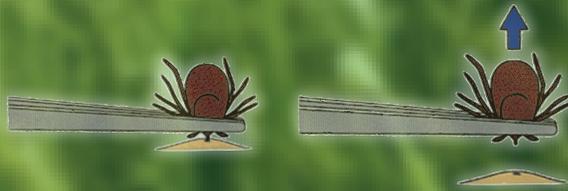


# Tick Removal

Prompt removal of any attached tick that you find may help prevent infection.

- Use fine-tipped tweezers or shield your fingers with a tissue, paper towel or rubber gloves, when removing the tick; otherwise infectious agents may enter through mucous membranes or breaks in the skin.



- Grasp the tick as close to the skin surface as possible and pull upward with steady, even pressure.
- Do not twist or jerk the tick; this may cause the mouthparts to break off and remain in the skin.
- Be careful that you do not squeeze, crush or puncture the tick body, because its fluids may contain infectious organisms.
- Do not use nail polish, petroleum jelly, alcohol or heat to remove the tick.
- After removing the tick, thoroughly disinfect the bite site and wash your hands with soap and water.
- Seal the tick in a labeled plastic bag and store it in the refrigerator. If you become sick, take the tick with you to the doctor.

# Preventing Tick-Borne Disease

Preventing tick-borne disease is as easy as:

## 1 DRESSING APPROPRIATELY

- Wear light-colored clothing so that ticks are easier to see and remove.
- Tuck pant legs into socks; tuck shirt into pants.

## 2 CONDUCTING FREQUENT TICK CHECKS

- On yourself, your children and your pets.
- Check for ticks after all outdoor activities.

## 3 USING TICK REPELLENT

- Apply 30% DEET (or other effective tick repellent) to exposed skin.
- Pre-treat (or purchase) clothes treated with 0.5% permethrin, an insecticide that both kills and repels ticks.
- Always follow directions on the label when using repellents and insecticides.

**DOGS CAN GET SICK AS WELL.** Don't forget to ask your veterinarian about tick control methods for your pets.

Fairfax County Health Department  
Division of Environmental Health  
Disease Carrying Insects Program

703-246-2300  
TTY 703-591-6436  
fightthebite@fairfaxcounty.gov  
www.fairfaxcounty.gov/fightthebite  
This information is available in  
alternative formats.



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# Ticks and Tick-Borne Diseases in Fairfax County



Fairfax County Health Department  
703.246.2300 | TTY 703.591.6436  
fightthebite@fairfaxcounty.gov

# You may not be aware that you have been bitten by a tick.

If you have been in a tick-infested area and experience any of the symptoms described below, you should contact your doctor.

All of these diseases are treatable if detected early, and remember — not all ticks are infectious!

## Lyme Disease

Lyme disease is an inflammatory illness caused by *Borrelia burgdorferi*, a corkscrew-shaped bacterium. The disease is transmitted to humans via the bite of ticks infected with the bacteria. Ticks become infected after feeding on white-footed mice and other small mammals, which are the reservoirs for the bacteria. Deer do not harbor *B. burgdorferi* and therefore do not pass the Lyme disease bacteria to ticks.

The first sign of infection is usually a red rash called erythema migrans that begins at the site of the tick bite after a delay of three to 30 days. The rash gradually expands over several days, and gives the appearance of a bull's-eye — a spot with a ring around it. However, not all persons develop this rash. Patients also experience fatigue, chills, fever, headache, muscle and joint aches, and swollen lymph nodes.

If untreated, the infection may spread to other parts of the body. This can produce a number of other symptoms that may appear separately, including loss of muscle tone on one or both sides of the face, severe headaches and neck stiffness, shooting pains, heart palpitations, dizziness, and pain that moves from joint to joint.

After several months, approximately 60% of patients with an untreated infection may begin to have intermittent bouts of arthritis with severe joint pain and swelling. Up to 5% of untreated patients may develop neurological complaints for months after infection.

## Anaplasmosis

The symptoms of human granulocytic anaplasmosis (HGA) can vary, but most patients have a moderately severe fever and exhibit symptoms such as headache, muscle pain, and malaise. These symptoms will typically appear after an incubation period of one week after tick exposure. Anaplasmosis can be fatal in some cases if left untreated.

## Babesiosis

Babesiosis is caused by a protozoan called *Babesia microti*. Most people who are infected, however, do not display any symptoms. The disease is more severe in the elderly and in people with suppressed immune systems and those who have had their spleen removed. The symptoms of babesiosis include fever, chills, sweating, muscle pain, and fatigue. They typically occur after an incubation period of one to four weeks, and can last several weeks.

## Ehrlichiosis

Human monocytic ehrlichiosis (HME) is caused by the bacteria *Ehrlichia chaffeensis*, which infect white blood cells. Symptoms usually appear within a few weeks of infection. Early symptoms may include a sudden high fever, headache, muscle aches, chills, and a general feeling of weakness and fatigue. Typically, the disease is more severe in people with weakened immune system.

These are the three tick species found in Fairfax County that can transmit disease. Tick activity is seasonal, with higher tick activity in the spring and summer. Ticks feed slowly and will not transmit disease (if they are infected) until they have been attached for several hours. Remember to check yourself often for ticks and remove any that you find as soon as possible.

## Lone Star Tick (*Amblyomma americanum*)



## Deer Tick (*Ixodes scapularis*)

## American Dog Tick (*Dermacentor variabilis*)



## Rocky Mountain Spotted Fever

Rocky Mountain spotted fever is caused by the bacteria *Rickettsia rickettsii*. It can be very difficult to diagnose in its early stages, even by experienced physicians who are familiar with the disease. The combination of a fever, rash, and history of tick bite is a strong indication, but it is not always easy to detect. People infected with *R. rickettsii* generally develop symptoms five to ten days after a tick bite, and the symptoms are generally severe enough to cause them to visit a physician in the first week of their illness. Initially, Rocky Mountain spotted fever may resemble a variety of other infectious and non-infectious diseases. Other symptoms may include: (initially) nausea, vomiting, muscle pain, and lack of appetite; and (as the disease progresses) abdominal pain, joint pain, and diarrhea.