

Washington Tick-borne Diseases

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Disclosures: None

Agenda

- Introduction
- Diseases
- Symptoms
- Diagnosis
- Treatment
- Other considerations
 - Travel
 - Blood transfusions
 - Alpha-gal



Introduction

Washington Tick-borne Diseases



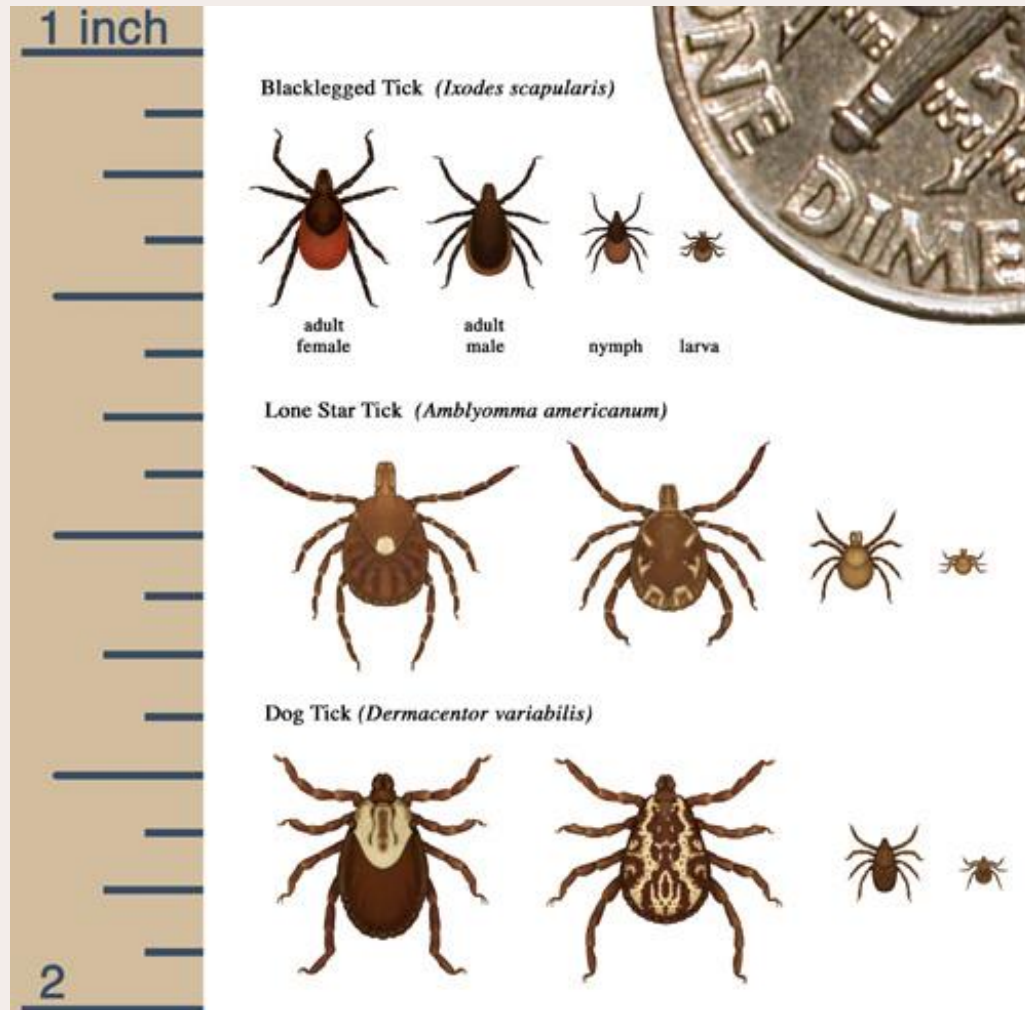
- Rocky Mountain Spotted Fever
- Tick-Borne Relapsing Fever
- Tularemia
- Lyme Disease
- Tick Paralysis

Tick-borne Diseases in Washington State

Species of ticks and the types of diseases they carry may vary by region. Below, is a chart of common tick-borne diseases and evidence for local transmission in Washington state.

Disease	Identified in humans with WA-only exposure	Identified in field-collected ticks in WA
Anaplasmosis	Yes	Yes
Babesiosis	Yes	No
Hard tick relapsing fever (<i>Borrelia miyamotoi</i>)	No	Yes
Ehrlichiosis	No	No
Lyme disease	Yes	Yes
Rocky Mountain Spotted Fever	Yes	No
Soft tick relapsing fever (<i>Borrelia hermsii</i>)	Yes	Yes
Tularemia	Yes	Yes

Washington Tick Species



Ixodes pacificus (Blacklegged tick)

Dermacentor andersoni (Rocky Mountain wood tick)

Dermacentor variabilis (American dog tick)

Ornithodoros hermsi (Soft tick)

Rocky Mountain Wood Tick (*Dermacentor andersoni*)



Nonspecific Symptoms

- Fevers/chills
- Muscle and/or joint aches
- Headache
- Fatigue
- Rash
- Nausea

Symptoms of a tick-borne disease



Red spot or rash near the bite site



Full body rash



Neck stiffness



Headache



Nausea



Weakness



Muscle or joint pain or achiness



Fever

Individual Diseases

Rocky Mountain Spotted Fever

Pathogen: Bacteria *Rickettsia rickettsii*

Vector and reservoir: *Dermatocentor* tick

- April to October
- Initially nonspecific symptoms—fever and headache, nausea/vomiting, muscle pain
- Rash typically 2 to 4 days after fever begins, nonpruritic starts on wrists and ankles spreads send repeatedly including palms and soles and to trunk
 - Eschar
 - 10-15% spotless
- Mortality rate 5-10% (up to 20%)
- Treatment- Doxycycline, Doxycycline, Doxycycline



Tick-Borne Relapsing Fever

Pathogen: Bacteria *Borrelia hermsii*

Vector: *Ornithodoros* soft tick

Reservoir: Chipmunks and tree squirrels

- Cabins 1500 to 8000 feet
- May to September (but can be year-round)
- Symptoms 4–21 days after exposure, last about 3 days followed by 7 days without fever
 - Fever, shaking chills, drenching sweats, and hypotension
 - Process can repeat multiple times
- Special considerations in pregnancy



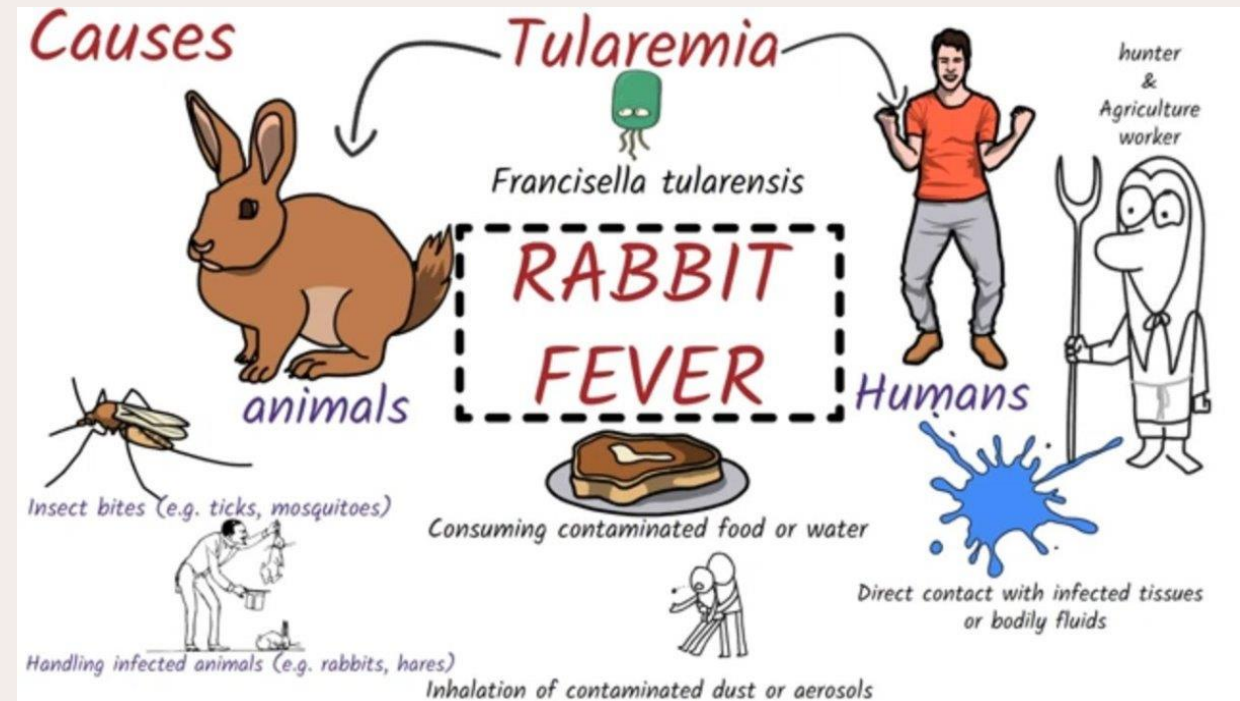
Tularemia

Pathogen: Bacteria *Francisella tularensis*

Vector: Dermacentor tick

Reservoir: Rabbits, ticks, environment

- Glandular or ulceroglandular
 - Ulcer
 - Significant lymphadenopathy
 - Fevers, chills, fatigue, headache, myalgias
- Diagnosis
 - Serology
 - Culture – Tularemia
 - Extended incubation–fastidious slow-growing bacterium
 - Lab biohazard
- Treatment- Fluoroquinolone



Lyme Disease

Pathogen: Bacteria *Borrelia burgdorferi*

Vector: Black-legged tick (nymphs)

Reservoir: Small mammals and lizards

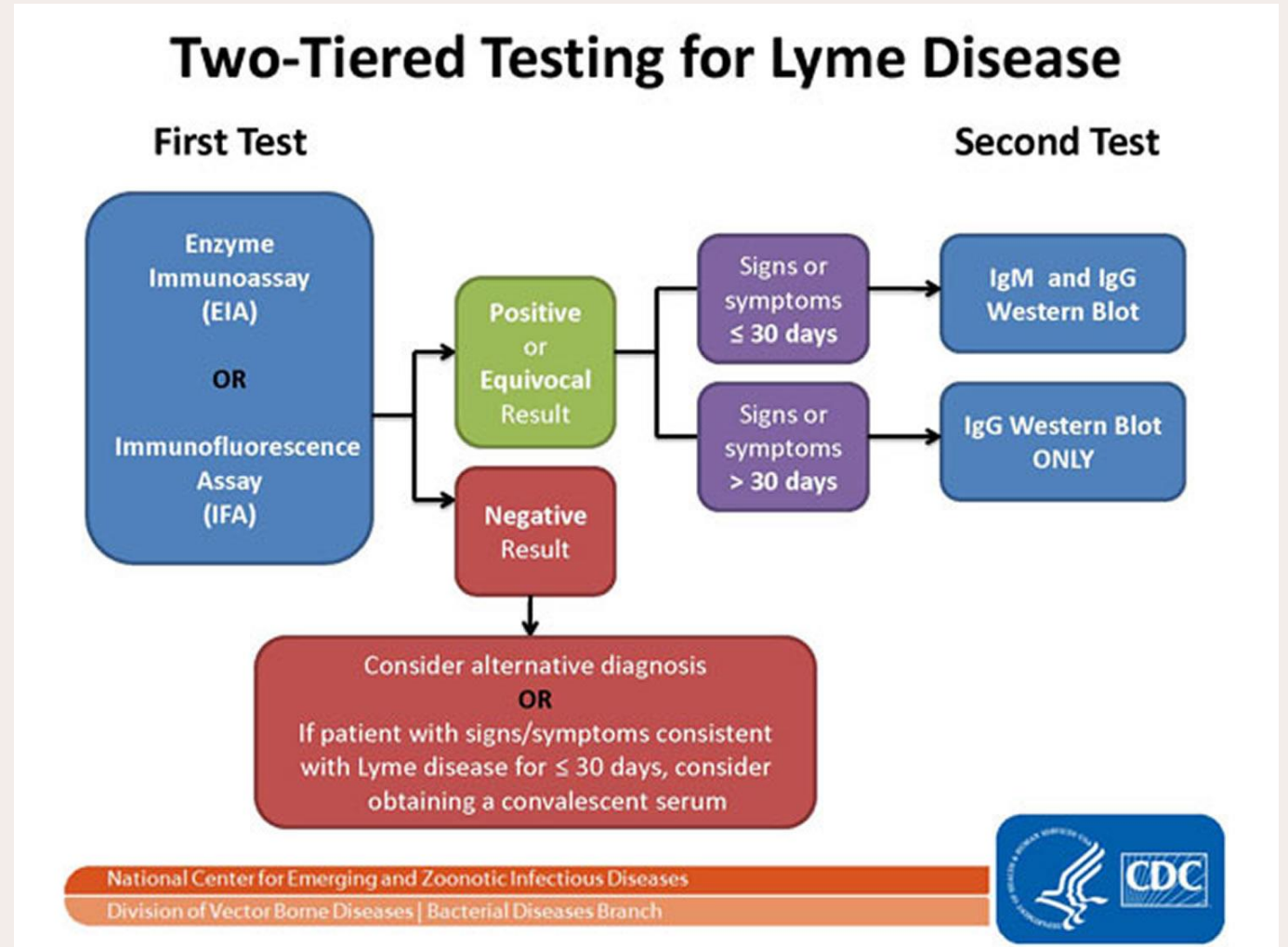
- Early (3-30d)- Fever, headache, fatigue, erythema migrans
- Early disseminated (d-m)- Cranial neuritis (Bell's palsy), meningitis, carditis
- Late disseminated (m-y)- Lyme arthritis (knee)



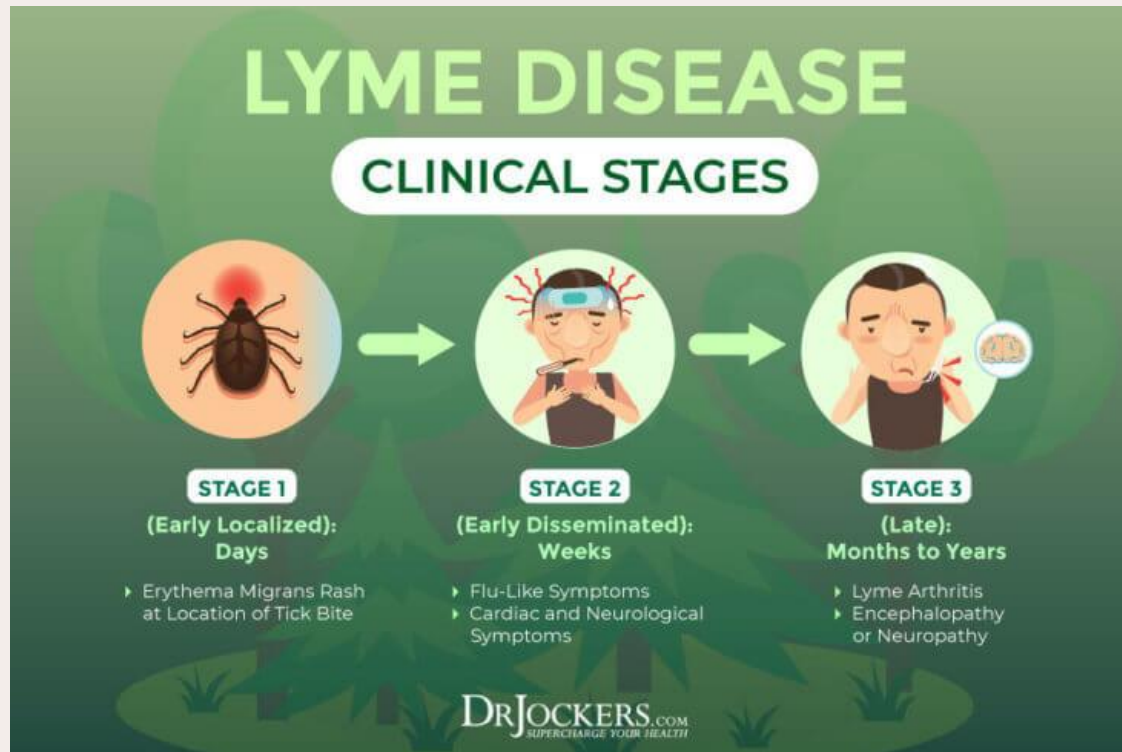
Lyme Disease

Diagnosis:

- Erythema migrans
- Serology-two tiered- Enzyme immunoassay (EIA) x2 or EIA followed by western blot



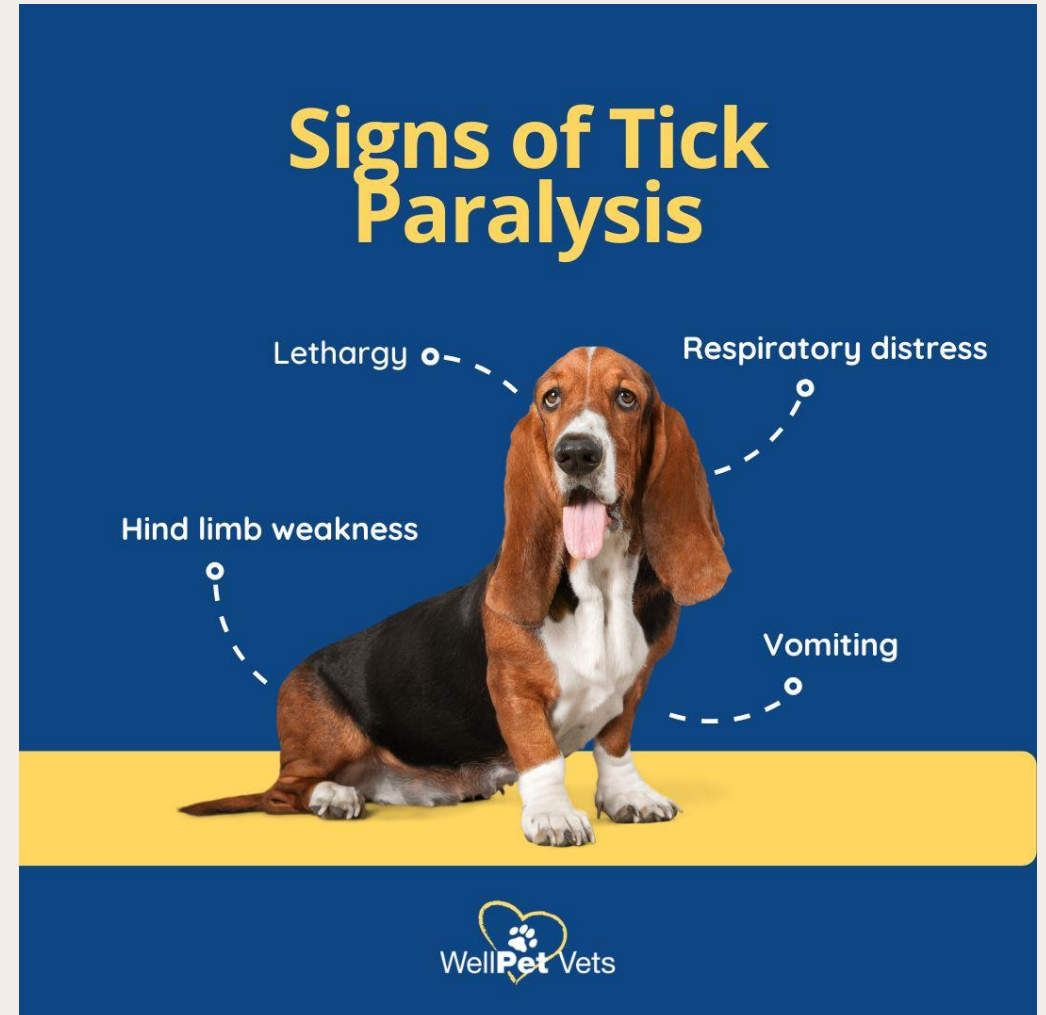
Lyme Disease- Treatment



- Early Disease- 10 days Doxycycline
- Disseminated
 - Neurologic (Facial nerve palsy, meningitis) 14-21d Doxycycline
 - Carditis- 14-21d Doxycycline or Ceftriaxone
 - Arthritis – 28d Doxycycline or amoxicillin
 - Pregnancy and pediatric special considerations
- Prophylaxis- Doxycycline 200mg x 1 dose (criteria needed)
- Post-treatment Lyme disease syndrome

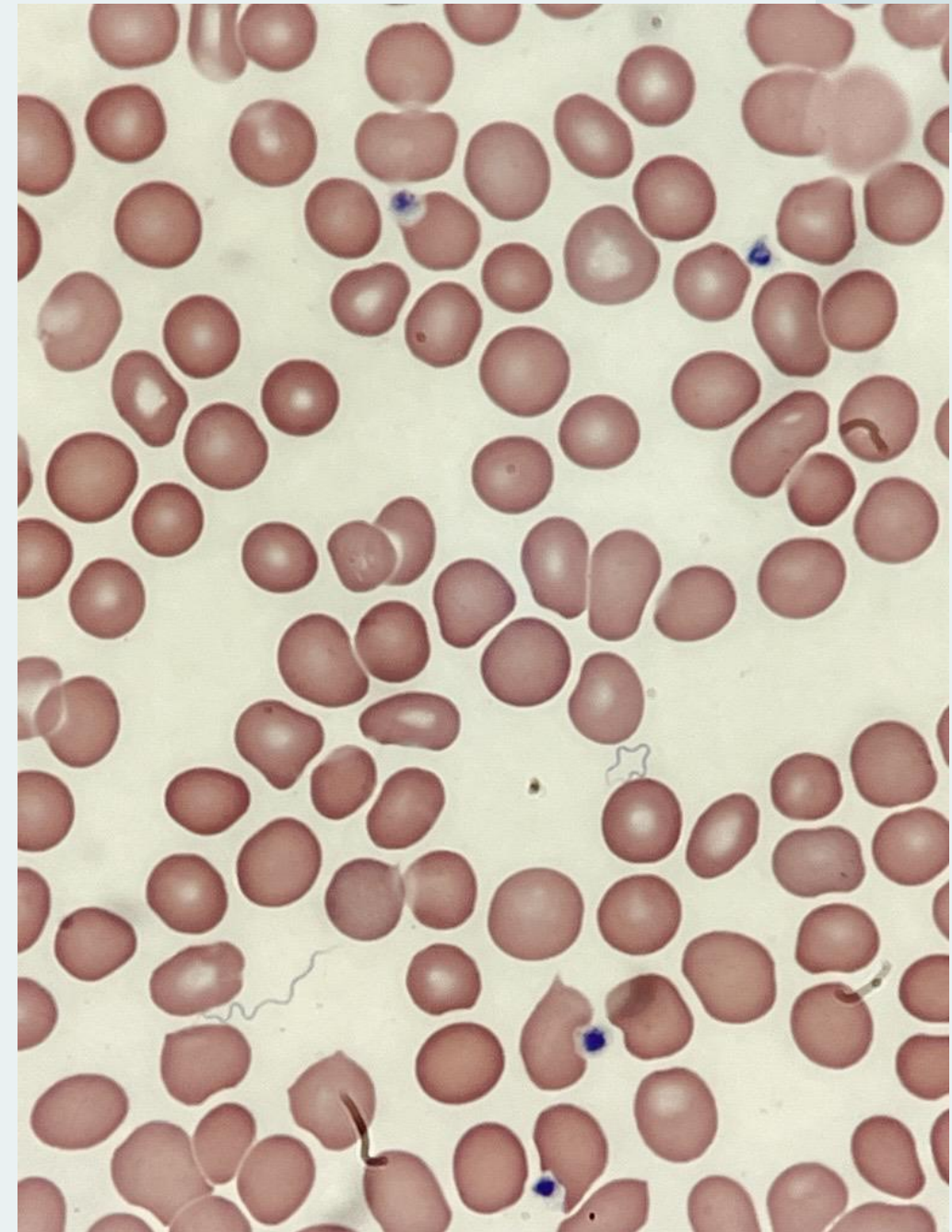
Tick Paralysis

- Toxin in the saliva of the tick
- Progressive paralysis that typically starts in the legs and progresses upward
 - Can resemble Guillain-Barré or botulism
 - Paralysis of chest muscles can lead to respiratory failure and death within 24 to 48 hours
- Ixodes, Dermacentor, Amblyomma ticks
- Treatment—prompt removal—usually leads to complete recovery



Diagnosis Summary

- PCR - RMSF
- Serology-RMSF, STRF, tularemia, Lyme
 - Seroconversion
 - RMSF-Fourfold rise in IgG between acute and convalescent samples (1-2 weeks later)
 - Tularemia- IgM, IgG week 1, repeat 2-3 weeks later
- Peripheral smear- STRF
- Culture - Tularemia
 - Extended incubation–fastidious slow-growing bacterium
 - Lab biohazard
- Karius Test



Treatment Summary

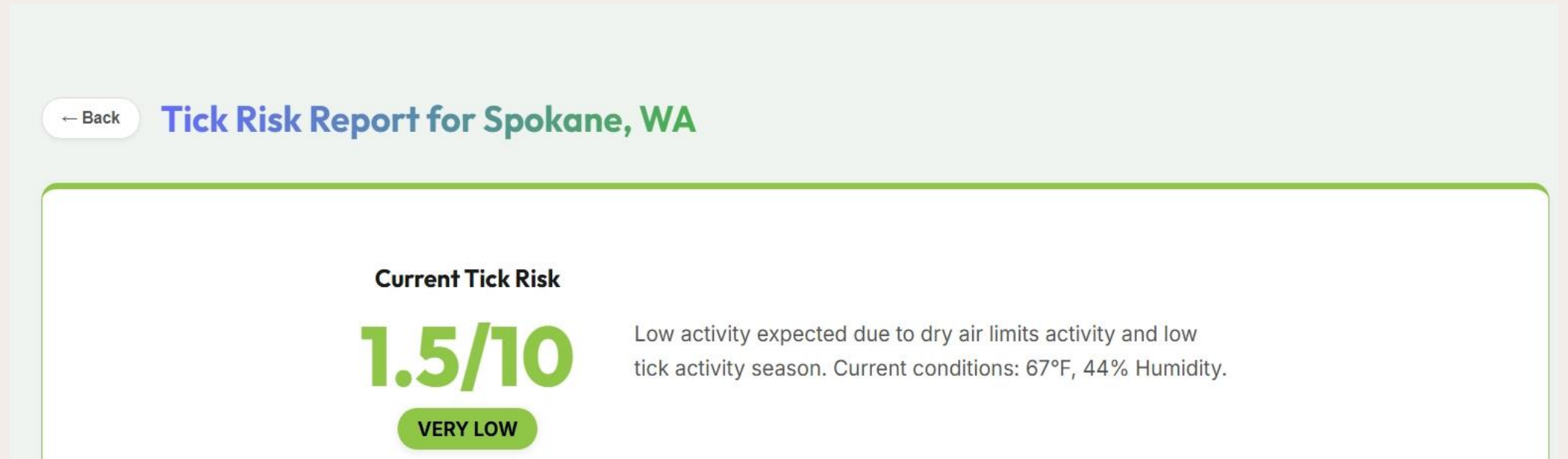
- Remove ticks
- DOXYCYCLINE!!!!!!
 - RMSF-7 days
 - STRF-10 days (Pen G pregnancy)
 - Lyme Disease-10-21 days
 - Jarisch-Herxheimer reaction
- Doxycycline exceptions
 - Tularemia- first line treatment fluoroquinolone or gentamicin 7-14 days
 - Babesiosis-Atovaquone plus Azithromycin 7-10 days

Other Considerations

[Ticks in Washington 2026 | Live Activity Map & Lyme Risk](#)

[Ticks in Washington \(2026\) — Bites, Sightings & Species | Tick Map](#)

- Travel
- Blood transfusions
- Alpha-gal



Thank you

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Centers for Disease Control and Prevention. Tick-Borne Diseases. Accessed 2026-09-03.

Washington State Department of Health. (n.d.). Tick-borne diseases. Washington State Department of Health. Retrieved September 3, 2026