

Tick Talk About Lyme Disease

Prepared by E.P. Catts, Entomology Extension Specialist
WSU Puyallup

What is Lyme Disease?

In severe cases, Lyme Disease is a serious affliction involving nervous and circulatory impairment and symptoms akin to rheumatoid arthritis. All cases are not severe. Many people show few or no symptoms. The disease is caused by spirochaete type of bacterium (*Borrelia burgdorferi*), which is transmitted through the bite of an infective tick.

Can all ticks carry spirochaete?

Research shows that the most effective vectors (transmitters) of the spirochaete are in genus *Ixodes* (Fig. 1). This tick is small-- no bigger than a dried lentil when fully engorged. These small ticks often go unnoticed, even when attached to the skin.

Do *Ixodes* ticks occur in Washington?

Fourteen different kinds (species) of *Ixodes* have a geographic distribution that includes Washington. Not all of these are probable vectors because they restrict their feeding to hosts other than people. However, several such as *Ixodes pacificus*, *I. Angustus*, *I. rugosus*, *I. Spinipalpis* will feed on a wider range of hosts including people. *Ixodes pacificus* (Fig. 2) has the widest host range and is the primary vector in Pacific coastal areas.

Does Lyme Disease occur in Washington?

A survey by the Center for Disease Control (Atlanta, GA) reported a conservative count of 17 human cases of Lyme Disease in Washington during 1987 and 1988. There were probably many more. The prevalence of Lyme Disease has increased dramatically in the U.S. during the past decade. It outranks all other arthropod borne diseases with an annual incidence of about 6,000 diagnosed cases. Undoubtedly, there are a far greater number of undiagnosed or misdiagnosed cases not reported.

Is Lyme Disease difficult to diagnose?

Lyme Disease is a complex clinical disorder that shows a wide variety of inconsistent symptoms and signs. Serological diagnosis of the patient's blood is often inaccurate or misleading and may require repeated testing. Sixty percent of untreated patients show arthritis of the large joints (e.g., shoulders, elbow, hips, and knees). A migratory rash associated with fatigue, headache and overall flu-like symptoms occur in 25-70 percent of positive cases. The first sign is often a large, doughnut-shaped rash at the site of the tick bite. A key suspicion to the clinical case is the unrelated ailment of several body symptoms (e.g., nervous, circulatory, muscle, digestive).

Can Lyme Disease be treated?

Administration of antibiotics given early in the course of the disease generally results in cure. In more severe cases, massive doses of penicillin are used, but complete cure is less promising.

How Can I avoid Lyme Disease?

To avoid Lyme Disease, avoid ticks that spread the spirochaete. The nymphal state of *Ixodes* ticks is the principal culprit. These are extremely small, pinhead sized, 8-legged immature ticks that are most active in late spring and early summer.

How can I protect against these ticks?

You can avoid tick areas such as wood's edges, ravines, lakeshores, or grasslands. Sand dunes and groomed parklands or lawns are unlikely to harbor ticks.

If you do frequent tick habitat, wear full-length trousers with the cuffs stuffed into boots, high shoes or heavy socks, and spray the shoes, socks and lower pant legs with repellants such as PERMANONE or DEET. As soon as possible after being in tick habitats, examine your body (especially groin, armpits, and scalp for any new bumps or "pimples"). Take a shower and wash thoroughly with soap.

What if I find a tick?

It takes about 24 hours for a tick to attach for feeding, so prompt tick removal is important. Using tweezers, grasp the attachment end of the tick, close to the skin surface and pull gently outward until the tick breaks free. Treat the site with antiseptic and make note on your calendar of the date that you found the tick and the site where it was attached. Save the tick in alcohol in case identification is necessary later. Lyme Disease may take a month or more before showing signs of infection and your record of the location and time of the bite may help in early diagnosis.

What if part of the tick remains in the skin?

Sometimes, if the tick has become well embedded prior to attempts at removal, a small portion will break off when the tick is pulled forcibly. Probe with a sterilized needle to remove the embedded part of the tick and treat the site with an antiseptic wash.



Fig. 1. A nonengorged *Ixodes pacificus* adult tick. By K. Grey.

Fig. 2. An engorged *Ixodes pacificus* adult tick. By K. Grey.