*** Tick Removal**

- Do not use nail polish, petroleum jelly, alcohol or heat.
- Do not twist, jerk or squeeze body of tick.
- Grasp tick close to skin surface with tweezers.
- Carefully pull tick straight upward and out.
- Place tick in a zip lock bag and have it tested by a lab.
- Use antiseptic on bite site and disinfect tweezers.
- See a physician for diagnosis, testing and treatment.

Protect Yourself Conduct Frequent Tick Checks

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

Dress Appropriately

- Wear light-colored clothing so that ticks are easier to see and remove.
- Tuck pant legs into socks and tuck shirt into pants.
- Dry clothes at high temperature for 30 minutes to kill ticks.

Use Tick Repellent*

- Always follow directions on the label when using repellents and insecticides.
- There are products containing DEET for skin and PERMETHRIN for clothing.
- Pre-treat or purchase clothes treated with 0.5% permethrin, an insecticide that both kills and repels ticks.
- Use tick control products for pets that your veterinarian recommends.

*NatCapLyme does not make specific product recommendations or grant any warranties.

Practice Tick-Safe Landscaping

Reduce the Number of Ticks in Your Yard

- Keep lawn mowed short. Remove leaf litter and clear tall grass and brush.
- Lay down wood chips or gravel between lawns/ recreational and wooded areas.
- Keep playground equipment, decks, and patios away from yard edges and trees.

Blacklegged Tick

Larva Nymph Adult

Permethrin is a common synthetic chemical

effective in controlling ticks in your yard. It is

widely used as an insecticide, acaricide, and

Reapply as often as needed according to label.

Permethrin has low human toxicity and is available

sure to check label. Permethrin is the name of the

active ingredient, not the product brand name.

Always read and follow label instructions before

These methods usually do not have toxic effects

· Biological pesticides are derived from plants,

animals, fungi, bacteria, minerals, or other

Permethrin will not harm your garden plants.

in garden centers and hardware stores.When looking for permethrin products, make

Make the first application between late March and

early May. Apply to ivy, shrubs, trees, grasses and

Chemical Control

insect repellent.

other plants.

applying insecticides.

on animals or people.

natural sources.

Biological Based Pest Control

*Actual Size

• Use deer resistant plantings and fencing. Eliminate bird feeders.



www.natcaplyme.org

Please visit our website for more information on ticks and tick-borne diseases

Member Combined Federal Campaign



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TICK-Borne Diseases





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These are four tick species that can transmit disease. A tick bite can give you more than one infection. Tick activity is year round. An infected tick can transmit disease within hours of tick attachment. Remember to check yourself often for ticks and remove any that you find as soon as possible.

American Dog Tick

(Dermacentor variabilis)

Lone Star Tick

(Amblyomma americanum)



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

*** Lyme Disease**

Lyme disease is an infection caused by the bacterium Borrelia burgdorferi. The bacteria is transmitted to humans by the bite of an infected tick. Ticks become infected after feeding on white-footed mice and other small mammals. Early symptoms of infection include fever, fatigue, headache, muscle and joint aches, and swollen lymph nodes. A skin rash called erythema migrans may develop at the site of the tick bite. Not all people will develop this rash. Left untreated, later symptoms may involve the joints, heart, and central nervous system. Antibiotic treatment can be can be effective if started early in the disease process. Delayed or inadequate treatment can lead to more serious symptoms, which can be disabling and difficult to treat.

* Ehrlichiosis and Anaplasmosis

Human monocytic ehrlichiosis (HME) is caused by the bacterium *Ehrlichia chaffeensis*. Human granulocytic ehrlichiosis, renamed anaplasmosis (HGA), is caused by *Anaplasma phagocytophilum*. Symptoms for both HME and HGA can include fever, severe headache, chills, muscle pain, vomiting and general discomfort. A small percentage of patients may die if not treated. Treatment should be based on symptoms as well as platelet and liver enzyme tests and history of tick exposure. Both HME and HGA respond rapidly to treatment with antibiotics. Treatment should not be delayed while waiting for specific serology results.

*** Babesiosis**

Blacklegged (Deer) Tick

(Ixodes scapularis)

Femal

Babesiosis is an infection caused by the malaria-like protozoan *Babesia microti*. Like malaria, the protozoan inhabits red blood cells and can cause anemia. The disease usually begins one to three weeks after an lxodes tick bite, and symptoms can include fever, chills, drenching sweats, headaches, muscle pain, fatigue, anemia, and jaundice. Babesia has been shown to be transmitted through transfused blood. The disease is more severe in the elderly and in people with suppressed immune systems. Babesiosis is treated with a combination of drugs.

Southern Tick Associated Rash Illness

Borrelia lonestari is a bacterium that is a possible causative agent for South Tick Associated Rash illness (STARI). STARI is a Lyme disease-like illness that often presents with a bull-eye rash (erythema migrans). Symptoms of STARI include fever, fatigue, headache, muscle and joint pain. Antibiotics are the treatment of choice.

K Rocky Mountain Spotted Fever

Rocky Mountain Spotted Fever (RMSF) is caused by *Rickettsia rickettsii*, a species of bacteria that is spread to humans by Ixodid ticks. Symptoms include fever, chills, headache, muscle pain, upset stomach, and the development of a rash usually beginning on wrists,

ankles, palms, and soles. Although the disease is highly curable, the clinical outlook of RMSF can become quite severe or even fatal if left untreated. Fatality rates drop markedly when antibiotic treatment is initiated immediately upon suspicion of RMSF and should not be delayed until laboratory confirmation is obtained.

🕷 Rickettsia parkeri

Rickettsia parkeri is a bacterium belonging to the spotted fever group that also includes the bacterium that causes Rocky Mountain Spotted Fever (RMSF). R. parkeri is transmitted by the Gulf Coast Tick *(Amblyomma maculatum)*. Symptoms occur two to ten days after being bitten by an infected tick and may include mild fever, fatigue, rash, and muscle pain that is accompanied by weakness. Although symptoms closely resemble those of RMSF, patients with *Rickettsia parkeri* infection will usually find a sore at the site of the bite. Antibiotics are the preferred treatment.

🕷 Bartonella

Bartonella is a bacteria that can be transmitted either by the bite or scratch of a cat or the bite of a tick, flea, louse or mosquito. There are at least eight Bartonella species known to infect humans with *B. henselae* (cat-scratch fever) and *B. quintana* (trench fever) being the most common. Symptoms associated with Bartonella illness include fever, fatigue, headache, joint and muscle pain, swollen lymph nodes, encephalopathy, visual problems, liver and spleen involvement, abdominal pain, and neurological deficits. The type of antibiotic treatment depends on the strain of Bartonella found in a patient.

Gulf Coast Tick

(Amblvomma maculatum)

🕷 Tularemia

Tularemia or Rabbit fever is caused by the bacterium *Francisella tularensis* found in animals. Transmission of the bacteria can occur through direct contact with an infected animal, by breathing in the bacteria, or from the bite of an infected tick, deerfly, or other insects. Typically, an ulcer develops at the site of the tick bite, and surrounding lymph nodes become enlarged. Other symptoms include fever, headache, chills, vomiting, sweating, dry cough, eye irritation, sore throat, muscle and joint pain, diarrhea, and pneumonia. The disease can be fatal if not treated with the right antibiotics.

🕷 Q Fever

Q Fever is an acute, self-limited systemic illness that can develop into a chronic, debilitating disease. The causative agent of Q Fever is the bacteria *Coxiella burnetii* which can cause pneumonia and hepatitis in the early stage and infection of the heart valves in the late stage of the disease. Animals are the primary reservoirs of the bacteria. Humans contract the disease primarily by inhalation or ingestion of the pathogen and through the bite of an infected tick. Classic symptoms include fever, headache, muscle pain, sweats, vomiting, abdominal pain, and central nervous system complications. Antibiotics are the treatment of choice.