

# New York State Department of Health

## Ehrlichiosis: Human Monocytic Ehrlichiosis, Human Granulocytic Anaplasmosis

Updated: September 2008

### What is ehrlichiosis?

Ehrlichiosis is a tick-borne disease which can be caused by either of two different organisms. Human monocytic ehrlichiosis (HME) is caused by *Ehrlichia chaffeensis*, which is transmitted by the lone star tick (*Amblyomma americanum*). Human granulocytic anaplasmosis (HGA), previously known as human granulocytic ehrlichiosis (HGE), is caused by *Anaplasma phagocytophilia*, which is transmitted by the deer tick (*Ixodes scapularis*). In New York State, most cases of ehrlichiosis have been reported on Long Island and in the Hudson Valley.

### Who gets ehrlichiosis?

Anyone can get ehrlichiosis, although the majority of known cases have been in adults. People who spend time outdoors in tick-infested areas from April until October are at greatest risk for exposure.

### How is ehrlichiosis transmitted?

Ehrlichiosis is transmitted by the bite of infected ticks, including the deer tick and the lone star tick. Ehrlichiosis cannot be spread from person to person.

### What are the symptoms of ehrlichiosis?

The symptoms of HME and HGE are the same and usually include fever, muscle aches, weakness and headache. Patients may also experience confusion, nausea, vomiting and joint pain. Unlike Lyme disease or Rocky Mountain spotted fever, a rash is not common. Infection usually produces mild to moderately severe illness, with high fever and headache, but may occasionally be life-threatening or even fatal.

### When do symptoms appear?

Symptoms appear one to three weeks after the bite of an infected tick. However, not every exposure results in infection.

### What is the treatment for ehrlichiosis?

Tetracycline antibiotics are usually rapidly effective for ehrlichiosis. Because these antibiotics can cause dental staining in children, physicians should consult an infectious disease expert when treating children.

### What can be done to prevent ehrlichiosis?

When in tick-infested habitat - wooded and grassy areas - take special precautions to prevent tick bites, such as wearing light-colored clothing (for easy tick discovery) and tucking pants into socks and shirt into pants. Check after every two to three hours of outdoor activity for ticks on clothing or skin. Brush off any ticks on clothing before skin attachment occurs. A thorough check of body surfaces for attached ticks should be done at the end of the day. If removal of attached ticks occurs within 36 hours, the risk of tick-borne infection is minimal.

Repellents can be effective at reducing bites from ticks that can transmit disease. But their use is not without risk of health effects, especially if repellents are applied in large amounts or improperly. Repellents commonly available to consumers contain the active ingredients DEET (N, N-diethyl-m-toluamide), picaridin (also known as KBR 3023), oil of lemon eucalyptus, permethrin, or botanical oils. DEET products have been widely used for

many years, but have occasionally been associated with health effects. Skin reactions (particularly at DEET concentrations of 50 percent and above) and eye irritation are the most frequently reported health problems. Picaridin and oil of lemon eucalyptus have been shown to offer long-lasting protection against mosquitoes but there are limited data regarding their ability to repel ticks. Products containing permethrin are for use on clothing only, not on skin. Rather than acting as a repellent, permethrin kills ticks and insects that come in contact with treated clothes. Permethrin can cause eye irritation. Insect repellents containing botanical oils, such as oil of geranium, cedar, lemongrass, soy or citronella are also available, but there is limited information on their effectiveness and toxicity. If you decide to use a repellent, use only what and how much you need for your situation. In addition:

- Be sure to follow label directions.
- Use repellents only in small amounts, avoiding unnecessary repeat application. Try to reduce the use of repellents by dressing in long sleeves and pants tucked into socks or boots.
- Children may be at greater risk for reactions to repellents, in part, because their exposure may be greater. Do not apply repellents directly to children. Apply to your own hands and then put it on the child.
- Do not apply near eyes, nose or mouth and use sparingly around ears. Do not apply to the hands of small children.
- After returning indoors, wash treated skin with soap and water.

## How should a tick be removed?

Grasp the mouthparts with tweezers as close as possible to the attachment (skin) site. Be careful not to squeeze, crush or puncture the body of the tick, which may contain infectious fluids. After removing the tick, thoroughly disinfect the bite site and wash hands. See or call a doctor if there are concerns about incomplete tick removal. Do not attempt to remove ticks by using petroleum jelly, lit cigarettes or other home remedies because these may actually increase the chance of contracting a tick-borne disease.

## How do I obtain information on a tick?

Tick identification services are available through the New York State Department of Health and some local health departments. The New York State Department of Health [Tick Identification Service](#) will tell you the species of the tick, whether it is engorged with blood and, if so, how long it may have been feeding. The Tick Identification Service will also report whether the mouthparts are present (if not, they may have remained in the skin and need to be removed, as you would a splinter). The Tick Identification Service will not tell you whether the tick is infected with disease-causing organisms. There is no charge for this service.

If you wish to have a tick identified, place it in a small jar containing rubbing alcohol, seal the container to prevent leakage and complete the [Tick Identification Submittal Form](#) . Mail the tick in the sealed container, along with the completed submittal form, to the New York State Health Department's Tick Identification Service, c/o HVCC Central Receiving, 80 Vandenberg Avenue, Troy, NY 12180. Once you send a tick to be identified it will not be returned.

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