Public Health Fact Sheet

Lyme (http://www.mass.gov/eohhs/docs/dph/disease-reporting/guide/lyme.pdf)
Erlichiosis (http://www.mass.gov/eohhs/docs/dph/disease-reporting/guide/ehrlichiosis.pdf)
Babesiosis (http://www.mass.gov/eohhs/docs/dph/disease-reporting/guide/babesiosis.pdf)
Rocky Mountain Spotted Fever (http://www.mass.gov/eohhs/docs/dph/disease-reporting/guide/rocky-mtn-spotted-fever.pdf)
Tularemia (http://www.mass.gov/eohhs/docs/dph/disease-reporting/guide/tularemia.pdf)

Frequently Asked Questions

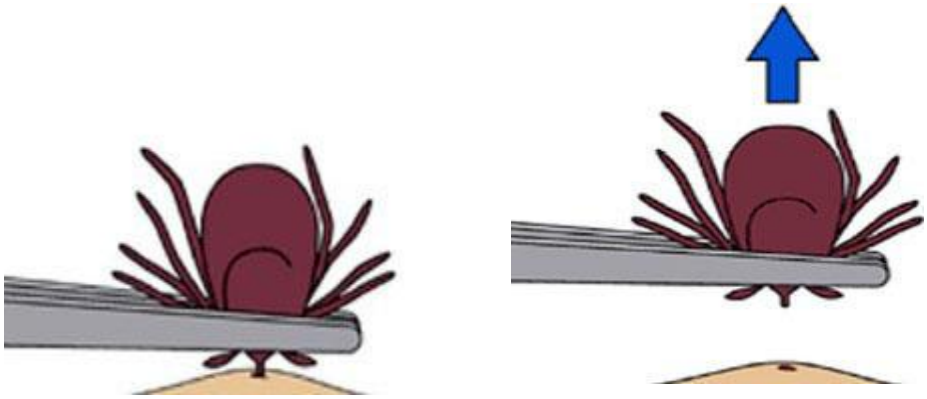
How can you prevent infection?

Avoiding bites: It is best to wear long pants with the pants legs tucked into socks. One can also reduce tick exposure by wearing protective clothing/socks impregnated with a tickicide such as permethrin. Shower immediately after outdoor activity.

Dress to prevent tick exposure: It is best to wear long pants with the pants legs tucked into socks. One can also reduce tick exposure by wearing protective clothing/socks treated with a tickicide, such as permethrin. You can find tick preventive clothing sporting goods stores including:

Insect Shield
http://www.insectshield.com/work/Casual-Wear-C18.aspx
Columbia Sportswear
http://www.columbia.com/Insect-Blocker%C2%AE-Apparel/Collection_Insect_Blocker,default,pg.html
REI
http://www.rei.com/
LL Bean
http://www.llbean.com/

If you are bit: Ticks should be removed promptly upon detection. Care should be taken to avoid getting potentially infectious tick blood on the skin of either the patient or the one removing the tick. The proper technique is demonstrated below. The bite location should be wiped with alcohol after tick removal.



What should I do if I pull a deer tick off of me?

- If you pull a deer tick off of you, you may want to save the tick for identification, seek medical care, and, if it is appropriate for you, receive a one day dose of doxycycline. This prophylactic treatment has been shown to reduce the risk of becoming infected and developing symptoms. Whether or not you choose early prophylactic treatment, you want to be particularly watchful for the emergence of symptoms over the next 3 to 30 days. If they do appear, you must be immediately evaluated and treated where appropriate with a two to three week course of antibiotics. While various options are suitable, the Town's Boards of Health recommend early prophylactic therapy started within 72 hours of the time the tick is removed, followed by vigilance in the event symptoms still occur.

What are the signs and symptoms of the common tick-borne illnesses?

The symptoms of tick-borne illnesses vary depending on disease. The most common symptoms associated with tick-borne illness develop anywhere from 3-30 days after exposure, appear much like the flu, and may include some or all of the following:

Fatigue
Chills
Headache
Expanding Red Rash
Muscle and joint aches
Swollen lymph nodes
Sweating
Loss of appetite
Nausea
Fever

What does the expanding rash look like?
The rash is red and can appear in several different forms. Common to all them is that the rash expands in size over the course of a day or two. A number of different rash presentations are shown on the website (see signs and symptoms).

Is there a cure for Lyme disease?
A dosage of antibiotics can effectively treat Lyme disease in the early stages. If left untreated the symptoms may resolve but come back later presenting with joint, cardiac, and neurologic complications. Here again antibiotics are prescribed typically in oral form, but intravenous therapies are available as well.

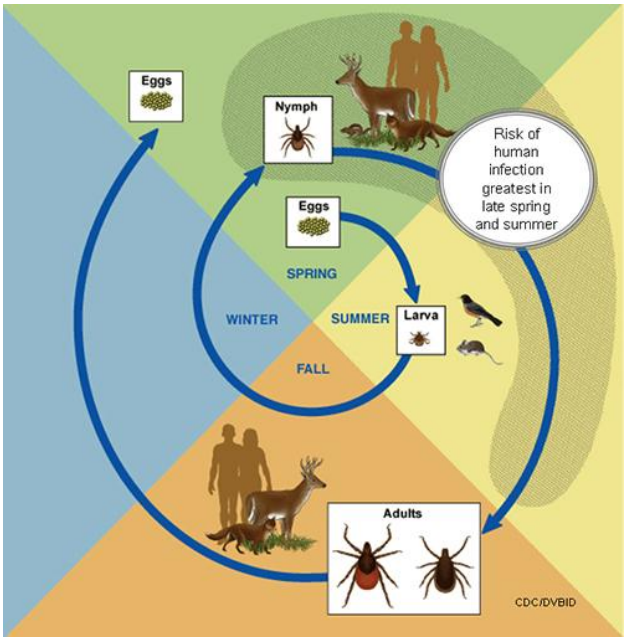
How long should I wait before treating a tick bite?

A tick bite may be treated immediately after removing a tick provided that the tick has been on the patient for no more than 72 hours. The treatment is provided before symptoms develop and consists of just a one day dose of antibiotic. Lyme disease must always be treated with a two to three week course of antibiotics as soon as signs and symptoms are detected. Signs and symptoms typically appear within 3 to 30 days of being bitten. Blood tests are often used to confirm diagnosis. They take up to two weeks to become positive after symptoms develop and should not be used as a reason to delay treatment if the diagnosis of a tick-borne disease is suspected.
Testing criteria: The first route to diagnosing a tick-borne illness is history of possible exposure, and clinical signs and symptoms. In addition laboratory tests including a blood test to detect antibodies against the bacteria can be used (ELISA).

What ticks carry disease? What diseases do they carry?
The blacklegged deer tick (*Ixodes scapularis* in the Eastern United States and *Ixodes pacificus* in the Western United States) is a vector for Lyme disease (*Borrelia burgdorferi)*, Babesiosis (*Babesii Microti)*, and Human Granulocytic Anaplasmosis (previously called Human Granulocytic Erlichiosis, caused by *Anaplasma phagocytophilum).*

The American Dog Tick or Wood Tick (*Dermacentor variabili)* is a vector for Rocky Mountain spotted fever (*Rickettsia rickettsia)* and Tularemia (*Francisella tularensis)*
While dog ticks do not carry the organism responsible for Lyme disease, they may carry the organisms responsible for transmitting Rocky Mountain Spotted Fever and Tularemia. These diseases are serious but comparatively rare.

What is the life-cycle of the tick?
The Deer Tick (*I. Scapularis*) has a two year life cycle with eggs laid and larva hatching in the spring and primary parasitization of small rodents and birds in the summer months. During the spring of the following year, these larvae mature into nymphs and reach full adulthood in the following fall. The spring and summer months during the second year of life are when the risk of human infection are greatest.
Deer ticks feed on a variety of animals including: deer, mice, birds, dogs (but not cats), and of course, humans. Deer ticks generally prefer to live in damp shady areas, but can be found anywhere in nature.



Are tick-borne illnesses underreported?
Yes, according to the CDC and Massachusetts Department of Health, Lyme disease and tick-borne illnesses in general are quite underreported. This is in part due to the way Lyme disease is reported. Lyme disease cases are reported to the CDC only if they meet specific criteria developed for research purposes. Many cases are treated without additional confirmatory testing based on overall clinical presentation (summer fever plus recent tick bite, etc.). This leads to underreporting by physicians. It should be noted, however that the number of cases reported to the CDC correlated very well with total number of cases. Even if it appears that there are

relatively few cases, year over year increases in these reportable cases often matches the same scale of increase when taken as a whole.
The issue of underreporting also means that small variations in the number of reported cases can lead to the *appearance* of large swings in Lyme disease incidence by year or by location. Having said that, Lyme disease remains the most common arthropod vector-borne (carried by insects) illness in the United States. Lyme disease has a so called bimodal age distribution, meaning that children age 5-9 and adults 55-59 represent two peaks of disease incidence.

Are there post-exposure preventive measures?
It is worth noting that some areas of Massachusetts (particularly the Cape and Islands) have fast-track programs for tick bites. In these locations, any time a tick is found attached, an individual can go to any clinic or emergency room and get one day of doxycycline to stop potential infection before it can take hold. This idea is somewhat controversial as antibiotics are not entirely benign, but your physician can help weigh the risks and benefits of post-exposure prophylactic antibiotics over potential adverse effects.