



## Ehrlichiosis

(*Ehrlichia chaffeensis*, *ewingii*, *muris-like*)

### What is ehrlichiosis?

Ehrlichiosis is an infection caused by three different bacteria. *Ehrlichia chaffeensis* and *Ehrlichia ewingii* are transmitted by the Lone star tick (*Amblyomma americanum*), which is not native to North Dakota. *Ehrlichia muris-like* infections have been identified in a small number of patients residing in or traveling to Minnesota and Wisconsin, where the deer tick (*Ixodes scapularis*) has been identified as the possible vector.

### Who is at risk for ehrlichiosis?

Anyone can get ehrlichiosis. People who spend time outdoors in tick-infested areas are at an increased risk of becoming infected. Human infections occur most often between April and September with a peak of cases usually seen in the months of June and July. Most cases of *E. chaffeensis* and *E. ewingii* have been reported from southeastern and south central United States but some have been reported from Midwestern states. *E. muris-like* cases have only been seen in individuals residing in or traveling to Minnesota and Wisconsin.

### What are the symptoms of ehrlichiosis?

Common symptoms include fever, headache, chills, weakness, muscle pain, and nausea. Other symptoms can include joint pain, vomiting, diarrhea, cough and confusion. *E. chaffeensis* can cause a rash on the body in children, which is not as likely to occur in adults. These symptoms usually last from one to two weeks with the rash developing one week after the illness begins. If left untreated, severe symptoms can occur such as difficulty breathing, encephalopathy, meningitis, bleeding disorders and renal failure.

### How soon do symptoms appear?

Symptoms can begin to appear five to 10 days after a tick bite.

### How is ehrlichiosis spread?

The disease is transmitted to people by the bite of an infected tick. The ticks that transmit the disease become infected when the tick feeds on infected white-tailed deer, dogs, or rodents. When that tick feeds again, the infection can be transmitted to the tick's new host. The tick must be attached to a person's skin, usually for several hours, before it can transmit the disease. The bite of the tick is usually painless.

### When and for how long is a person able to spread the disease?

This disease is not spread directly from person to person, except by blood transfusion.

### How is a person diagnosed?

Ehrlichiosis can be diagnosed based on symptoms, exposure to infected ticks and laboratory results from blood tests. Diagnosis is made after consulting with a health-care professional.

### What is the treatment?

The disease is treated with antibiotics taken orally or by injection.

## **Does past infection make a person immune?**

No data is available to indicate protective immunity after infection. Therefore re-infection can occur although it is rare.

## **Should children or others be excluded from day care, school, work or other activities if they have ehrlichiosis?**

No, unless the child is too ill to participate. (This disease is not spread directly from person to person.)

## **What can be done to prevent the spread of ehrlichiosis?**

If you are in areas where ticks may be present, the following precautions can reduce the risk of acquiring ehrlichiosis:

- If a tick-infested area cannot be avoided, wear a long-sleeved shirt, long pants and high socks with pant cuffs tucked into the socks. Light colored clothing will make ticks easier to find. Walk in the center of mowed trails to avoid brushing up against weeds, grasses or bushes.
- Conduct thorough "tick checks" on yourself and your children after spending time outdoors. Prompt removal of ticks, even after they have attached, can reduce the chance of Ehrlichiosis transmission.
- Insect repellents containing 20 percent or more DEET have been shown to be effective in repelling ticks. Use products that contain permethrin on clothing and gear. If such products are used, be sure to follow the manufacturer's directions on the label.
- Making sure pets are free of ticks will also reduce the amount of tick exposure.

To remove an attached tick, grasp with tweezers or forceps as close as possible to attachment (skin) site, and pull upward and out with a firm and steady pressure. If tweezers are not available, use fingers shielded with tissue paper or rubber gloves. Do not handle with bare hands. Be careful not to squeeze, crush or puncture the body of the tick, because it may contain infectious fluids. After removing the tick, thoroughly disinfect the bite site and wash hands. See or call a health-care professional if there is a concern about incomplete tick removal. It is important that a tick be removed as soon as it is discovered.

### **Additional Information:**

For more information, call the North Dakota Department of Health at 800.472.2180 or visit [www.ndhealth.gov/disease/Tickborne](http://www.ndhealth.gov/disease/Tickborne).

**This disease is a reportable condition. As mandated by North Dakota law, any incidence of this disease shall be reported to the North Dakota Department of Health.**

Resource: American Academy of Pediatrics. [Ehrlichia and Anaplasma Infections]. In: Pickering LK, Baker CJ, Kimberlin DW, Long SS, eds. *Red Book: 2012 Report of the Committee on Infectious Diseases*. 29<sup>th</sup> ed. Elk Grove Village, IL: American Academy of Pediatrics; 2012:[312-315]

