

Anaplasmosis in North Carolina

This fact sheet provides information about the occurrence of the tick-borne disease anaplasmosis in North Carolina. Formerly called “human granulocytic ehrlichiosis (HGE),” anaplasmosis is caused by infection with the bacteria *Anaplasma phagocytophilum*. Symptoms usually occur within one or two weeks of a tick bite and can include fever, headache, chills and muscle aches. The disease can cause more severe symptoms and can even be fatal. However, death from anaplasmosis is uncommon, with a current fatality rate of less than 1 percent. Anaplasmosis can be treated with antibiotics such as doxycycline.

During 2012, North Carolina reported 21 probable cases of anaplasmosis distributed among 16 counties. For the five-year period from 2008 to 2012, the state reported 77 cases in 38 counties. Human cases have been diagnosed year-round, with most cases occurring April through June.

The **blacklegged tick** (*Ixodes scapularis*) is believed to be the primary vector (carrier) for anaplasmosis in North Carolina. Blacklegged ticks have been found statewide but are more plentiful in the eastern counties.



Figure 1: Black legged ticks from left to right, male, nymph and female, compared to a dime and to 12-point newspaper type.

These ticks are commonly referred to as the ‘deer tick’ in other states because adults are frequently found feeding on deer during hunting season. The name is misleading in North Carolina, where blacklegged ticks are just one of many species of ticks that feed on deer. Encouraging deer and other wildlife in your yard is also an invitation to a variety of ticks.

The lifecycle of blacklegged ticks generally lasts two years. During this time, they go through four life stages: egg, six-legged larva, eight-legged nymph, and adult. After the eggs hatch, the ticks must have a blood meal at every stage to survive.

In North Carolina, adult blacklegged ticks are active on warmer days during the winter months, October through April. Adult ticks are slow-moving and prefer large mammals as hosts, such as deer. The adults

usually mate on deer, and the females fill with blood before dropping off to lay their eggs. Each female can lay upwards of 1,000 eggs, that will usually hatch in the spring. Nymphs, in contrast, are active during the summer months and are the most likely to transmit disease. The nymphs’ small size and generally painless bite make prevention and detection especially important.

Simple precautions can help protect people from tick bites and from tick-borne illnesses like anaplasmosis. When in areas that may have blacklegged ticks, it is best to wear long pants, long-sleeve shirts, tuck pant legs into socks and tuck shirttails into pants. Using tick repellents can add an additional layer of protection. Thorough tick checks are especially important and should be done before and after showering. Pay particular attention to the scalp, back and groin, using a mirror to check areas you cannot easily see. Prompt detection and removal of ticks can help prevent disease from anaplasmosis and other tick-borne illnesses.

Blacklegged ticks are also associated with Lyme disease and babesiosis, two other potentially serious human diseases.

For general information on anaplasmosis and preventing tick-borne illnesses, including a factsheet, “Making Sense of Repellents,” see the N.C. DHHS Communicable Diseases website at <http://epi.publichealth.nc.gov/cd/diseases/anaplasmosis.html>. For more detailed information, including diagnosis and treatment, please see the CDC’s web site at www.cdc.gov/anaplasmosis.

Photo by Marcée Tolliver, 2013.