

Tick and Tick Testing FAQs

1. What should I do if I find a tick biting me?

You should remove a biting tick as soon as you spot it. A tick can easily and safely be removed using pointy tweezers. Follow these [instructions for tick removal](#). If you cannot remove the mouth easily with the pointy tweezers, leave it alone and let the skin heal. The CDC does not recommend the testing of ticks associated with bites.

2. Why does the Centers for Disease Control and Prevention (CDC) not recommend testing ticks for Lyme disease after they have bitten people?

According to the CDC, results of tick testing should not be used for treatment decisions. The detection of *Borrelia burgdorferi* (the bacteria that causes Lyme disease) in the submitted tick does not mean you're infected. A negative test may make you feel safe, but you might have been bitten by a different tick. If you do get infected, you will probably develop symptoms before the tick test result comes back. Don't wait for tick testing results to start treatment if you are showing symptoms. For these reasons, the CDC does not recommend testing ticks from people for diagnostic purposes.

3. What diseases can ticks transmit?

Infected ticks can transmit different diseases, including Lyme Disease, Rocky Mountain Spotted Fever, and Tick-Borne Relapsing Fever. However, not all ticks carry these diseases, and many ticks that people encounter in California are not infected. Different diseases are transmitted by different types of ticks:

- Lyme disease can be transmitted by the western black-legged tick (*Ixodes pacificus*) along the Pacific coast.
- Rocky Mountain spotted fever can be transmitted by dog and wood ticks.
- Tick-borne relapsing fever can be transmitted to humans through bites of infected soft ticks.

4. What types of ticks are commonly found in California? And how do I recognize a tick?

You might encounter black-legged ticks (*Ixodes pacificus*) and dog ticks (*Dermacentor* or *Rhipicephalus*) in wilderness areas in California. Ticks are small arachnids, like spiders, and have eight legs when they are nymphs or adults. They use their sharp mouthparts, called the hypostome, to bite.

5. What symptoms are seen with Lyme disease and when should I visit my doctor?

Early signs and symptoms of Lyme disease include fever, chills, headache, tiredness, muscle or joint pain, and swollen lymph nodes. About 70–80% of infected persons get a bull's-eye-shaped rash. If you have been bitten by a tick, watch the bite spot closely. Within 3 days of being bitten, many people will develop a red spot smaller than a dime. This is a typical allergic reaction to the tick's saliva. But if the bite mark grows to bigger than 2 inches, see a doctor as it could be a sign of infection. Later signs and symptoms of Lyme disease can include bad headaches, arthritis, facial muscle weakness, and irregular heartbeat, among other symptoms.

6. What should I do if I am having some of the symptoms of Lyme disease?

If you have been bitten by a tick and have symptoms like fever, chills, headache, or a bull's-eye rash (see more symptoms above), **see your doctor or get medical help right away. Don't wait for tick test results** as these may take a week before coming back. Time is critical, so act immediately to get the care you need.

7. How long does a tick have to be on me before I can get Lyme disease?

You can only get Lyme disease if a tick carrying *Borrelia burgdorferi* bites you. Research shows that black-legged ticks must be attached for more than 24 hours to transmit *Borrelia burgdorferi*. Ticks attached for less than 24 hours are unlikely to transmit infection.

8. What can I do to prevent a tick from biting me?

To help prevent being bitten by ticks, treat your clothes (shoes, socks, shorts/pants, and shirt) with Permethrin tick repellent the day before a hike. Let it dry onto the fabric before you wear them. Also, stay in the center of the trail during your hike and check for ticks when you get home.

9. How should I store a tick so that it can be tested?

Store ticks for testing in a resealable plastic bag. Include a damp paper towel (moistened with water) inside the bag to prevent the tick from drying out. **Do not soak the tick in alcohol or any liquid other than water**, as this will make the tick untestable. Do not use a container that has stored anything other than water.

The [Tick Removal and Collection Procedure](#) provides more information about how to store a tick for submission.

10. What types of tick testing are available at the Solano County Public Health Laboratory?

The Napa-Solano-Yolo-Marin County Public Health Laboratory can:

- Identify the tick
- Perform an indirect fluorescent antibody (IFA) test on the tick's mid-gut contents to check if it has *Borrelia burgdorferi*, which causes Lyme disease. This test is only done on black-legged ticks (*Ixodes* sp.)

If you would like to test a tick for other tick-borne diseases, we recommend that you contact your doctor or another laboratory. Please note that we do not offer referral services to other laboratories for tick testing.

11. What does a positive test result mean?

A positive test result means that organisms resembling *Borrelia burgdorferi*, which causes Lyme disease, were found when in the tick's mid-gut.

Check out the [Tick Test Result Interpretation](#) page for more information.

12. What does a negative result mean?

A negative test result means that no organisms resembling *Borrelia burgdorferi*, which causes Lyme disease, were found in the tick's mid-gut, within the limits of sensitivity of the indirect fluorescent antibody test.

Check out the [Tick Test Result Interpretation](#) page for more information.

13. If a tick I submitted tests positive for *Borrelia burgdorferi*, does that mean I have Lyme disease?

No, being bitten by a tick does NOT necessarily mean that you will get Lyme disease. The chance of getting infected with *Borrelia burgdorferi* depends on how long the tick was

feeding on you, if the tick was crushed during removal, or if its mouth parts were left under the skin, among other factors.

Many people never develop the disease after a tick bite. Some might get a rash and nothing else, while others might have more serious problems. If bitten by a tick, consult your doctor. Research shows that black-legged ticks need to be attached for more than 24 hours to transmit *Borrelia burgdorferi*. Ticks attached for less than 24 hours are unlikely to transmit infection.

14. If the tick I submitted tests negative for *Borrelia burgdorferi*, does that assure me that I won't get Lyme disease?

A negative test result shows that *Borrelia burgdorferi* was not detected in the tick you had submitted, within the sensitivity limits of the indirect fluorescent antibody test. However, a negative test result does not mean that the person bitten is not infected with *Borrelia burgdorferi* or another tick-borne pathogen. The person might have been bitten by another tick or at another time.

15. Why was the tick I submitted considered unsatisfactory?

There are many reasons why a tick is unsatisfactory for testing. Common reasons are:

- The tick dried out.
- The tick was placed in alcohol.
- The specimen submitted was not a tick.

Please follow the [Tick Removal and Collection Procedure](#) to ensure that the tick you submit can be tested.

16. How frequently do ticks test positive in your laboratory?

The table below shows the positivity rate for ticks submitted to the Napa-Solano-Yolo-Marin County Public Health Laboratory from 2020 through 2024.

Ticks	2020	2021	2022	2023	2024	Total
No. of <i>Ixodes</i> sp. submitted	561	405	348	303	337	1,954
No. of <i>Ixodes</i> sp. tested for <i>B. burgdorferi</i>	399	266	321	257	277	1,520
Positive	5	0	1	3	0	9
Negative	394	266	320	254	277	1,511
Positivity Rate	1%	0%	0.3%	1%	0%	0.6%

Ticks are sent by people from different places in the county, state, and even across the country. Most of the ticks received by the Public Health Laboratory are submitted from Marin County. The Napa-Solano-Yolo-Marin County Public Health Laboratory identifies all types of ticks like *Ixodes* (black-legged tick or deer tick), *Dermacentor* (American dog tick), *Amblyomma* (Lone Star tick), and others. *Ixodes* ticks are the main carriers of the Lyme disease bacterium, *Borrelia burgdorferi*, in the U.S.A. Other types of ticks don't usually carry *Borrelia burgdorferi*.

17. What is the sensitivity and specificity of the IFA test?

According to the manufacturer, the specificity of the indirect fluorescent antibody test for *Borrelia burgdorferi* in ticks is 100%. On the other hand, the sensitivity of the assay has not been evaluated by the manufacturer.

18. Can you recommend any additional resources on ticks and tick testing?

Please refer to the following links for additional information:

- <https://www.cdc.gov/ticks/index.html>
- <https://stacks.cdc.gov/view/cdc/55837>
- <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Tick-Borne-Diseases.aspx>
- <https://www.marinhhs.org/lyme-disease-borrelia-burgdorferi>