

# Lyme and Co-infections Chart

Co-Infections	Vector	Causative Agent	Endemic Area	Symptoms
<b>Lyme Disease</b> (also called STARI or Masters' Disease)	Deer Tick Pacific Black-legged Tick Lone Star Tick	<b>Spirocyte Infection</b> <i>Borrelia burgdorferi</i> <i>Borrelia lonestari</i> <i>Other Borrelia?</i>	Throughout us	Off season "flu" Rash (bull's-eye or other) Constitutional symptoms Musculoskeletal symptoms Wide range
<b>Babesiosis</b>	Deer Tick Pacific Black-legged Tick	<b>Malaria like Parasite</b> <i>Babesia microti</i> WA-1 New strain	Northeast t West Coast	Fever Hemolytic anemia Constitutional symptoms Possible
<b>Ehrlichiosis</b>	Deer Tick Pacific Black-legged Tick American Dog Tick Long Star Tick	<b>Parasite</b> <i>Anaplasma phagocytophila</i>	Northeast upper Midwest	Fever Headache Constitutional symptoms Possible death
Colorado Tick Fever	Rocky Mtn Wood Tick	Colorado Tick <b>Fever virus</b>	Western us	Fever with remission Second bout of fever
Tick-borne Relapsing Fever	Relapsing Fever Tick (soft tick)	<b>Spirocyte Infection</b> <i>Borrelia hermsii</i> <i>Borrelia parkeri</i> <i>Borrelia turicata</i>	Western us	Sudden onset high fever, recurrent fevers Petechial rashes
<b>Q Fever</b>	Brown Dog Tick Rocky Mtn Wood Tick Lone Star Tick	<b>Bacteria</b> <i>Coxiella burnetii</i>	Throughout us	Acute fever Chills
Powassan Viral Encephalitis	Woodchuck Tick	<b>Flavivirus</b>	Eastern and Western us	Fever Meningoencephalitis 10% fatality rate 50% neurologic sequelae
<b>Rocky Mountain Spotted Fever</b>	American Dog Tick Rocky Mtn Wood Tick Relapsing fever Tick? (soft ticks)	<b>Rickettsia Bacteria</b>	Throughout us	Sudden fever Maculopapular rash on soles of hands and feet that spreads over the entire body
Tick Paralysis	American Dog Tick Rocky Mtn Wood Tick Lone Star Tick	<b>Neurotoxin</b> excreted from tick's salivary gland	Throughout us	Fatigue Flaccid paralysis Tongue and facial paralysis Convulsions Death
<b>Tularemia</b>	American Dog Tick Rocky Mtn Wood Tick Lone Star Tick	<b>Bacteria</b> <i>Francisella-ularensis</i>	Throughout us	Indolent ulcers Swollen lymph nodes Deaths
<b>Bartonella</b>	Cats Ticks Fleas	<b>Bacteria</b> <i>Bartonella uintana</i> <i>Bartonella enselae</i>	Worldwide	Fever Mild neurologic signs Granulomatous lymphadenitis