

If bitten by a deer tick...

If you remove a deer tick that has become engorged while feeding, you should consult your physician right away, since a single dose of antibiotic given within 72 hours of the bite has been shown to prevent Lyme disease. Remember to save the tick for later identification (see following page).

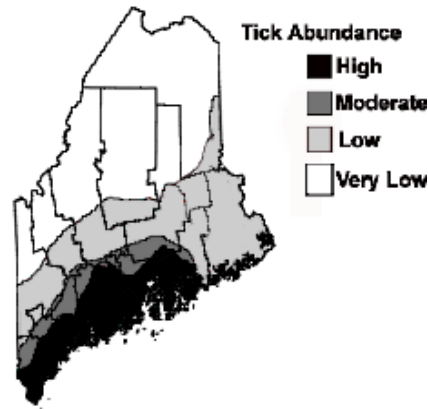
The first symptom of Lyme disease in humans is usually an expanding red rash greater than 2 inches in diameter at the site of the tick bite which may occur within a few days or several weeks later. The rash may be preceded or accompanied by flu-like symptoms such as fever, headache, chills, nausea, facial paralysis, or pain in the muscles and joints. If Lyme disease is suspected, call your doctor immediately. Early antibiotic treatment is very effective and can prevent later, more serious, complications. Not all patients develop the rash, however, and many do not recall a tick bite. The bites of ticks, mosquitoes, and black flies can produce a red, itchy, swollen area that may persist for a week or so but is usually less than 2 inches in diameter.

Lyme disease in pets. Although cats rarely show symptoms of Lyme disease, dogs may be seriously affected. The first indications include lameness, loss of appetite, fever, and lethargy. Dogs usually respond well to prompt antibiotic treatment. If deer ticks are abundant, dog owners should consult with veterinarians about canine Lyme vaccines available. Tick collars or other anti-tick treatments should also be used.

Other tick-borne pathogens. Two other deer tick-transmitted diseases, human granulocytic anaplasmosis and babesiosis, occur in Maine. These infections may start with headaches, fever and other flu-like symptoms, but without the characteristic bulls-eye rash of Lyme disease. Anaplasmosis may also affect **dogs** and **horses**. Powassan encephalitis virus has also been found in Maine and to date has resulted in four human cases. It is spread by the woodchuck tick *Ixodes cookei*.

The deer tick in Maine

This map shows a very generalized picture of the location and abundance of deer ticks in Maine through 2007. Although most often found in coastal areas, increasing numbers of ticks have been found inland. Continuing research will update this range and study the ecological variables which influence the spread.



Tick identification. If you find ticks you think may be deer ticks and would like to have them identified, send them in a small vial of alcohol in a crushproof container to the laboratory listed below. Include the name and age, if from a person, type of animal or source, the location where acquired, and the date found. **Submitted ticks are not tested for the Lyme disease spirochete.**

Maine Medical Center Research Institute
Center for Vector-borne Disease
75 John Roberts Rd. - Suite 9B
South Portland, ME 04106
<http://www.mmcri.org/lyme/>
email: ticklab@mmc.org



PROTECTING YOURSELF FROM LYME DISEASE IN MAINE

Lyme disease is an illness caused by a corkscrew-shaped bacterium (a spirochete) that is transmitted to humans and domestic animals by the bite of a tick. Frequently starting with a rash and flu-like symptoms, Lyme disease, if untreated, may progress to cause arthritis and neurological problems. Over 1200 cases of Maine-acquired Lyme disease have now been officially recognized.

The tick that transmits Lyme disease is the deer tick, *Ixodes scapularis*. This tick is well established in southern areas, particularly in coastal counties, but is increasingly found in interior Maine as well.

The risk to humans of contracting Lyme disease is greatest from the bite of the inconspicuous nymphs, which are most active in June and July. Adult ticks are found most often in the fall and in early spring as they search for larger hosts, primarily deer. The larger, reddish females can also transmit the Lyme bacteria, but the smaller, black males do not attach long enough to do so.



Female

Adult Dog Ticks (*Dermacentor variabilis*)



Male

The deer tick, which transmits Lyme disease (left), and the common dog tick (right), enlarged for comparison. The dog tick is not thought to transmit Lyme disease.

Photos by Kevin Byron.



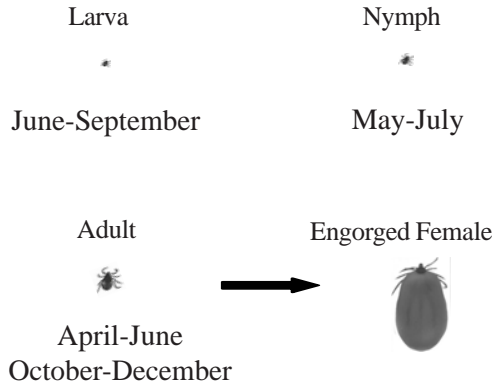
Female

Adult Deer Ticks (*Ixodes scapularis*)



Male

THE ACTUAL SIZE OF DEER TICKS



Not all deer ticks contain the spirochete. Field studies in Maine have shown that although in some sites more than half the adult ticks sampled were infected, infection rates may vary considerably, even between adjacent areas at the same location.

Thirteen other species of ticks have been found in Maine, some of which look very much like deer ticks. They may bite humans and domestic animals but are not thought to transmit Lyme disease.

Ixodes cookei, the ‘woodchuck tick,’ which cannot be reliably distinguished from the deer tick without a microscope, is widely distributed in Maine. It usually feeds on wild animals such as woodchucks and skunks, but will also feed readily on humans and domestic animals.



Actual size

Dermacentor variabilis (shown), the American ‘dog’ tick, is commonly found in late spring and early summer. It is larger than the *Ixodes* ticks and can be distinguished by its characteristic white markings. It is not found October-December in Maine.

Precautions to avoid tick bites:

- Wear light-colored clothing and tuck your pants into your socks and your shirt into your pants when walking in the woods, brush, or tall grass. Deer ticks attach to clothing and move upwards.
- Use a repellent containing DEET according to label instructions - particularly on shoes, socks, and pant legs. (Use caution in applying high-concentration products to the skin, especially on children.)
- People may pretreat clothing with a permethrin-containing product, which both repels and kills ticks. **Caution:** This is not for use on skin; use only as directed on the label.
- To prevent engorged ticks from reproducing near your home and to protect your pets, consult your veterinarian about tick repellents and acaricides.
- **Inspect yourself, your clothing, your children, and your pets for ticks when you come in from the field and then again in a few hours.** Ticks often attach at body folds, behind the ears, and in the hair. If possible, shower and wash clothes immediately. Heat drying is effective in killing ticks.
- Mowing grass and cutting brush may reduce tick habitats in problem areas.
- When transporting pets or game, caution should be taken to avoid bringing ticks to new areas.

Prompt removal of attached ticks is extremely important. Lyme disease is rarely transmitted before the tick has been attached for 36 hours. Using tweezers, grasp the tick as close to the skin as possible and pull until the tick lets go. Do not handle ticks with bare hands. Do not squeeze the tick. Apply antiseptic to the bite. Save the tick in a small vial of 70% alcohol. Common tick removal methods, such as applying vaseline, nail polish or scorching with a match, are not recommended.



Drawing by K. Wolfe