

## PREVENTION OF TICK-BORNE DISEASE

Contrary to popular belief, ticks do not jump, fly or fall out of trees. They wait on low growing plants for a host to pass by. When a person or animal brushes against the vegetation, the tick will cling to fur or clothing and crawl upward, looking for a place to attach and begin feeding. The risk of exposure to ticks and disease can be reduced by following these precautions:

### Humans

- Avoid tick-infested areas such as tall grass and dense vegetation.
- Tuck your pants into sock tops or boots.
- Wear light-colored clothing to make it easier to find crawling ticks.
- Use repellants and follow label instructions carefully.
- Check yourself, your children and pets frequently for ticks.
- Bathe or shower after exposure to tick habitat (preferably within two hours) to wash off and more easily find ticks that may be crawling on you.

### Dogs

- Dogs are also at risk for tick-borne diseases and they may carry infected ticks into the home. Infected dogs are not contagious to humans.
- Keep yard and outdoor play areas well mowed to discourage tick infestation.
- Treatments are available to control ticks on dogs. Consult your veterinarian and always follow label instructions.



American dog ticks are often found in overgrown lots and along weedy roadsides, paths and hiking trails.



*Dermacentor variabilis* female (left) and male (right)

## ROCKY MOUNTAIN SPOTTED FEVER

Rocky Mountain spotted fever (RMSF) is caused by bacteria called *Rickettsia rickettsii*. In Ohio, the bacteria are carried primarily by the American dog tick, *Dermacentor variabilis*. Not all ticks are infected and an infected tick is usually attached to the host for four to six hours before it transmits disease. Adult American dog ticks look for large hosts such as dogs, but they will also feed on humans. They are the most commonly encountered ticks in Ohio.

American dog ticks are often found in overgrown lots and along weedy roadsides, paths and hiking trails. While most cases of RMSF occur in the southeastern United States, Ohio reports between one and 33 cases per year. Most cases occur between April and August when tick populations are highest and outdoor activities are more common.

### Symptoms and Treatment

Symptoms of RMSF appear suddenly (typically one week after the bite of an infected tick, but may develop between 2 and 14 days after), and often include high fever, headache and aching muscles. A few days after the onset of illness most, but not all cases develop a pink, non-itchy rash starting on the wrists, forearms and ankles.

It is important to receive the appropriate medical care as soon as possible if RMSF is suspected. The fatality rate is approximately four percent and most deaths occur because there is a delay in seeking medical attention. Blood tests can confirm the presence of the disease, but treatment should begin as soon as possible when symptoms and recent tick exposure suggest RMSF.

## LYME DISEASE

Lyme disease is caused by bacteria called *Borrelia burgdorferi*. In Ohio, the bacteria are transmitted to humans by the deer tick, *Ixodes scapularis*. Not all ticks are infected and an infected tick is usually attached to the host for 36 to 48 hours before it transmits disease. This disease is usually transmitted in the spring and summer by juvenile ticks, which are about the size of a pinhead, and in the fall by adult ticks. Although Lyme disease is found more frequently in Northeastern and upper Midwest states, cases have been reported in Ohio since 1984.

The risk of exposure to black-legged ticks is greater in wooded or brushy areas, and in the edge area between lawns and woods. Because encounters are increasing, it appears this tick is becoming established in Ohio. In addition, field studies have shown evidence of local Lyme disease transmission between these ticks and rodent hosts.

Compared to surrounding states, Lyme disease transmission in Ohio remains low. As the black-legged tick becomes established, the number of cases in Ohio could increase. It is important to take the prevention measures listed in this brochure when venturing into tick habitat and to seek medical attention if you develop symptoms of Lyme disease.



The black-legged tick is more likely to be found in wooded or brushy areas and in the edge area between lawns and woods.



*Ixodes scapularis*, female

## Symptoms and Treatment

Symptoms of Lyme disease may appear between three days to a few weeks after a tick bite. Most, but not all infected people develop a circular, ring-like rash called erythema migrans. Other early symptoms include fever, fatigue, headache and joint pain. Some symptoms of Lyme disease may not appear until weeks, months or years after a tick bite, affecting joints, nervous system and heart. Diagnosis of Lyme disease is based on history of tick exposure, signs and symptoms and is aided by the use of blood tests. Lyme disease responds to appropriate antibiotic therapy. Early detection and treatment will reduce the risk of arthritis and other complications.

## EHRlichiosis AND ANAPLASMOSIS

These related diseases are caused by bacteria which are transmitted by ticks. The two most common of these are human monocytic ehrlichiosis (HME) and human granulocytic ehrlichiosis (HGE, recently renamed anaplasmosis). HME is transmitted by the Lone star tick, *Amblyomma americanum*, and HGE by the black-legged tick, *Ixodes scapularis*.



*Amblyomma americanum*, female

Lone star ticks are common in Southern Ohio where they can be found in shady areas along roads, meadows and woods. Like the black-legged tick, the risk of exposure to these ticks is greater in wooded or brushy areas, and in the edge area between lawns and woods.

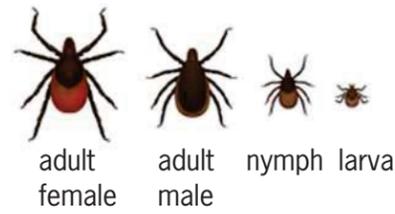
### Symptoms and Treatment

Symptoms of both diseases are similar and may appear up to 10 days after a tick bite, and can include mild to severe fever, headache, muscle pain, vomiting and general discomfort. Diagnosis is aided by the use of blood tests. Both HME and HGE respond to certain antibiotics and treatment should be based on symptoms and history of tick exposure.

## OTHER DISEASES

The list of tick-borne diseases is long and new ones are frequently discovered. Tularemia, Q fever, bartonellosis, southern tick-associated rash illness (STARI), babesiosis and tickborne relapsing fever (TBRF) are less common, but they do occur.

1 inch



Blacklegged Tick  
(*Ixodes scapularis*)



Lone Star Tick  
(*Amblyomma americanum*)



Dog Tick  
(*Dermacentor variabilis*)



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#### IF YOU DEVELOP SYMPTOMS FOLLOWING TICK CONTACT, SEE YOUR PHYSICIAN

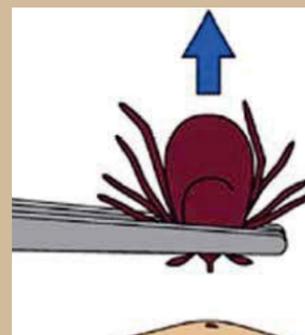
Ticks must bite and remain attached for hours in order to transmit diseases. Prompt removal of an attached tick will significantly reduce the risk of infection. If you develop symptoms of tick-borne disease, including fever, flu like illness or a rash within a few weeks of a tick bite, be sure to tell your doctor about your tick exposure. It is recommended to record the date of any tick bites in case symptoms occur later.

For more information, contact your local city or county health department. Contact information for all Ohio health departments can be found on line at the odhgateway link below.

More information about ticks and tick-borne diseases can be found on the Ohio Department of Health Web site below.

#### TICK REMOVAL

- If a tick is attached, remove it as soon as possible to reduce your risk of infection.
- Shield fingers with a paper towel or use tweezers. Grasp the tick close to the skin. With steady pressure, pull the tick straight up and out.
- Avoid crushing the tick.
- Do not use a hot match, cigarette, nail polish, petroleum jelly or other products to remove a tick.
- After removing a tick, thoroughly disinfect the bite site and wash hands with soap and water.



<https://odhgateway.odh.ohio.gov/LHDdirectory/NetMgr/ODHList.aspx>  
<http://www.odh.ohio.gov/odhPrograms/dis/zoonoses/vbdp/vbtick.aspx>



Ohio Department of Health



Lone star ticks are common in southern Ohio where they can be found in shady areas along roads, meadows and woods.



## Tick-Borne Diseases

Rocky Mountain Spotted Fever  
Lyme Disease  
Ehrlichiosis