

### BACKGROUND

Ehrlichiosis refers to an infectious disease transmitted by ticks which may be caused by several similar but distinct pathogens, primarily *Ehrlichia chaffeensis* or *Ehrlichia ewingii*, which survive and reproduce in white blood cells. Ticks acquire the organism when feeding on white-tailed deer.

### WHO DOES THE ISSUE IMPACT?

Persons who participate in recreational activities away from home, such as hiking, camping, fishing and hunting in tick habitat, and persons who have outdoor occupations, such as landscaping, brush clearing, forestry, and wildlife and parks management in endemic areas may also be at risk of getting Ehrlichiosis.

### COMPLICATIONS

If antibiotic treatment is delayed, ehrlichiosis can sometimes cause severe illness. Early treatment can reduce your risk of developing severe illness. Signs and symptoms of severe illness can include damage to the brain or nervous system, respiratory failure, uncontrolled bleeding, organ failure and death.

### SIGNS AND SYMPTOMS

The symptoms are generally nonspecific and can range from very mild to very severe illness. Symptoms may include fever, headache, muscle ache, fatigue, nausea, vomiting, diarrhea, confusion, and conjunctivitis. Rash occurs in up to 60 percent of children but is less common (<30 percent) in adults. Older or immunocompromised individuals are likely to suffer a more serious illness.

### CAUSES AND TRANSMISSION

Ehrlichiosis is passed to humans through the bite of a lone star tick (*Amblyomma americanum*) that is infected with one or more of the bacteria that cause ehrlichiosis. Lone star ticks are not commonly found in Pennsylvania, although studies indicate populations may be increasing. Ehrlichiosis occurs most frequently in southeastern and south-central states from April to September.

Transmission of ehrlichiosis from an infected lone star tick occurs after it has been attached and feeding; however, tick bites are typically painless and many persons with ehrlichiosis do not recall a tick bite. In rare circumstances transmission can occur through the transfusion of contaminated blood.

### TESTS AND DIAGNOSIS

Diagnosis is based on clinical signs and symptoms and can be confirmed using specialized laboratory tests.

### TREATMENTS

Ehrlichiosis is usually treated with the antibiotic doxycycline. As confirmatory laboratory tests can take significant time to complete, treatment should not be withheld while awaiting results.

### WHAT CAN YOU DO?

To prevent ehrlichiosis:

- The risk of being bitten by an infected tick can be decreased by using the following precautions:
  - Use insect repellent containing low concentrations (10 to 30 percent) of diethyltoluamide (DEET) on clothing and exposed skin;

- Apply DEET sparingly on exposed skin. Do not apply to the face. Do not use under clothing.
- Do not use DEET on the hands of young children. Avoid applying to areas around the eyes and mouth.
- Do not use DEET over cuts, wounds or irritated skin. Wash treated skin with soap and water after returning indoors, and wash treated clothing.
- Avoid spraying in enclosed areas. Do not use DEET near food.
- Avoid tick-infested areas;
- Wear light colored clothing so ticks can be spotted more easily;
- Tuck pant legs into socks or boots, and shirts into pants;
- Tape the areas where pants and socks meet;
- Wear a hat, long sleeved shirt, and long pants for added protection;
- Walk in the center of trails to avoid overhanging brush; and
- Check yourself, family members and pets for ticks after leaving potentially tick infested areas and promptly remove any ticks detected.

If you find a tick:

- If you find a tick attached to your skin, there is no need to panic. There are several tick removal devices on the market, but a plain set of fine-tipped tweezers will remove a tick quite effectively. Prompt and proper tick removal is very important for preventing possible disease transmission.
  - Use fine-tipped tweezers and protect your fingers with a tissue, paper towel, or latex gloves. Avoid removing ticks with your bare hands.
  - Grasp the tick as close to the skin surface as possible and pull upward with steady, even pressure. Don't twist or jerk the tick; this can cause the mouth-parts to break off and remain in the skin. If this happens, remove the mouth-parts with tweezers. If you are unable to remove the mouth easily with clean tweezers, leave it alone and let the skin heal.
  - After removing the tick, thoroughly disinfect the bite and your hands with rubbing alcohol, an iodine scrub, or soap and water.
  - Avoid folklore remedies such as "painting" the tick with nail polish or petroleum jelly or using heat to make the tick detach from the skin. Your goal is to remove the tick as quickly as possible; do not wait for it to detach.

If you suspect that you or a family member might have ehrlichiosis:

- See your healthcare provider if you become ill after having been bitten by a tick or having spent time outdoors participating in activities that may result in tick bites like hiking, camping, yard work, gardening, fishing, hunting, dog walking, etc.

## RESOURCES FOR MORE INFORMATION

CDC ehrlichiosis website: <https://www.cdc.gov/ehrlichiosis/index.html>

*This fact sheet provides general information. Please contact your physician for specific clinical information.*

**If you have any questions, contact us at 1-877-PA-HEALTH.**