed skin, particularly to the legs at and below the knees and to the arms at the elbows. If working or playing in a tick-infested area, watch for and remove any ticks on your body every few hours. Applying tick repellents to legs and clothing may be helpful to prevent tick attachment. Be sure to follow label instructions before using any repellent. Tick populations may be controlled by applying insecticides to vegetation along trails or around the edges of lawns, and by mowing grass frequently in yards and outside fences.

## What should I do if I find a tick attached to my body?

Any attached ticks should be removed as soon as possible. To remove an attached tick, grasp the tick firmly with tweezers as close as possible to where the tick's head is attached to your skin, and pull upward and out with a firm and steady pressure until the tick lets go. Be careful not to squeeze, crush, puncture or rupture the tick's body because its body fluids may contain the infectious bacteria. After removing the tick, thoroughly disinfect the bite site and wash your hands. If the tick is removed within the first 10 hours after attachment, the risk of contracting SFR is greatly reduced.

## Does past infection with SFR make a person immune?

Yes, a person who is infected with a particular disease causing SFR agent may be temporarily protected from being infected by that particular SFR agent again for a year or two.

## How can I get more information about SFR?

- If you have concerns about SFR, contact your healthcare provider.

## Spotted Fever Rickettsiosis (including Rocky Mountain Spotted Fever) Fact Sheet

- Call your local health department. A directory of local health departments is located at the [VDH Local Health Districts page](#).
- Visit the Centers for Disease Control and Prevention website at the [CDC page on Rocky Mountain spotted fever](#) or at the [CDC page for other spotted fevers](#).

October 2018

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