

LymeFacts: Co-Infections

About LymeHope

LymeHope is a Canadian not-for-profit* dedicated to education & outreach on the subject of Lyme & related diseases. We (i) provide education & outreach to patients, the general public, medical professionals and industry leaders, (ii) advance knowledge & support research, and (iii) provide encouragement, hope & support to Canadian families struggling with the devastating effects of these diseases & the challenges accessing care at home. www.lymehope.ca *CRA charitable status pending

Co-Infection	Symptoms	Cdn. Test?*
Babesiosis	Babesiosis is a parasitic infection of red blood cells. Symptoms include: Flu Symptoms (Fever, Chills, Sweats, Aches), Loss of Appetite, Nausea, Fatigue, Hemolytic Anemia, Photophobia, Dark Urine, Depression, Cough, Jaundice, Muscle & Joint Pain.	Yes blood smear
Bartonella	Rage, 'Stretch Mark' Rash, Sore Feet, Shin Pain, Swollen Lymph Nodes, Low-Grade Fever, Eye problems, Muscle Pain, Headaches, Endocarditis (infected heart valve).	Yes
Ehrlichiosis	Fever, Headache, Chills, Malaise, Muscle Pain, Nausea/Vomiting/Diarrhea, Anorexia, Red Eyes (Conjunctival Infection), Spotted (Maculopapular / Petechial) Rash (<10%).	Yes
Anaplasmosis	Fever, Headache, Muscle Pain, Malaise, Chills, Nausea/Abdominal Pain, Cough, Confusion, Rash (Rarely), Difficulty Breathing, Neurologic, Renal Failure.	Yes
Alpha-Gal Allergy	New Allergy to Red Meat: Runny Nose, Hives, Cramps, Nausea, Vomiting, Diarrhea, Sneezing, Headaches, Asthma, Anaphylactic Shock (often delayed).	Yes
Rocky Mtn. Spotted Fever	Spotted 'Maculopopular' Rash (Red Splotches and/or Red Dots), Fever, Headaches, Nausea / Vomiting, Stomach & Muscle Pain, Loss of Appetite, Hearing Loss, Paralysis.	Yes
Tularemia	Fever, Chills, Headaches, Diarrhea, Muscle Aches, Joint Pain, Dry Cough, Weakness, Chest Pain, Breathing Issues, Eye Pain/Swelling, Ulcers, Swollen Lymph Nodes.	Yes
Tick Paralysis	Numbness/Tingling in Face & Limbs, Fatigue, Weakness, Irritability, Double Vision, Loss of Balance, Difficulty Swallowing & Speaking, Partial or Whole Paralysis (Progressive).	No
Powassan Virus	Fever, Headache, Vomiting, Generalized Weakness, Meningo Encephalitis (Altered Mental Status, Seizures, Aphasia, Paresis, Cranial Nerve Palsies, Movement Disorder).	Yes

Sources: https://www.cdc.gov/parasites/babesiosis/gen_info/faqs.html; <http://www.bccdc.ca/health-info/diseases-conditions/tick-paralysis>, <https://www.cdc.gov/ticks/tickbornediseases/index.html>

* Tests vary across Canada – please check with your Provincial / Territorial Public Health Unit for list of local tests.

NEW: Physicians may now ask Public Health for Banding Patterns for ALL Western Blots (W.B. only run if "ELISA" is positive).

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Know your tick species & diseases

North American tick species & diseases they can carry:

Photo:

Blacklegged Ticks (*Ixodes Scapularis*) can carry:

Lyme Disease (*Borrelia Burgdorferi*) Anaplasma Ehrlichia Bartonella Babesia
Tick-Borne Relapsing Fever Powassan Virus *Borrelia Mayonii* & *Miyamotoi*



Western Blacklegged Ticks (*Ixodes Pacificus*) can carry:

Anaplasma Babesia Ehrlichia Lyme Disease (*Borrelia Burgdorferi*)
Tick-borne Relapsing Fever (also carried by Soft Ticks (*Ornithodoros spp.*))



American Dog Ticks (*Dermacentor Variabilis*) can carry:

Tularemia Rocky Mountain Spotted Fever



Rocky Mountain Wood Ticks (*Dermacentor Andersoni*) can carry:

Rocky Mountain Spotted Fever Tularemia Rickettsia
Colorado Tick Fever Virus Tick Paralysis



Brown Dog Ticks (*Rhipicephalus Sanguineus*) can carry:

Tularemia Rocky Mountain Spotted Fever Murine Typhus



Lone Star Ticks (*Amblyomma Americanum*) can carry:

Heartland Virus Q Fever Tularemia Lyme Disease Alpha Gal (Meat Allergy)
Ehrlichia Bourbon Virus STARI (Southern Tick & Associated Rash Illness)



Groundhog Ticks (*Ixodes Cookei*) can carry:

Powassan Virus



*All photographs courtesy of The Centres for Diseases Control: <https://www.cdc.gov/ticks/tickbornediseases/tickID.html>

Disclaimer:

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