

# TICKBORNE DISEASE



## What are Tickborne Diseases?

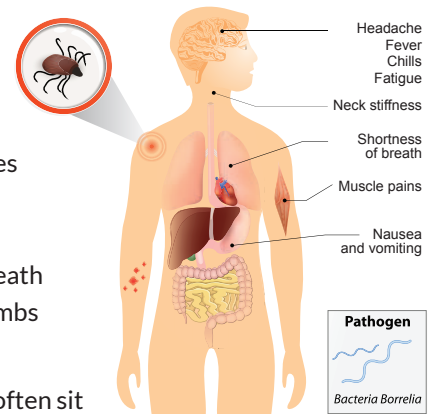
Tickborne diseases can be acquired throughout the United States from a variety of ticks, which carry and pass on different microorganisms to humans and animals.



## Symptoms:

Tickborne diseases can cause a variety of symptoms and usually develop within several days to a few weeks after a tick bite. Symptoms of tickborne diseases include:

- |  |   |
|--|---|
| <input type="checkbox"/> Fever and/or chills                         | <input type="checkbox"/> Loss of appetite                 |
| <input type="checkbox"/> Headache                                    | <input type="checkbox"/> Weight loss                      |
| <input type="checkbox"/> Bell's palsy                                | <input type="checkbox"/> Anemia                           |
| <input type="checkbox"/> Neck stiffness                              | <input type="checkbox"/> Enlarged, tender lymph nodes     |
| <input type="checkbox"/> Fatigue                                     | <input type="checkbox"/> Rash                             |
| <input type="checkbox"/> Muscle or joint aches/pains                 | <input type="checkbox"/> Painful abdomen                  |
| <input type="checkbox"/> GI symptoms: nausea, vomiting, diarrhea     | <input type="checkbox"/> Dizziness or shortness of breath |
| <input type="checkbox"/> Change in cognitive or psychological status | <input type="checkbox"/> Numbness or weakness in limbs    |



- ✓ **Tick Exposure Risks:** Ticks are commonly found in wooded, brushy or grassy areas. They often sit on the tips of tall grass or shrubs waiting for a human or animal host to pass.

- ✓ **Common Tickborne Diseases:** The most common tickborne diseases (TBDs) in the United States are *Anaplasmosis*, *Babesiosis*, *Bartonella infections*, *Ehrlichiosis*, *Rickettsiosis*, *Rocky Mountain spotted fever (RMSF)*, and *Lyme disease*

- ✓ **Lyme Disease:** Lyme disease is among the most familiar of tickborne diseases that can affect humans.

The U.S. Centers for Disease Control and Prevention (CDC) estimates that the true incidence rate of Lyme disease is 10 times greater than what is reported. This is partly attributed to the limitations in diagnosis. Researchers are being encouraged to find ways to improve the diagnosis of Lyme and tickborne diseases.



## Get Tested Now

The Vibrant Tickborne Disease panel provides you with a tool for early identification and differentiation between different tickborne diseases. Vibrant utilizes silicon micro-array technology for an improved sensitivity & specificity for the detection of tickborne diseases.

### Lyme + TBRF

#### Lyme Immunochip IgM

Borrelia burgdorferi VlsE1 IgM  
Borrelia burgdorferi C6 peptide IgM  
Borrelia burgdorferi spp. 18 kDa IgM  
Borrelia burgdorferi spp. 23-25 kDa IgM  
Borrelia burgdorferi spp. 28 kDa IgM  
Borrelia burgdorferi spp. 30 kDa IgM  
Borrelia burgdorferi spp. 31 kDa IgM  
Borrelia burgdorferi spp. 34 kDa IgM  
Borrelia burgdorferi spp. 39 kDa IgM  
Borrelia burgdorferi spp. 41 kDa IgM  
Borrelia burgdorferi spp. 45 kDa IgM  
Borrelia burgdorferi spp. 58 kDa IgM  
Borrelia burgdorferi spp. 66 kDa IgM  
Borrelia burgdorferi spp. 83-93 kDa IgM

#### Lyme Immunochip IgG

Borrelia burgdorferi VlsE1 IgG  
Borrelia burgdorferi C6 peptide IgG  
Borrelia burgdorferi spp. 18 kDa IgG  
Borrelia burgdorferi spp. 23-25 kDa IgG  
Borrelia burgdorferi spp. 28 kDa IgG  
Borrelia burgdorferi spp. 30 kDa IgG  
Borrelia burgdorferi spp. 31 kDa IgG  
Borrelia burgdorferi spp. 34 kDa IgG  
Borrelia burgdorferi spp. 39 kDa IgG  
Borrelia burgdorferi spp. 41 kDa IgG  
Borrelia burgdorferi spp. 45 kDa IgG  
Borrelia burgdorferi spp. 58 kDa IgG  
Borrelia burgdorferi spp. 66 kDa IgG  
Borrelia burgdorferi spp. 83-93 kDa IgG

#### Lyme PCR

Borrelia burgdorferi spp.  
Borrelia afzelii  
Borrelia garinii

#### TBRF Immunochip IgM

Borrelia miyamotoi IgM  
Borrelia hermsii IgM  
Borrelia turicatae IgM

#### TBRF Immunochip IgM

Borrelia miyamotoi IgM  
Borrelia hermsii IgM  
Borrelia turicatae IgM

#### TBRF PCR

Borrelia TBRF spp.  
Borrelia lonestari  
Borrelia miyamotoi

### Coinfections

#### Babesia Immunochip IgM

Babesia microti IRA IgM  
Babesia microti p32 IgM  
Babesia microti p41 IgM

#### Babesia Immunochip IgG

Babesia microti IRA IgG  
Babesia microti p32 IgG  
Babesia microti p41 IgG

#### Babesia PCR

Babesia microti  
Babesia duncani

#### Bartonella Immunochip IgM

Bartonella henselae 17 kDa IgM  
Bartonella henselae 26 kDa IgM  
Bartonella henselae SucB IgM

#### Bartonella Immunochip IgG

Bartonella henselae 17 kDa IgG  
Bartonella henselae 26 kDa IgG  
Bartonella henselae SucB IgG

#### Bartonella PCR

Bartonella spp.

#### HGA Immunochip IgM

Anaplasma phagocytophilum Msp5 IgM  
Anaplasma phagocytophilum p44 IgM  
Anaplasma phagocytophilum Msp5 IgG  
Anaplasma phagocytophilum p44 IgG

#### HME and HGA PCR

Anaplasma phagocytophilum  
Ehrlichia chaffeensis  
Ehrlichia ewingii

#### Chlamydophila pneumoniae

Chlamydophila pneumoniae IgM  
Chlamydophila pneumoniae IgG

#### Chlamydophila pneumoniae

Chlamydophila pneumoniae

#### Mycoplasma PCR

Mycoplasma spp.

#### RMSF PCR

Rickettsia rickettsii

#### Tularemia PCR

Francisella spp.



## Tips to Prevent Tick Bites

*Here are some recommended measures to prevent tick bites and reduce disease exposure risk:*

- Avoid tick-infested areas such as shortcuts through heavily wooded or grassy areas. Stay on designated paths.
- Wear long sleeve shirts and long pants to reduce skin exposure.
- Use repellent that contains 20 to 30 percent DEET on exposed skin and clothing.



## Types of Ticks (Image source: Mayo Foundation for Medical Education and Research)



#### American Dog Tick (aka Wood Tick)

**Location:** East of the Rocky Mountains and some parts of the Pacific coast  
**Transmits:** Rocky Mountain spotted fever (RMSF), Tularemia



#### Gulf Coast Tick

**Location:** Atlantic and Gulf coasts  
**Transmits:** Rickettsiosis



#### Blacklegged Tick

**Location:** Northeastern and upper midwestern U.S.; prevalent on the Pacific coast  
**Transmits:** Lyme disease, Anaplasmosis, Babesiosis, Powassan disease



#### Lone Star Tick

**Location:** Southeastern and Eastern U.S.  
**Transmits:** Tularemia, Ehrlichiosis, Southern tick associated rash illness (STARI)



#### Brown Dog Tick

**Location:** Worldwide  
**Transmits:** RMSF in Southwestern U.S. and along U.S.-Mexico border



#### Rocky Mountain Wood Tick

**Location:** Rocky Mountain states, Southwestern Canada  
**Transmits:** RMSF, Tularemia, Colorado tick fever



#### Groundhog Tick

**Location:** Eastern U.S. and Canada  
**Transmits:** Powassan disease



#### Soft Tick

**Location:** Western U.S., Southwestern Canada  
**Transmits:** Tickborne relapsing fever

### Regulatory Statement

The general wellness test intended uses relate to sustaining or offering general improvement to functions associated with a general state of health while making reference to diseases or conditions. This test has been laboratory developed and its performance characteristics determined by Vibrant America LLC and Vibrant Genomics, CLIA and CAP certified laboratory performing the test. The test has not been cleared or approved by the U.S. Food and Drug Administration (FDA). Although FDA does not currently clear or approve laboratory-developed tests in the U.S., certification of the laboratory is required under CLIA to ensure the quality and validity of the tests.



1(866) 364-0963  
support@vibrant-wellness.com



www.vibrant-wellness.com



1360 Bayport Ave. Ste. B  
San Carlos, CA 94070