

Recognizing & Managing Tick-Borne Diseases



A Guide for Healthcare Providers



When a patient seeks care after a tick bite or has signs of tick-borne disease, clinicians should consider:



Immediate Tick Removal



Signs & Symptoms



Patient Management



Diagnostic Testing

Immediate Tick Removal

How to Remove a Tick



1
Use fine-tipped tweezers to grasp the tick as close to the skin as you can

2
Pull upward with steady, even pressure. Don't twist or jerk the tick.

3
After removing the tick, clean the bite area with rubbing alcohol or soap and water

Kill a live tick by placing it in rubbing alcohol or freezing it in a sealed bag/container for 24 hours. Consider submitting the tick for species identification.*

Should the tick be submitted for testing?

Testing the tick for evidence of infection is typically **not** recommended because:

- Laboratories that conduct tick testing are not required to have the same standards of quality control used by clinical diagnostic laboratories. Results of tick testing should not be used for treatment decisions.
- Even if a tick tests positive, it may not have been attached long enough to transmit infection.
- Even if a tick tests negative, the patient may have been bitten unknowingly by a different infected tick.
- Results of tick tests typically are not available before symptom onset.

Because different tick species transmit different disease pathogens, knowing the tick species may assist with diagnosis.

*Physicians submitting ticks found on patients for speciation should visit www.doh.wa.gov/Portals/1/Documents/5240/SCSI-Para-SpeciD-V1.pdf

Residents submitting ticks for speciation should submit them according to the guidelines on www.doh.wa.gov/CommunityandEnvironment/Pests/Ticks

Signs & Symptoms

Signs and symptoms of tick-borne disease typically appear within 30 days

Tick-borne diseases can have similar and non-specific signs and symptoms, which may include:

- Fever/chills
- Rash, often maculopapular to petechial
- Headache, fatigue, muscle aches




The combination of symptoms varies greatly from person to person.

For certain diseases (Lyme, Babesiosis), disease transmission usually requires the tick to be attached for more than 36 hours. Areas of erythema or redness that appear within 48 hours of tick attachment and are less than 5 cm in diameter are more consistent with an allergic reaction to the tick bite than erythema migrans.

Diagnostic Testing

When to test for tick-borne diseases

Patients with tick-borne diseases may not recall having been bitten by a tick. Consider the following for patients who develop clinical signs and symptoms suspicious for tick-borne disease:

	Symptom type and onset		Travel to regions with high disease incidence		Season/possible exposure location
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Tests are available for different tick-borne diseases. Contact the local health jurisdiction where the patient lives for testing and interpretation guidance. In general:

- Detection of DNA by PCR of whole blood is most sensitive during the first week of acute illness; sensitivity may decrease after administration of antibiotics. An FDA-approved PCR test is not available for Lyme disease.
- Laboratory testing using EIA or IFA assays is most informative when paired serum samples are used, one taken in the first week of illness, and the second taken 2-4 weeks later. Specimens collected early after symptom onset may test negative.

Patient Management

Treat immediately if suspecting anaplasmosis, ehrlichiosis, or spotted fever rickettsiosis. Clinical suspicion of these diseases is sufficient to begin first-line treatment with doxycycline, even before diagnostic testing. Delay in treatment may result in severe illness and even death.

Recommend symptom watch for asymptomatic patients who experience a tick bite

Antibiotic treatment following a tick bite is **not** recommended as a means to prevent anaplasmosis, babesiosis, ehrlichiosis, Rocky Mountain spotted fever, or other rickettsial diseases; or to prevent Lyme disease in a low endemic area such as Washington. Instead, people should be alert for tick-borne illness symptoms and consult a physician if fever, rash, or other symptoms of concern develop within 30 days. Patients with babesiosis may rarely develop symptoms weeks to months following the bite.

Additional information about testing is available in CDC's *Tick-borne Diseases of the US*:

www.cdc.gov/lyme/resources/TickborneDiseases.pdf

Tick-Borne Diseases in Washington

Only some species of ticks bite and transmit infections to people. While not all biting ticks transmit pathogens, some may harbor multiple disease agents and can cause simultaneous infections with multiple agents.

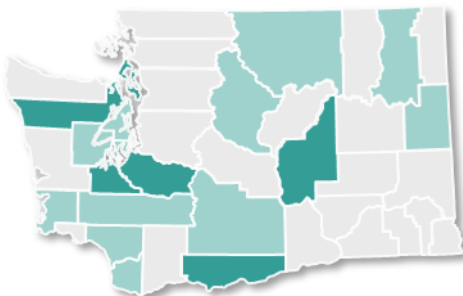
Species of ticks and types of diseases they may carry vary by region. Washington State has a lower rate of tick-borne disease than Northeastern and Midwestern U.S. Prevalence of common tick-borne diseases in Washington:

Disease	Identified in humans with WA-only exposure	Human cases each year with WA-only exposures	Identified in ticks in WA
Anaplasmosis	No	0	Yes
Babesiosis	Yes	0-2	No
<i>Borrelia miyamotoi</i>	No	0	Yes
Ehrlichiosis	No	0	No
Lyme disease	Yes	1-7	Yes
Rocky Mountain Spotted Fever	Yes	0-1	No
Relapsing Fever	Yes	0-12	Yes
Tularemia	Yes	0-10	Yes

Tick-Borne Disease Exposure Locations in Washington

Information about outdoor exposure is collected for people diagnosed with tick-borne diseases. These maps show where Washington residents who had Lyme disease or tick-borne relapsing fever were determined to have been exposed.

Human Lyme Disease Cases by County of Exposure, 2008-2017



Human Relapsing Fever Cases by County of Exposure, 2008-2017



1 case reported
 ≥ 2 cases reported