How is Lyme Disease Transmitted?

The Lyme disease bacterium, *Borrelia burgdorferi*, normally lives in mice, squirrels and other small animals. It is transmitted among these animals – and to humans -- through the bites of certain species of ticks.

In the northeastern and north-central United States, the blacklegged tick (or deer tick, *Ixodes scapularis*) transmits Lyme disease. In the Pacific coastal United States, the disease is spread by the western blacklegged tick (*Ixodes pacificus*). Other tick species found in the United States have not been shown to transmit *Borrelia burgdorferi*. Blacklegged ticks live for two years and have three feeding stages: larvae, nymph, and adult. When a young tick feeds on an infected animal, the tick takes the bacterium into its body along with the blood meal. The bacterium then lives in the gut of the tick. If the tick feeds again, it can transmit the bacterium to its new host. Usually the new host is another small rodent, but sometimes the new host is a human.

Most cases of human illness occur in the late spring and summer when the tiny nymphs are most active and human outdoor activity is greatest.

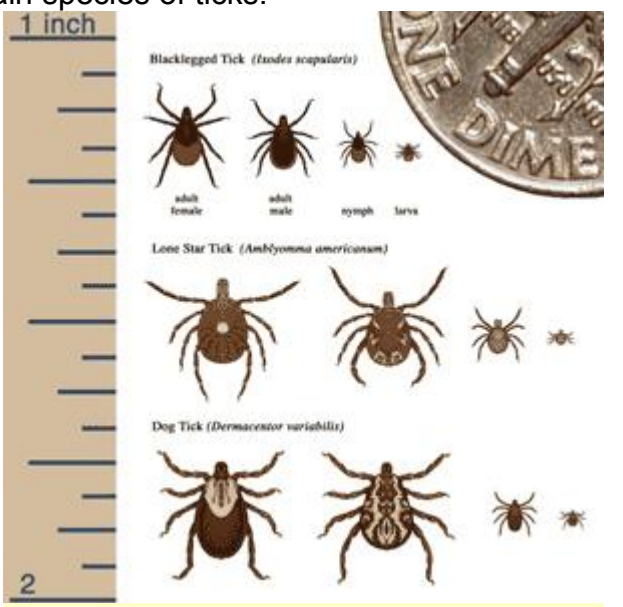

Image showing appearance and relative sizes of adult male and female, nymph and larval ticks including deer ticks (*Ixodes scapularis*), Lone star ticks (*Amblyomma americanum*), and dog ticks (*Dermacentor variabilis*). Of those pictured, only the *Ixodes scapularis* ticks are known to transmit Lyme disease.

Although adult ticks often feed on deer, these animals do not become infected. Deer are nevertheless important in transporting ticks and maintaining tick populations.

Other Modes of Transmission

Person-to-Person

There is no evidence that Lyme disease is transmitted from person-to-person. For example, a person cannot get infected from touching, kissing or having sex with a person who has Lyme disease.

During Pregnancy & While Breastfeeding

Lyme disease acquired during pregnancy may lead to infection of the placenta and possible stillbirth, however, no negative effects on the fetus have been found when the mother receives appropriate antibiotic treatment. There are no reports of Lyme disease transmission from breast milk.

From Blood
Although no cases of Lyme disease have been linked to blood transfusion, scientists have found that the Lyme disease bacteria can live in blood that is stored for donation. Individuals being treated for Lyme disease with an antibiotic should not donate blood. Individuals who have completed antibiotic treatment for Lyme disease may be considered as potential blood donors. Information on the current criteria for blood donation is available on the Red Cross website.

From Pets
Although dogs and cats can get Lyme disease, there is no evidence that they spread the disease directly to their owners. However, pets can bring infected ticks into your home or yard. Consider protecting your pet, and possibly yourself, through the use of tick control products for animals.

Other Transmission
You will not get Lyme disease from eating venison or squirrel meat, but in keeping with general food safety principles meat should always be cooked thoroughly. Note that hunting and dressing deer or squirrels may bring you into close contact with infected ticks.

There is no credible evidence that Lyme disease can be transmitted through air, food, water, or from the bites of mosquitoes, flies, fleas, or lice.