



Ticks and Tick-borne Diseases

The following information will help you avoid tick-related problems as you live, work, or play in or around the grassy or wooded habitats where ticks are found.

IDENTIFICATION

Unlike insects, adult ticks have eight legs, relating them more closely with spiders and scorpions. The tick's body is also fused into a single region instead of having the head, thoracic, and abdominal regions typical of insects.



(*Ixodes dammini*), reported to be the same species as the black-legged tick (*Ixodes scapularis*): the western black-legged tick (*Ixodes pacificus*) and the Rocky Mountain wood tick (*Dermacentor andersoni*) in the West; the blacklegged tick in the South; and the American dog tick (*Dermacentor variabilis*) and the Lone Star tick (*Amblyomma americanum*), which are found throughout much of the United States.

LYME DISEASE

The causative agent of Lyme disease is the spirochete bacteria *Borrelia burgdorferi*.

Frequency

Lyme disease has become the most common tick-borne disease in the United States. Cases have been reported in 48 states, with the greatest number of cases occurring every year in the northeastern states of Connecticut, Rhode Island, Massachusetts, New York, and New Jersey; in the upper Midwest states of Wisconsin and Minnesota; and in the western states of California and Oregon. The disease is spreading rapidly, however, with an increasing number of diagnosed cases in the southeastern and southern states.

Symptoms

The most apparent and common symptom of Lyme disease, occurring in 50 to 65 percent of the cases, is a rash around the site of the tick bite. The rash appears within 3 days to 3 weeks after the bite and expands in a ring or bull's eye pattern, with the center area clear.

There are two distinguishable families of ticks: (1) the hard ticks, which have hard smooth skin and an apparent head; and (2) the soft ticks with tough, leathery, pitted skin and no distinct head. The hard ticks are the ticks we most commonly find in the woodlands and on our pets. Soft ticks are generally less often observed and are found in caves and on birds. It is the hard ticks we associate with most of our common tick-borne diseases in the United States.

For assistance in identifying ticks contact the local personnel in the pest control shop, Preventive Medicine Service, Health Clinic or the Entomological Sciences Division, USACHPPM-South.

GEOGRAPHIC LOCATION

Keep in mind that not all ticks carry a tick-borne disease, so a tick bite does not necessarily mean that disease will follow. However, there are several ticks that are potential vectors of tickborne diseases. In the Northeast and Midwest is the deer tick

- ◆ Identification
- ◆ Geographic Location
- ◆ Tick-borne Disease
- ◆ Care of Tick Bites

Entomological Sciences Division

U.S. Army Center for Health Promotion and Preventive Medicine – South, Ft. McPherson, GA 30330-5000
DSN 572-2564 or Commercial 404-752-2564

Other complaints include flu-like symptoms, such as fever, chills, headache, and extreme fatigue.

Although Lyme disease rarely causes death, the disease can cause a great deal of Pain and discomfort if allowed to progress to later stages. If you have been in an area where ticks are found and you develop any of the symptoms mentioned above, especially during the period from May through early Fall, see a physician for evaluation immediately.

ROCKY MOUNTAIN SPOTTED FEVER

The causative agent of Rocky Mountain spotted fever (RMSF) is the rickettsial organism, *Rickettsia rickettsia*.

Frequency

RMSF was originally found in the Rocky Mountains, but is now much more abundant in the Southeast and South-central United States. Oklahoma, North and South Carolina, Virginia, West Virginia, Georgia, and Tennessee often lead the nation in the number of reported cases of this disease.

Symptoms

Usually the first symptoms of RMSF appear 3 to 14 days after the tick bite and include sudden fever, chills, muscle aches, bloodshot eyes, and headaches. There may also be nervous symptoms, such as sleeplessness, restlessness, and delirium. In about 50 percent of the patients, a characteristic spotty rash occurs on the feet and hands within 2 to 3 days of the fever. The rash may move to the rest of the body, but does not start on the trunk of the body like the rashes caused by measles and some other diseases. Although this disease can be effectively controlled with antibiotics following prompt treatment, fatalities do occur.

HUMAN EHRLICHIOSIS

Human ehrlichiosis is caused by the rickettsial organism *Ehrlichia chaffeensis*

Frequency

Human ehrlichiosis was first reported from Arkansas in 1986. It has been found in at least 11 other southern states.

Symptoms

Symptoms of Human ehrlichiosis can be very mild to severe, requiring hospitalization, and include fever, chills, headache, aches and pains in the joints and muscles, loss of appetite, eye pain, nausea, and vomiting. There is usually no rash.

PREVENTION

Wear clothing properly.

To greatly reduce your chance of tick bite, follow the DOD Repellent System of wearing proper clothing. Blouse or tuck your uniform legs into your boots and wear your sleeves down. Civilian should tuck their pant legs into their socks, and their shirt into their pants. Light colored clothing makes it easier to spot ticks.

In addition, when in the field, "buddy up" and routinely check for ticks every few hours or as frequently as possible. After returning, remove your clothing and check your body carefully. Pay special attention to hairy or warm, moist parts of the body.

Use repellents.

The DOD Repellent System also recommends applying deet repellent, NSN 6840-01-284-3982, to any exposed skin surfaces, and permethrin repellent spray, NSN 6840-01-278-1336, to your uniform or field clothing. Never use *permethrin on your skin*. The permethrin repellent is best applied to clothing prior to wearing. Allow the repellent to dry before using the treated clothing.

ONCE BITTEN

If you find a tick embedded in your skin, do not squash or bum it. Use tweezers to grasp the tick's mouthparts as close to the skin as possible, and pull it straight outward. Pull slowly, firmly, and steadily. Because the tick's central mouthpart is long and covered with barbs, it can be difficult to remove. Be patient. The prompt and careful removal of attached ticks greatly lessens the possibility of obtaining a tickborne disease.

Wash the bite site and apply an antiseptic. Save the tick in alcohol or freeze it in a pill vial or plastic bag in case symptoms appear and identification of the tick becomes necessary. If symptoms do appear, seek medical attention immediately.