Lone star female, nymph and male (counterclockwise)

Ehrlichiosis and Anaplasmosis

Several diseases can be caused by bacteria called Ehrlichia and Anaplasma. The number of cases of these diseases has been increasing in recent years across the United States and in North Carolina.

THE TICK:
The lone star tick is the species most commonly encountered in the coastal plain and piedmont area of North Carolina, and its range appears to be expanding to the mountain counties as well. This tick is very aggressive and active throughout spring, summer and fall. It is known to transmit ehrlichiosis. Adults and the smaller immature stages readily attack people.

The black-legged tick is known to carry the agent for anaplasmosis.

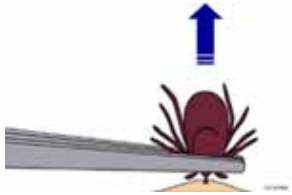
SYMPTOMS:
The symptoms for both ehrlichiosis and anaplasmosis can include fever, headache, muscle pain, vomiting and general discomfort. Illness can be severe.

STARI

Southern tick-associated rash illness, or STARI, causes a rash similar to the one described for Lyme disease. Unlike Lyme disease, this illness is associated with bites from the lone star tick. The rash, which usually appears within seven days of the tick bite, may be accompanied by fatigue, fever, headache, muscle and joint pains. Its cause is still being studied.

Other Tick-Borne Diseases

Ticks can transmit other diseases such as tularemia (rabbit fever) and babesiosis. Tularemia is a bacterial disease that has a sudden onset of fever and chills. Babesiosis is caused by a parasite that infects red blood cells, and causes fever, chills, muscle aches and jaundice.



TICK REMOVAL

Transmission usually does not occur until the tick has been attached and feeding for several hours. Frequent checks for ticks and prompt removal can reduce the chance of infection. Use fine-tipped tweezers to grasp the tick firmly as close to the skin as possible. If tweezers are not available, cover your fingers with a tissue and grasp the tick close to the skin. With a steady motion, pull the tick's body away from your skin slowly. **DO NOT TWIST**, and avoid crushing the tick if possible. Wash the affected area with soap and water. Do not be alarmed if the tick mouthparts remain in your skin. Once the mouthparts are separated from the rest of the tick, it can no longer transmit any disease bacteria. Do not use petroleum jelly, hot matches, nail polish or kerosene to remove a tick.

FOR MORE INFORMATION:
Contact your local health department

See the Public Health Pest Management Web site:
www.deh.enr.state.nc.us/phpm

See the N.C. Division of Public Health Web site
www.epi.state.nc.us/epi/tick

NC. Department of Environment and Natural Resources
Division of Environmental Health
Public Health Pest Management
919-733-6407

TICK-BORNE DISEASES IN NORTH CAROLINA

Tick Facts

Ticks are not insects but are small, eight-legged arthropods more closely related to mites, spiders and scorpions. They are blood-feeding parasites and are commonly found throughout North Carolina. Ticks are usually found in natural areas that have grasses, shrubs or leaf litter—a description that fits most of our beautiful state.

The first step in protecting yourself from tick-borne disease is to know where ticks live, when they are active, how they get on people and pets, and what diseases they may carry.

There are about 80 species of ticks in the United States (approximately 865 species worldwide). There are 21 species in North Carolina but only a few of these are known to bite people. Even when a tick bites, it is important to know that not all tick bites will transmit disease. Tick bites can only transmit disease if the tick is infected with the bacteria and has fed long enough to transmit the bacteria.

Although ticks are most commonly encountered during the warm summer months, ticks can also become active on warm days during the fall and winter. Ticks live in urban and rural environments. If you share your home with pets, they could accidentally bring a hitchhiking tick indoors. Ticks can easily crawl onto people and slip beneath clothing or into a person's hair where they are difficult to see. Most people do not feel the tick and may not notice when it attaches to their skin. Be aware of ticks at all times and in all environments, and check yourself and your children for that uninvited guest! Remove ticks carefully with tweezers, wash your hands and the bite well with soap and water, and apply antibiotic ointment to the site.

If bitten by a tick, it may be helpful to save the specimen for later identification, but identification or testing of the tick is not generally used to decide if antibiotic treatment is needed. Save the tick by placing it in rubbing alcohol or a sealable plastic bag in your freezer and make a note of the date you removed it.

Tick-borne illness can be treated with appropriate antibiotics, and it is important to consult with your doctor if you become ill after being bitten by a tick.

Tick-borne Diseases in North Carolina

Rocky Mountain Spotted Fever

Rocky Mountain spotted fever (RMSF) is caused by a type of bacteria. It is the most commonly reported tick-borne disease in North Carolina. The symptoms described below typically start suddenly, and death can happen if the disease is not treated.

THE TICK:
The American dog tick is the species known to carry RMSF. The female ticks are recognized by the large off-white area in the upper third area of their body. Adults are most active during warm weather in wooded areas and along trails and paths.

SYMPTOMS:
Symptoms of RMSF usually begin three-to-14 days after the tick-bite and may include fever, deep muscle pain, severe headache, chills and upset stomach or vomiting. A skin rash often appears two-to-three days after the onset of illness, starting most often on the ankles and wrists and progressing to other areas of the body.

American dog tick — female and male

Life stages of the black-legged tick shown with the head of a pin.

Lyme Disease

Lyme disease is present in North Carolina and is the leading arthropod-associated disease in the United States. It is an infection caused by spiral-shaped bacteria. The disease can have long-term effects if it is not treated promptly.

THE TICK:
The black-legged tick is the carrier of the bacteria that causes Lyme disease. This tick gets its name from its dark or chocolate-brown legs. The young tick (nymph) is active during late spring and early summer. It normally feeds on small- and medium-sized animals but can feed on people as well. Because of its small size, the nymph can go undetected if you are not vigilant.

Adults of this species are most active during the fall and early spring but can be out on warm days in the winter months. They prefer to feed on deer but will also bite people.

SYMPTOMS:
Initial symptoms may develop three days to several weeks after the tick bite. The first sign of infection may be a circular or oval rash, called erythema migrans (EM) at the site of the bite. However, this rash does not occur in all people who develop Lyme disease. The EM rash can often be mistaken for a localized inflammation caused by a reaction to a tick bite. The EM rash usually does not itch or hurt, so it may go unnoticed. Other early signs of Lyme disease may include headache, fever, muscle and joint aches, and fatigue. If left untreated, the disease may affect the joints, nervous system or heart several weeks, months or years after the tick bite.