



One of the most challenging aspects of reclaiming your health from chronic [Lyme disease](#) is knowing where to turn when new or different symptoms pop up. “My perception after studying a variety of intracellular microbes for years is that **each microbe has a preference for different types of cells in the body,**” says [Dr. Bill Rawls](#), Medical Director of RawlsMD and Vital Plan.

For example, [Borrelia burgdorferi](#), the predominant bacteria that causes Lyme disease in the United States, has an affinity for collagenous tissues in the body. Therefore, the symptoms that come with borrelia infection tend to impact those areas with high concentrations of collagen: [the brain](#), joints, [muscles](#), etc. **But some additional, unexpected symptoms can arise from Lyme coinfections (simultaneous infections),** and it’s not always easy to figure out which microbe is the chief, problem-causing culprit, especially since [testing for Lyme disease](#) and coinfections is woefully inaccurate.

Coinfections at a Glance

Though the symptoms of borrelia often get top billing when it comes to Lyme disease, **there’s rarely a single microbe at play** when you’re dealing with persistent symptoms. Besides Lyme, **the main coinfections that patients often contend with include babesia, bartonella, and mycoplasma.** Below is a brief description of each one:

- **Babesia:** A distant cousin of malaria, [babesia](#) is a protozoan and parasite most commonly transmitted by blacklegged ticks.
- **Bartonella:** Typically spread by biting insects (fleas, ticks, mosquitoes, sandflies, lice, chiggers, biting flies, scabies, mites,

and louse-eating spiders), there are more than a dozen species of [bartonella](#) that can impact human health, giving rise to the broader-named category called bartonella-like organisms (BLO).

- **Mycoplasma:** [Mycoplasma](#) is the smallest of all bacteria, and because it lacks a cell wall, it can alter its shape and travel to areas of the body where other microbes can’t go. It’s spread by biting insects (ticks, mosquitoes, fleas, biting flies), sexual contact, contaminated food, and airborne droplets. The majority of people will have exposure to some form of mycoplasma in their lifetime.

“The reason you’re having symptoms from Lyme and coinfections is that each of these microbes is affecting certain cells in the body, and it could be either one microbe or several microbes contributing to the problem,” says Dr. Rawls. “Every person’s symptoms are a little bit different because the spectrum of microbes they carry is different.”

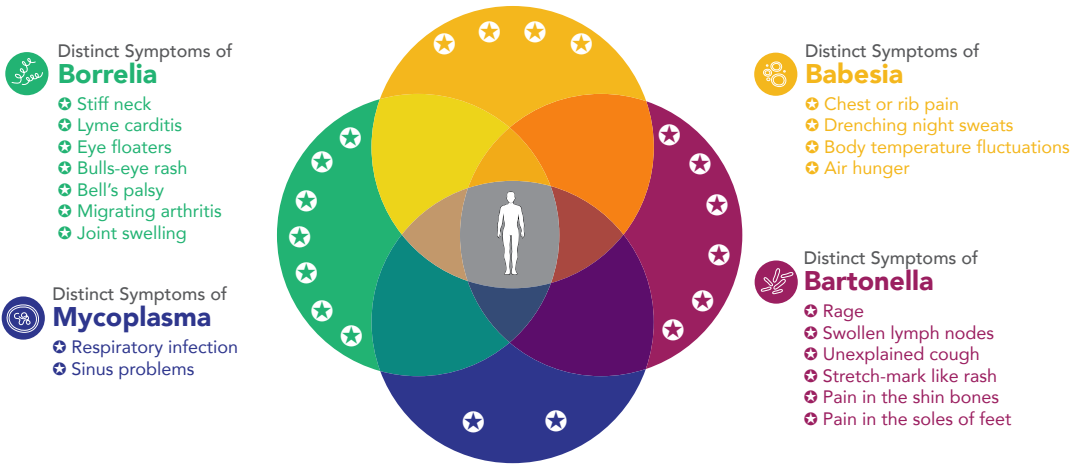
Thus, understanding key characteristics of these more common Lyme disease coinfections can serve as a guide for you and your physician to best target your treatment. “Knowing if you have, say, bartonella or babesia can help you figure out if you need to add on additional herbal therapies or remedies to support your recovery efforts,” explains Dr. Rawls.

So to assist you, **we’ve put together seven coinfection comparison graphics, highlighting the similarities, differences, and telltale signs** between borrelia, babesia, bartonella, and mycoplasma, frequent infections that often go hand in hand.

Lyme Disease Coinfection Comparisons

The following two graphics demonstrate **the telltale and shared signs and symptoms of borrelia, babesia, bartonella, and mycoplasma** that you might not be aware of. Having information about which symptoms are distinct to a particular infection and which ones overlap with others can aid you in identifying the various pathogens you might be dealing with or may have overlooked in your current treatment regimen.

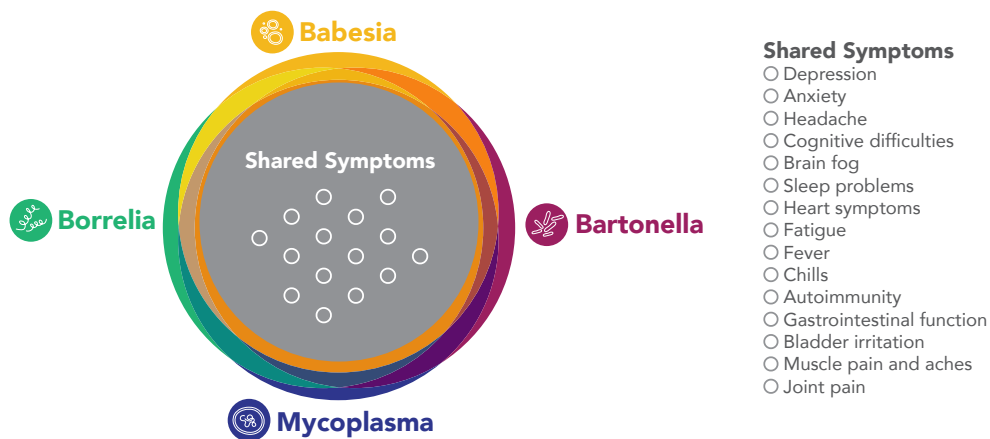
The Telltale Signs of **Borrelia, Babesia, Bartonella, and Mycoplasma**



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The Shared Symptoms of **Borrelia, Babesia, Bartonella, and Mycoplasma**



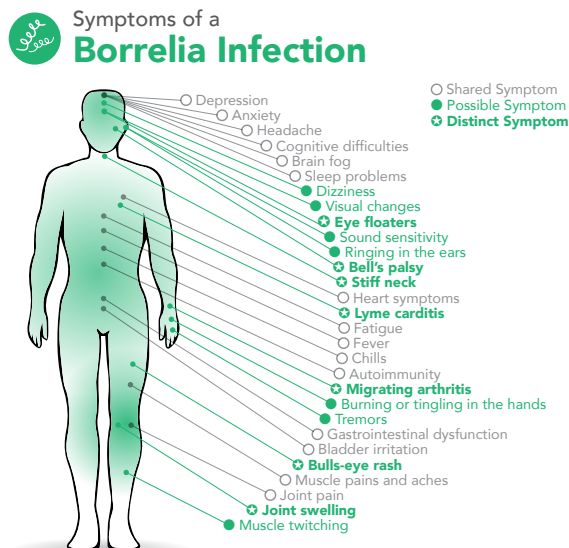
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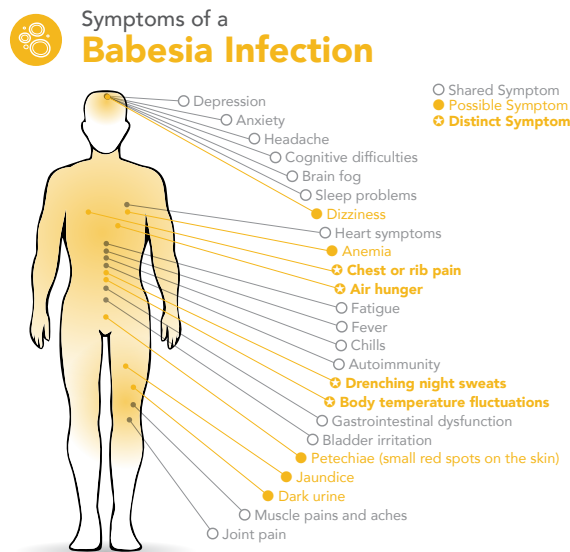
Borrelia and Beyond

Here, we've detailed a more complete snapshot of the range of symptoms borrelia, babesia, bartonella, and mycoplasma infections can cause. Bear in mind that many symptoms are similar, so it's crucial to evaluate your overall symptom profile to get a more accurate diagnosis of what might be going on with you.

The next four graphics allow you to see how Lyme and coinfections could be affecting different systems of the body and influencing how you feel:

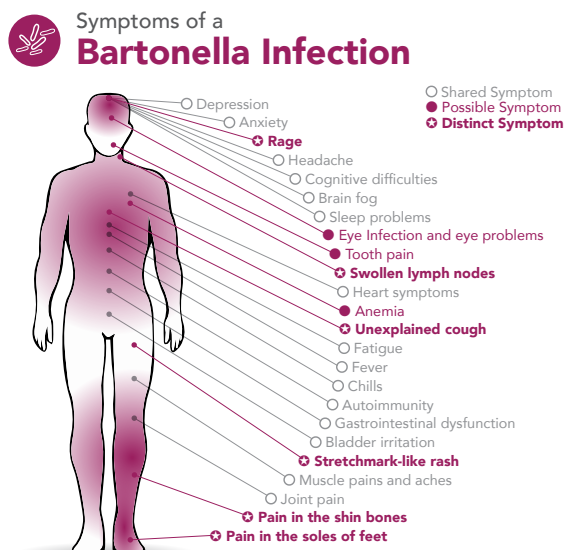


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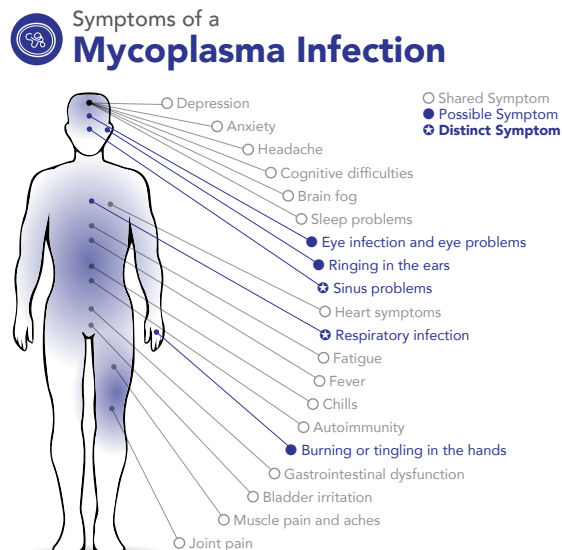
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Symptoms Overview

| Category | | | | | Symptom |
|------------------|----------|---------|------------|------------|---|
| | Borrelia | Babesia | Bartonella | Mycoplasma | |
| General | ○ | ○ | ○ | ○ | Chills |
| | ○ | ○ | ○ | ○ | Fatigue |
| | ○ | ○ | ○ | ○ | Fever |
| | ○ | ○ | ○ | ○ | Headache |
| Neurological | ○ | ○ | ○ | ○ | Anxiety |
| | ★ | | | | Bell's palsy |
| | | ★ | | | Body temperature fluctuations |
| | ○ | ○ | ○ | ○ | Brain fog |
| | ● | | | ● | Burning or tingling in the hands and feet |
| | ○ | ○ | ○ | ○ | Cognitive difficulties |
| | ○ | ○ | ○ | ○ | Depression |
| | ● | ● | | | Dizziness |
| | | ★ | | | Drenching night sweats |
| | | | ★ | | Rage |
| | ● | | | ● | Ringing in the ears |
| | ○ | ○ | ○ | ○ | Sleep problems |
| | ● | | | | Sound sensitivity |
| | ● | | | | Tremors |
| Visual | ★ | | | | Eye floaters |
| | | | ● | ● | Eye infection and eye problems |
| | ● | | | | Visual changes |
| Lymphatic | | | ★ | | Swollen lymph nodes |
| Cardiovascular | | ● | ● | | Anemia |
| | ○ | ○ | ○ | ○ | Heart symptoms |
| | ★ | | | | Lyme carditis |
| Respiratory | | ★ | | | Air hunger |
| | | | | ★ | Respiratory Infection |
| | | | | ★ | Sinus problems |
| | | | ★ | | Unexplained cough |
| Immune | ○ | ○ | ○ | ○ | Autoimmunity |
| Urogenital | ○ | ○ | ○ | ○ | Bladder irritation |
| GastroIntestinal | | ● | | | Dark urine |
| | ○ | ○ | ○ | ○ | Gastrointestinal dysfunction |
| | | ● | | | Jaundice |
| Musculoskeletal | | ★ | | | Chest or rib pain |
| | ○ | ○ | ○ | ○ | Joint pain |
| | ★ | | | | Joint swelling |
| | ★ | | | | Migrating arthritis |
| | ○ | ○ | ○ | ○ | Muscle pain and aches |
| | ● | | | | Muscle twitching |
| | | | ★ | | Pain in the shin bones |
| | | | ★ | | Pain in the soles of the feet |
| | ★ | | | | Stiff neck |
| | | | ● | | Tooth pain |
| Integumentary | ★ | | | | Bulls-eye rash |
| | | ● | | | Petechiae (small red spots on the skin) |
| | | | ★ | | Stretch mark-like rash |

○ Shared Symptom
● Possible Symptom
★ Distinct Symptom