

# Ehrlichiosis

## What is ehrlichiosis?

Ehrlichiosis is one of many tickborne diseases in the United States. At least three different bacterial species can cause ehrlichiosis in humans in the United States: *Ehrlichia chaffeensis*, *Ehrlichia ewingii*, and *Ehrlichia muris* subspecies *eaucloirensis*. Human illness due to *E. chaffeensis* and *E. ewingii* are most commonly reported from the southeastern and south-central United States, where the lone star tick is found.

In Minnesota, low numbers of cases with human illness due to *E. muris eaucloirensis* are reported each year. This species was first identified in 2009 and all patients described to date have reported likely blacklegged tick exposure in Minnesota or Wisconsin. In addition, a small number of human illnesses due to *E. chaffeensis* are reported each year in Minnesota, some of which have traveled to southern states where the disease is more common.

## How do people get ehrlichiosis?

People can get *E. muris eaucloirensis* most likely through the bite of a blacklegged tick (deer tick) that is infected with *E. muris eaucloirensis* bacteria. Not all blacklegged ticks carry these bacteria and not all people bitten by a blacklegged tick will get sick. A tick needs to be attached to a person for a certain length of time before it can spread disease. This time interval is not known for *E. muris eaucloirensis* but may be approximately 12-24 hours if it behaves similarly to anaplasmosis, a closely related bacterial illness.

Blacklegged ticks live on the ground in areas that are wooded or have lots of brush. The ticks search for hosts at or near ground level and grab onto a person or animal as they walk by. Ticks do not jump, fly, or fall from trees.

In Minnesota, the months of April through July and September through October are the greatest risk for being bitten by a blacklegged tick. Risk peaks in June or July every year. Blacklegged ticks are small; adults are about the size of a sesame seed and nymphs (young ticks) are about the size of a poppy seed. Due to their small size, a person may not know they have been bitten by a tick.

## What are the symptoms of ehrlichiosis?

While people of any age can get ehrlichiosis, symptoms may be most severe in older individuals and those with weakened immune systems. Signs and symptoms may include:

- **Fever**
- **Headache**
- **Muscle aches**
- **Low number of platelets in the blood**

Serious illness and complications may occur if the infection is not treated correctly.

## How is ehrlichiosis diagnosed?

If a person suspects ehrlichiosis, they should contact a doctor as soon as possible for diagnosis and treatment. The diagnosis of ehrlichiosis is based on a history of

exposure to tick habitat, a physical examination, and laboratory tests to confirm the diagnosis.

## How is ehrlichiosis treated?

Ehrlichiosis is treated with antibiotics. Treatment should not be delayed if ehrlichiosis is suspected. It may be possible to get ehrlichiosis more than once so continue to protect yourself from tick bites and contact your doctor if you suspect you may have symptoms of ehrlichiosis.

## How can I reduce my risk?

There is currently no human vaccine available for ehrlichiosis. Reducing exposure to ticks is the best defense against tickborne diseases.

### Protect yourself from tick bites:

- Know where ticks live and when they are active.
  - Blacklegged ticks live in wooded or brushy areas.
  - In Minnesota, blacklegged tick activity is greatest from April – July and September – October.
- Use a safe and effective tick repellent if you spend time in or near areas where ticks live. Follow the product label and reapply as directed.
  - Use **DEET**-based repellents (up to 30%) on skin or clothing. Do not use DEET on infants under two months of age.
  - Pre-treat clothing and gear with **permethrin**-based repellents to protect against tick bites for at least two weeks without reapplication. Do not apply permethrin to your skin.
- Wear light-colored clothing to help you spot ticks more easily. Wear long-

sleeved shirts and pants to cover exposed skin.

- Tumble dry clothing and gear on high heat for at least 60 minutes after spending time in areas where ticks live.
- Talk with your veterinarian about safe and effective products you can use to protect your pet.

### Check for ticks at least once a day after spending time in areas where ticks live:

- Inspect your entire body closely with a mirror, especially hard-to-see areas such as the groin and armpits.
- Remove ticks as soon as you find one.
- Use tweezers or your fingers to grasp the tick close to its mouth. Pull the tick outward slowly and gently. Clean the area with soap and water.
- Examine your gear and pets for ticks.

### Manage areas where ticks live:

- Mow lawns and trails frequently.
- Remove leaves and brush.
- Create a barrier of wood chips or rocks between mowed lawns and woods.

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