

Anaplasmosis



What is anaplasmosis?

Anaplasmosis is an illness caused by bacteria that's spread by ticks. The bacteria are called *Anaplasma phagocytophilum*. The illness causes fever, muscle aches, and other symptoms. It's an uncommon illness that can affect people of all ages. It happens most often in the spring and summer months. This is when people have a higher risk of contact with infected ticks.

Ticks are a kind of parasite. They're related to spiders and scorpions. They feed by attaching to an animal and sucking its blood. This makes it easy for ticks to spread disease.

What causes anaplasmosis?

Anaplasmosis is part of a group of diseases that spread through tick bites. Other diseases that spread through tick bites include Lyme disease, babesiosis, and ehrlichiosis. The bacteria that cause anaplasmosis commonly infect the white-footed mouse, deer, and other animals in the wild. When a tick bites one of these animals, the tick becomes infected. An infected tick can spread the bacteria to humans. When a tick bites a person, the bacteria go into the person's bloodstream. Generally the tick must stay attached for 24 to 48 hours and become enlarged (engorged) to transmit the infection.

Anaplasmosis is not contagious from person-to-person. You can't get it from spending time with someone who has it. In rare cases, you may get it through a blood donation or solid organ transplant.

Who is at risk for anaplasmosis?

Certain types of ticks can become infected with the bacteria that cause anaplasmosis. These include the deer tick and the Western black-legged tick. You may have a higher risk for anaplasmosis if you spend a lot of time outdoors in woody, bushy areas where these ticks are found. You may also have an increased risk if you live in an area of the country where deer ticks or western black-legged ticks are common. In the U.S., deer ticks are most common in New England, the Mid-Atlantic states, and in the north-central region. But they have also spread to many other areas.

What are the symptoms of anaplasmosis?

Symptoms range from mild to life-threatening, and may include:

- Fever and chills
- Severe headache
- Muscle aches
- Nausea and vomiting
- Cough
- Extreme tiredness (fatigue)
- Rash (less common)
- Confusion

You may only have some of these symptoms. They may begin within 1 to 2 weeks of the tick bite. Some people can be infected and have no symptoms. Older adults and people with weak immune systems are more likely to have severe symptoms.

How is anaplasmosis diagnosed?

Your healthcare provider will perform a physical exam, and ask about your health history and your symptoms. Tell him or her if you know you had a recent tick bite or any outdoor exposure in areas of the country where these ticks are common.

Your healthcare provider will need results from certain tests to diagnose the condition. These may include the following blood tests:

- **Exam of your white blood cells under a microscope.** The bacteria can often be seen inside these white blood cells.
- **Polymerase chain reaction (PCR).** This is a newer method to multiply pieces of the bacteria and detect them chemically. It is more sensitive than looking through a microscope but is not yet widely available.
- **Antibody test.** This often does not become positive until many days or a few weeks after the infection. It is usually not helpful while you are first sick.

Anaplasmosis is often hard to diagnose. You may have only very mild symptoms that could be caused by many other diseases. Some people with this disease may not know that a tick bit them. You may be referred to an infectious disease specialist for diagnosis.

How is anaplasmosis treated?

Treatment should be started immediately whenever anaplasmosis is suspected. In some cases, treatment is started based on clinical symptoms before the diagnosis is confirmed by lab testing. This is done to help prevent severe complications.

Antibiotic medicine is the main treatment. Doxycycline is an antibiotic that is given most often to work against the bacteria. If you have early treatment and have only mild symptoms, you can probably take your antibiotic at home. Your fever will likely go away in a few days. Your other symptoms may not go away for a few weeks. Once gone, these symptoms don't come back.

If you have severe illness, your recovery may take longer. You may need to receive antibiotics through an IV (intravenous) line at the hospital. Some people with severe anaplasmosis may need supportive care in an intensive care unit.

What are possible complications of anaplasmosis?

In rare cases, anaplasmosis can cause serious complications such as:

- Brain problems such as confusion, seizures, or coma
- Excess bleeding (hemorrhage)
- Heart failure
- Breathing (respiratory) failure
- Kidney failure
- Septic shock

These complications are rare in the vast majority of otherwise healthy people. But they are more common in those who have weak immune systems. This includes people who have HIV/AIDS, cancer, or organ transplants. They may need additional treatments, such as fluids, breathing support, or kidney dialysis. In a small number of people, these complications can lead to death.

What can I do to prevent anaplasmosis?

To help prevent anaplasmosis:

- Stay out of wooded and bushy areas with high grass and leaf litter. Walk in the center of trails instead.
- Wear light-colored long pants and long-sleeved shirts, and enclosed shoes. Tuck your pants into your

socks while out hiking.

- Use Environmental Protection Agency (EPA) registered repellent when you're outdoors. These include DEET, picardin, IR3535, Oil of Lemon Eucalyptus, para-menthane-diol (PMD), or 2-undecanone. If you spray your clothing, there's no need to spray repellent on the skin under your clothing.
- Do a full-body check for ticks after coming in from the outdoors.
- Bathe or shower within 2 hours after coming indoors, so you can wash off and more easily find and remove any ticks.
- Examine gear and pets for ticks.
- Tumble clothes in a dryer on high heat for at least 10 minutes to kill any remaining ticks.

If you do find a tick attached to your skin, remove it as soon as possible. Follow these steps:

- Use a pair of tweezers to grasp the tick directly by the head or mouth parts. Don't grab the tick by its body.
- Remove the tick by pulling it out firmly and directly outward without twisting or turning.
- Kill the tick by placing it in alcohol, a sealed bag, or flushing it down the toilet.
- Clean the bite wound with a disinfectant.

Take a photo of the tick. This can help identify the type of tick if you have symptoms.

When should I call the healthcare provider?

Healthcare providers don't advise preventive treatment with antibiotics, so you don't need to call if you find a tick on your body. Most ticks don't carry the bacteria that cause the disease. But if you have possible symptoms of anaplasmosis within 2 weeks after a tick bite, call your healthcare provider or seek medical care right away.

Key points about anaplasmosis

- Anaplasmosis is a type of bacterial infection spread through tick bites.
- You have a higher risk in the spring and summer in certain parts of the country.
- You may have no symptoms, mild symptoms, or severe symptoms. Some possible complications can be life-threatening.
- Antibiotics are the main treatment. Severe symptoms are rare if treatment begins right away.
- Most ticks don't carry the bacteria that cause anaplasmosis. You have a lower risk of infection if you remove an infected tick within 24 hours.

Next steps

Tips to help you get the most from a visit to your healthcare provider:

- Know the reason for your visit and what you want to happen.
- Before your visit, write down questions you want answered.
- Bring someone with you to help you ask questions and remember what your provider tells you.
- At the visit, write down the name of a new diagnosis, and any new medicines, treatments, or tests. Also write down any new instructions your provider gives you.
- Know why a new medicine or treatment is prescribed, and how it will help you. Also know what the side effects are.

- Ask if your condition can be treated in other ways.
- Know why a test or procedure is recommended and what the results could mean.
- Know what to expect if you do not take the medicine or have the test or procedure.
- If you have a follow-up appointment, write down the date, time, and purpose for that visit.
- Know how you can contact your provider if you have questions.

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