From Wayne Anderson, ND Looking at the symptoms of six major Lyme-related infections (Dr. K's additions italicized)

Because of the inaccuracy of lab tests for these infections we also respect their individual patterns of presentation and will treat if those are shouting out I'm here despite what the lab says. For instance, I just read that Burrascano rated Bartonella testing sensitivity of IGeneX 35-40% and Galaxy 20-30%. That's pretty terrible.

### Babesia or Babesia-like organisms

Primarily affect the BRAIN and ANS. Cognitive and emotional symptoms are the most prominent and top complaint.

Fear is a dominant symptom.

Babesia can cause POTS, racing heart rate or irregular HR and heavy pounding at night.

Air hunger is common complaint and due to ANS dysfunction.

Drenching sweats and chills and so cold they will have to take hot bath or shower to warm up.

Insomnia is also common along with blurred vision, bowel-motility issues and bladder difficulties. People with Babesia will complain of difficulty starting urination or episodes of incontinence.

They can have numbness of wrist, hands, ankles and feet. Babesia doesn't typically cause much pain directly, but pain can result from poor detoxification.

## Bartonella or Bartonella-like organisms

Burrascano feels 50% of Lymies have this as well, it's also more common in patients without Borrelia since they're also transmitted by fleas and from cats.

PAIN is the predominant problem, they often say "you have to help me with this pain." Frequently c/o headaches and icepick-like pain. Babs can cause HA too but much worse from Bart and often with weird other sensations and pressure and typically occipital region (posterior just above neck).

Where Bab have more depression, Bart is associated with anger and irritability. Can be misdiagnosed for bipolar.

Bartonella can directly cause organ issues such as gastritis, 2<sup>nd</sup> to H. Pylori, low-level, relapsing sore throat, and bladder inflammation. Also assoc with IC and conjunctivitis. May have mild elevation of LFTs and associated with Mast Cell Activation.

### **Borrelia**

Predominant symptoms here is fatigue.
Babs and Bart are associated with
restlessness, but Borrelia are too
exhausted to be restless. The pain of
Borrelia is more diffuse and wide-spread
throughout the body or one side of the
body is also common. It is very FMS like
but does like the knees as well. 10%
present with a picture of arthritis and have
been mistaken for RA especially in kids.

Borrelia is the only one I believe that has a 4-6 week cycle. So if symptoms only come around that often it's Borrelia. (Dr. K)

Borrelia has been attributed with ability to mimic so many other disorders but some of those are actually probably due to Babs and Bart.

They claim being able to culture it again is on the horizon and will be available from IGeneX and if so it'll be a game changer. So cross your fingers and pray it's soon.

# Mycoplasma

Mycoplasma are interesting organisms, they are so small that they behave more like viruses. Anderson claims it's found in almost everyone with Lyme Disease. It can accumulate on endothelial linings along blood and lymphatic vessels and cause inflammation and pain. This is often a source of migraines, bladder and IC, inflammatory gut issues and lung issues.

A rare and aggressive form of Mycoplasma can cause RA (Rheumatoid Arthritis) symptoms and severe joint swelling and deformity.

Some researchers feel we all harbor a benign form, that when our immune system is down can mutate into a pathogenic form and cause severe fatigue far worse than all the rest combined.

If after treatment for the other tick borne infections the pt. is more fatigued than ever and joint pain think Mycoplasma.

The immune system often ignores Mycoplasma since it doesn't affect the brain. These pts may also have crawling feeling under skin and can't stand to be massaged.

### Mold

Lyme and mold affect the immune system in the same way and when one of these conditions is present, the person is more susceptible to the other.

Anderson claims that mold "colonizes" genetically susceptible people and Nathan talks about this as well, I believe Shoemaker is correct and that mold does not colonize us, per se, we're being affected by mycotoxins rarely are we colonized. Those that are colonized present differently than CIRS.

Symptoms from mold are not as cyclic as Borrelia and tend to be pretty steady in the onslaught of illness. However, weather changes often bring about more mold illness. Different molds are more present different times of year as well. Symptoms are worse in winter with the house closed.

Depression is a prominent symptoms with mold and with that an inability to think logically or move forward. They are often stuck in a rut and can't seem to address the problems they're facing.

Personally the weird muscle cramps or fasciculations seems to be a moldie symptom.

### Rickettsia

Rickettsia is another class of common coinfections that has been largely underappreciated. Ehrlichia is just one of a 100 types of Rickettsia that can cause disease. Rocky Mountain spotted fever (RMSF) is one that there isn't a test for but was thought to be in a limited part of the US. However, many other similar Rickettsia are spread about.

This organism is much simpler than Borrelia, their hallmark symptoms is a rash involving the soles of the feet and palms of the hands. They stagnate blood leading to blotchy and mottled skin. Edema is common around the eyes and ankles.

They commonly have headaches and brain fog as well, but to a lesser degree. The most prominent symptom is lots of numbness, tingling and joint pain in addition to achy muscles.