

Permethrin and Ticks



More insect-borne diseases are transmitted by ticks, in the United States, than by any other insect. A bloodthirsty tick can carry many different pathogens, including bacteria, rickettsia, viruses, protozoa and parasites. Although Lyme disease accounts for the majority of diagnosed tick-borne disease cases, there are several other important illnesses that can be transmitted from a tick bite. Before your next great adventure out of doors, protect yourself from insect-borne diseases by using a Permethrin-based Tick Repellent.

LYME DISEASE -a tick-infected disease of the *Borrelia burgdorferi*, a spirochete bacteria that progresses through 3 stages of acute symptoms to chronic illness. Lyme is rarely fatal, but is crippling and debilitating if not treated with antibiotic therapy. Stage 1: any combination of headache, chills, nausea, fever, spreading rash, aching joints, fatigue. Stage 2: complications to the cardiovascular and/or nervous systems with varying degrees of heart block, meningitis, encephalitis, facial paralysis (Bell's palsy) and affects to peripheral nerves. Painful joints, tendons or muscles may also be noted. Stage 3: arthritis is the most common long term symptom accompanied by swelling, redness or pain in one or more large joints.

ROCKY MOUNTAIN SPOTTED FEVER [RMSF] -a tick-vectored disease of *Rickettsia rickettsii*. Characterized by a sudden onset of a moderate to high fever, within 3-14 days of infection, accompanied by headache, chills, vomiting, body discomfort and muscle pain. 50% of cases are accompanied by a rash of either flat or slightly raised tiny red spots on the wrists and ankles, which quickly spread to palms and soles, then spreads across the rest of the body. The disease quickly progresses to abdominal pain, diarrhea, swollen lymph nodes, and respiratory and renal (kidney) failure. RMSF has a high fatality rate in undiagnosed cases, and is effectively treated with antibiotic therapy.

EHRlichiosis (HGE & OTHERS) -recently recognized tick-vectored diseases of the rickettsia organism. All variations of ehrlichiosis have similar symptoms that begin 1-21 days following infection and resemble RMSF. The diseases range from mild illness to a severe, life-threatening condition. Characteristic symptoms are high fever, nausea, vomiting, appetite loss, body discomfort and muscle pain. A rash, similar to RMSF, may occur in 20% of cases. Severe complications may lead to acute respiratory, or renal failure and may be fatal.

TICK (RELAPSING) FEVER -a tick-vectored disease of the *Borrelia* spp., a spirochete bacteria with sharp and sudden acute symptoms beginning 7-14 days after infection. A tiny black ulcer may develop at the bite site followed by high fever, chills, rapid heart beat, headache, abdominal pain, joint pain, body discomfort and muscle pain. This disease is noted for cycles of fever and no fever lasting 2-4 days accompanied by flat, pinpoint, round, purplish-red rash. Tick fever has a high fatality rate in undiagnosed cases.

TULAREMIA -an infection from the *Francisella tularensis*, a coccus bacteria that is vectored from the bites of ticks, mammals, deer flies and mosquitoes, and from contact or ingestion of infected animal tissues and water. Severe symptoms develop typically after 3 days with sudden onset of fever, chills, headache, fatigue, body discomfort, muscle pain and sometime abdominal pain, an ulcer at the tick bite site and painful swelling of lymph nodes. Tularemia has a high fatality rate in undiagnosed cases, and is treated with antibiotic therapy.

COLORADO TICK FEVER -a moderately severe disease of the *Coltivirus* spp., a virus that develops symptoms of fever, chills, severe headache, body discomfort and sensitivity to light after 4-5 days of infection. Symptoms may go away after 5-8 days and reappear in 2-4 days.

BABESIOSIS -a tick-vectored malaria-like illness of the *Babesia* spp., a protozoa parasite that manifests itself in 1 week to 12 months following infection. Symptoms are a gradual onset of body discomfort, loss of appetite and fatigue, followed by fever, drenching sweats, muscle pain, headache, and range from a mild, self-limited illness to severe complications and fatal.

TICK PARALYSIS -is a tick-vectored neurotoxin with symptoms appearing 2-7 days while a tick is feeding on your blood causing weakness in the lower extremities progressing to total body paralysis over several hours to days. Symptoms resolve within hours or days after the tick is discovered and removed. If the tick is not discovered, the disease can be fatal.

Always consult a physician for diagnosis, ...or for more information on insect-borne diseases.