

# The 'Sneaky Diseases'

An outdoor medical expert recommends ways to prevent tick-borne Lyme disease and mosquito-spread West Nile virus.

Summer is the height of the BSA camping season, so it is important for parents and leaders to review preventive measures for Lyme disease, caused by the bite of infected ticks, and West Nile virus, transmitted through mosquito bites. While rarely fatal, both ailments can be debilitating if not promptly treated.

Sawyer's Family Insect Repellent, a controlled release product, contains 20 percent DEET. Sawyer's permethrin clothing spray, effective for six weeks, repels ticks. OFF! Skinzastic family spray (7 percent DEET) is unscented. Bens 30 percent DEET formula repels ticks and mosquitoes.



"These are sneaky diseases," said Dr. William W. Forgey, a recognized expert on wilderness medicine and a member of the BSA's National Health and Safety Committee. "In either case, you can be quite ill and not know what you have."

Cases of Lyme disease and West Nile virus have been documented in nearly every state of the nation. Both are difficult to diagnose, and the initial bite often goes undetected. Lyme disease, in particular, has become more pervasive. In areas of the country where the deer population has exploded, so has the number of deer ticks, which can carry Lyme disease.

But there is good news: Both diseases are highly preventable if campers heed a few, easy-to-follow precautions. Dr. Forgey advocates this approach: 1) treat clothing with a chemical called permethrin and 2) apply a repellent containing

the chemical DEET to exposed skin.

Permethrin spray is sold in sporting-goods and camping-supply stores. (Some retailers also sell clothing made of permethrin-treated fabric that remains effective for about 20 washings.) When sprayed with permethrin, garments will safely protect the wearer for at least six weeks, even with repeated laundering.

"Permethrin adheres to natural and synthetic fabrics very well," said Dr. Forgey. "It's deactivated by an enzyme that is present naturally in human skin, so it doesn't penetrate the skin or get into the bloodstream." He recommends that Scouts treat all of their outer clothing as well as tents and sleeping bags with the repellent.

When a tick or mosquito comes in contact with permethrin-treated clothing, the insect gets sick, says Dr. Forgey.

"Typically, a tick will take hours to find a place to attach to the skin, but with permethrin present, it will lose interest in eating you well before that," he said.

A tick must remain attached to its host for about 36 to 48 hours to successfully infect it with Lyme disease, and "there's no way it'll survive that long if you're wearing clothing treated with permethrin," Dr. Forgey said.

Scout leaders should be sure that everyone on a camp-out uses permethrin. "A bug-free barrier can be established when people use permethrin collectively," Dr. Forgey said. "The overall presence of insects in the area will be significantly lowered."

For areas of exposed skin, Dr. Forgey recommends applying an insect repellent containing DEET in combination

with wearing the permethrin-treated clothing. That's vital in areas where West Nile virus is a threat.

"If you know that West Nile is in your area, I'd use a product that contains 12 to 22 percent DEET," he said. "Otherwise, a lower concentration, or even something milder like citronella, will suffice, as long as you are wearing the permethrin-treated clothing."

(In areas where blackflies are a problem, Dr. Forgey advises using an even higher concentration of DEET, at least 30 percent. The bites of blackflies can cause disease as well as large sores.)

Don't assume you are safe from West Nile virus just because you are not in a swampy or low-lying area, Dr. Forgey adds. Mosquitoes that carry West Nile can thrive in "high and dry" terrain.

Dr. Forgey advises campers to change and launder clothes and to shower immediately upon arrival at home from an outdoor expedition.

"The most dangerous ticks likely to infect you are also the tiniest ones, no bigger than a pencil dot," he said. "That big, ugly swollen soft shell tick that's growing out of your skin is actually not likely to carry Lyme disease."

For more information on bug-proofing your next wilderness outing, visit Dr. Forgey's Web site, [www.docforgey.com](http://www.docforgey.com).

Mary Jacobs is a Dallas, Tex.-based freelance writer who also wrote "The Wonder of the Woods" in this issue.

■ **Lyme disease** is caused by the bite of a tick infected with bacteria called *Borrelia burgdorferi*. Symptoms may include a red, "bull's-eye" shaped rash, followed by flu-like symptoms such as fatigue, headache, aching muscles and joints, fever, sore throat, stiff neck, and swollen glands. If treated promptly with antibiotics, the symptoms will disappear within days and more serious complications will be avoided.

■ **West Nile virus** is a mosquito-borne virus first seen in the United States in 1999. Many people who are infected do not experience symptoms, which may include fever, headache, and body aches. In a small number of cases, the virus can lead to encephalitis (inflammation of the brain) with severe headache, stiff neck, muscle weakness, and disorientation.

BY MARY JACOBS ■ PHOTOGRAPHS BY OLIVIA OGREN-HREJSA