

## Prevent tick bites

**Prevention of Lyme disease and other tick-borne diseases** starts with reducing your exposure to tick bites. Tick-borne diseases generally occur during the summer months when ticks are most active. To prevent these illnesses you must prevent tick bites. Use the following personal protection measures to prevent tick bites:

- Avoid tall grass and over-grown areas.
- When hiking stay in the middle of trails.
- Consider using insect repellent.
- Tuck pant leg into socks.
- Wear long-sleeved shirts and closed shoes.
- To see the ticks easier for removal, wear light-colored clothing.
- Examine yourself, your children, and pets for ticks when returning indoors.
- Shower using a washcloth or puff to remove any unattached ticks when you come indoors.
- Talk to your veterinarian to find out how to protect your pets from tick bites.

You can prevent tick-borne illness.

Use personal protection methods.



Check yourself, your children, and pets for ticks

A single bite from an infected tick can give you any of the diseases mentioned in this brochure. It is also possible to become infected with more than one disease.

To remove a tick, use tweezers and grasp the tick's mouthparts as close to the skin as possible.



Tick removal.

*Ixodes scapularis*, black-legged or deer tick.



*Dermacentor variabilis*, the American dog tick



Actual sizes.

**Prompt tick removal is the key to preventing tick-borne illness. Prompt treatment is the key to preventing serious illness.**



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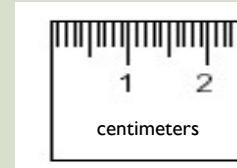
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# Lyme Disease and Other Tick-borne Diseases



From left to right: The deer tick adult female, adult male, nymph, and larva on a centimeter scale.



Actual centimeter scale.

**Prevent Lyme disease and other tick-borne diseases.**

**Ban the bite**

**Connecticut Department of  
Public Health**



## Lyme Disease



Deer tick on  
blade of grass

**Lyme disease** was first discovered in Lyme, Connecticut in 1977. Reporting for this disease began in Connecticut in 1987. Since then, it has become the most commonly reported disease spread by insects in Connecticut with an average 2,147 cases reported annually to the Connecticut Department of Public Health (DPH).

Lyme disease is caused by bacteria called *Borrelia burgdorferi*. This bacteria is transmitted through the bite of an infected tick, *Ixodes scapularis*, also known as the deer tick.

**Symptoms** typically begin with an expanding red rash around the area of the bite and flu-like symptoms that include muscle aches, fatigue, and fever. These symptoms generally appear 3-32 days after the bite. If it is not diagnosed and treated promptly, Lyme disease may reappear weeks to months later, causing serious complications of the joints, nervous system, and heart. The early signs of the disease can be overlooked or misdiagnosed. In addition, some people bitten by an infected deer tick do not develop the early symptoms of Lyme disease. Lyme disease is treated with antibiotics.



Expanding red rash.

## Ehrlichiosis

**Ehrlichiosis** reporting started in Connecticut in 1995. Of the two principal forms of ehrlichiosis recognized in the United States, human granulocytic ehrlichiosis (HGE) is the primary form of the illness seen in Connecticut. Since 1995, an average of 52 cases per year were reported to the DPH.

HGE is caused by bacteria called *Anaplasma phagocytophila*. These bacteria are transmitted through the bite of the same tick that causes Lyme disease.

**Symptoms** of HGE generally include sudden onset of fever, headache, muscle aches, and/or fatigue. Nausea, vomiting, or rash may be present in some cases, although many people infected will not become sick. Illness can range from mild to potentially life threatening. Symptoms occur 7-21 days after the tick bite. Laboratory findings may include thrombocytopenia (decreased number of blood platelets), leukopenia (a decreased number of white blood cells), and/or elevated liver enzymes in the blood. Ehrlichiosis may be confused clinically with Rocky Mountain spotted fever (RMSF); however, absence of a prominent rash is a good indicator it is not RMSF. As with Lyme disease, this disease is also treated with antibiotics.

## Babesiosis

**Babesiosis** reporting began in Connecticut in 1991. Since then, an average of 35 cases annually were reported to the DPH.

Babesiosis is caused by a one-cell parasite of the red blood cells called *Babesia microti*. The parasite can be seen within red blood cells when viewed under a microscope.

**Symptoms** of babesiosis may include fever, chills, muscle aches, fatigue and jaundice secondary to hemolytic anemia (destruction of red blood cells). These symptoms may appear 1-4 weeks after the bite. While most people will not become ill, babesiosis can be a potentially severe and sometimes fatal disease. Babesiosis is treated with a combination of medications which usually include quinine and/or clindamycin.

**Co-infections** are possible through the bite of an infected deer-tick. This means, you can become infected with Lyme disease and ehrlichiosis, and/or babesiosis with one bite of an infected deer tick. The only way to prevent these diseases is to prevent tick bites.

## Rocky Mountain Spotted Fever

**Rocky Mountain spotted fever (RMSF)** is the most severe and most frequently reported rickettsial illness in the United States. Rickettsia are closely related bacteria found world-wide. It has been reportable in Connecticut since 1980. Although physicians have been reporting RMSF longer than the other tick-borne illnesses in Connecticut, an average of only 3 cases are reported annually to the DPH.

Rocky Mountain spotted fever is caused by *Rickettsia rickettsii*. Unlike the previously mentioned tick-borne diseases in Connecticut, RMSF is transmitted by the bite of *Dermacentor variabilis*, the American dog tick.

**Symptoms** of RMSF include sudden onset of fever, headache, and muscle pain, followed by a rash. These symptoms may appear 3-14 days after the tick bite. As with other tick-borne diseases, RMSF can be difficult to diagnose in the early stages, and without prompt treatment it can be fatal. This disease is treated with antibiotics.

## Treatment

**Treatment** of any tick-borne disease should begin as soon after infection as possible. If you are bitten by a tick, remove the tick as soon as possible using tweezers and pulling with steady pressure. Do not yank the tick out of your skin. Do not use petroleum jelly, hot matches, nail polish remover, or any other substance to remove a tick. Do not crush the tick's body as it may contain infectious fluids. Wash the area of the bite with soap and water, and put an antiseptic on it. Write on the calendar the date you removed the tick and the part of the body from which it was removed. If you experience any of the symptoms previously mentioned for any of the tick-borne illnesses, contact your physician as soon as possible. It will be important for your physician to have a complete history of your exposure to ticks. If you experience an expanding red rash and can not see your physician right away, take a picture of the rash and bring that picture with you to the physician. Early treatment is the key to prevent severe illness.