Symptom lists

Collation: Gilian Crowther MA (Oxon), Dip NT/ND, FBANT, mNNA, CNHC reg.

On behalf of Dr. Armin Schwarzbach,
ArminLabs
Laboratory for tick-borne diseases
Tel. 0049 821 2182879
info@arminlabs.com

www.arminlabs.com

www.aonm.org
What are the symptoms of Lyme disease?

Lyme Disease is most often categorised into three stages.

**Stage One of Lyme Disease:**

- Flu-like symptoms;
- Rash (that may look like a "bull's-eye");
- High temperature;
- Fever;
- Chills;
- General feeling of illness;
- Neck stiffness (a stiff neck);
- Joint pain;
- Muscle pain;
- Swollen lymph glands;
- Fatigue.

**Stage Two of Lyme Disease:**

- Joint pain;
- Headache;
- Disturbed vision;
- Blurry vision;
- Swelling of the joints (swollen joints);
- Tingling sensation in the hands and feet;
- Numbness of the skin (a numbing sensation);
- Problems with concentrating (lack of concentration);
- Short-term memory loss;
- Forgetfulness;
- Heart rhythm disturbances (a difference to the rhythm of the heart, i.e. fast heartbeat or slower heartbeat), heart palpitations.

**Stage Three of Lyme Disease**

Later disease symptoms may include:

- Arthritis of the large joints: knees, hips, etc.
- Severe headaches;
- Heart arrhythmia;
- Brain disorders and brain disturbance, including: memory loss, mood disturbances and sleep interruption;
- Difficulty concentrating;
- Mental 'fogginess';
- Mood changes/mood swings;
- Aggression;
- Panic attacks;
- Anxiety;
- Temporary amnesia / forgetfulness;
- Difficulty following conversations;
- Difficulty speaking;
- Numbness or tingling in limbs: arms, legs, feet or hands;
- Extreme fatigue/tiredness;
- Temporary paralysis of facial muscles (‘facial palsy’, where there is a drooping or loss of muscle tone in the face);
- Peripheral nerve dysfunction.

More serious symptoms may develop if Lyme disease is left untreated or is not treated early on, as the bacteria spreads to other parts of the body.

**Sources:**
Borrelia/Lyme Disease is a Chameleon ...

- ME
- Fibromyalgia
- Chronic EBV
- Rheumatoid arthritis
- Polymyalgia rheumatica
- Polymyositis/dermatomyositis
- Lupus
- Multiple Chemical Sensitivity
- Bipolar d/o
- Schizoaffective d/o
- Multiple Sclerosis
- Amyotrophic lateral sclerosis
- Alzheimer's disease
- Parkinson's Disease
- Thyroid disease
- Addison's disease
- Hyperparathyroidism
- ADHD
- Autism
- Etc.
Clinical presentation of Babesia

- Headaches
- Night sweats
- Fevers
- Dry cough
- Air hunger
- Easy bruising
- Tinnitus
- Rage
- Despair
- Chills
- Flushing
- Sleep disturbance
- Vivid or violent dreams
- Dysphagia
- Psychic phenomena
- Severe neurological illnesses
- Thirst/Polydipsia
- Fatigue
- Rheumatoid arthritis
- Nausea (severe)
- Malaise
- Anaemia, thrombocytosis, thrombocytopenia
- Abdominal pain
Babesia: Symptoms

Commonly associated with severe Babesia:
- High fever (105° F)
- Severe fatigue and malaise
- Shaking chills
- Recurrent severe drenching sweats, esp. at night
- Severe headache
- Muscle aches (myalgia)
- Joint pain (arthralgia)
- GI: nausea, abdominal pain, diarrhea
- Decreased blood pressure
- Jaundice (probably due to lysis of red blood cells)
- Bruising
- Petechiae
- Decreased cognition (from intravascular coagulation)
- Dark urine
- Pulmonary oedema

Babesia: Signs/abnormal labs

Thrombocytopenia (decreased platelets)
- Enlarged spleen and liver
- Anaemia (low haemoglobin)
- Evidence of haemolysis (destruction of red blood cells)
- Elevated liver function
- Mild neutropenia/leukopenia (decreased white blood cells)
- Low or unstable blood pressure
- Organ malfunction (heart attack, stroke, respiratory distress, kidney failure)

Source: Rosenblatt JE et al. Laboratory Diagnosis of Infections Due to Blood and Tissue Parasites. Clinical Infectious Diseases, Volume 49, Issue 7, 1 October 2009, Pages 1103–1108
Clinical presentation of Bartonella

- Brain Fog
- Fever
- Headaches (ice pick)
- Photophobia
- Tachycardia
- Bowel problems IBS>>>IBD
- Swollen glands
- OCD behavior
- Anxiety
- Endocarditis
- Retinitis
- Peripheral neuropathy
- Psychiatric issues
- Plantar pain, costal margin pain
- Rapid mood shifts
- Abdominal tenderness
- Subcutaneous nodules
- Anxiety
- Swollen joints
- Swollen lymph nodes
- Purple non-blanching abdominal striae
Bartonella: Manifestations

**Lymph:** Frequently the cardinal symptom – enlargement, tenderness, leukocytosis, fever

**Ocular:** Redness, blurred vision, retinitis, uveitis, optic neuritis, etc.

**Ear:** Otitis media, vertigo, labyrinthitis

**Neurological issues:** Headaches, encephalopathy, seizures, facial nerve paralysis, neuralgia, panic attacks, muscle spasms, unexplained rage, multiple other symptoms

**Hepatosplenic issues:** Hepatosplenomegaly, abscesses/granulomas in liver/spleen, gallbladder may be involved

**Renal issues:** Glomerulonephritis, microabscesses, urogenital pain, proteinuria, dark urine

**Orthopaedic:** Bone infection: pain, osteomyelitis, arthritis. Knee, wrist, elbow, ankle, bunion; spine and pelvic girdle. Myalgia, tendonitis.

**Skin:** Rashes, striae, non-healing ulceration, purpuras, vasculitis


This document is intellectual property of Armin Schwarzbach MD PhD. Reproduction only with permission. Please note the copyright.
Striae/stretch marks characteristic of Bartonella

The Lyme Disease Association thanks Dr. Martin Fried, Jersey Shore University Medical Center, for this picture of a Bartonella rash.
Mycoplasma: symptoms

**Pulmonary:** Pneumonia, bronchitis, pharyngitis, rhinitis, earaches, sinusitis  
**Gastrointestinal:** Hepatitis, pancreatitis  
**Rheumatic:** Arthritis, arthralgias, myalgias, polyarthritis  
**Kidneys:** Glomerulonephritis  
**Ocular:** Uveitis  
**Neurological:** Myelitis, Guillain-Barré syndrome, encephalitis, meningitis, polyradiculopathy, peripheral facial paresis optical neuritis, hemorrhagic leukoencephalitis, peripheral polyneuropathy, cranial nerve neuritis, radiculitis

Ehrlichia/Anaplasma: rod shaped bacteria that live inside white blood cells

Small intracellular gram-negative bacteria that cannot exist outside host cells.

Ehrlichia prefers mononuclear phagocytes, while Anaplasma prefers neutrophils.

Ehrlichia: spread/symptoms

Most commonly infects monocytes and macrophages. The bacteria increase granulocytes in the spleen tenfold – this swells the spleen. The natural killer cells are disproportionately distributed to the liver where they produce inflammation, so the liver enzymes AST are elevated in 90% of cases/ALT in 84%. Cholestasis is quite common, sometimes with bile duct injury.

Vectors: Ticks, possibly fleas (cats/dogs)

Symptoms: (incubation time: days up to 4 weeks): rapid onset of beginning illness with fever, headache and prostration, headaches are "sharp, knife-like and often located behind the eyes", muscle pain, not joint pain, neurological symptoms, psychiatric symptoms, rarely: diffuse vasculitic rash, including palms and soles (<10%)
Anaplasma: spread/symptoms

Most commonly infects neutrophils.
Most commonly affected organs/tissues: bone marrow, erythrocytes, liver, spleen, lymph system, lungs
Men more commonly affected than women (2:1).
Markers: Leukopenia (72%), thrombocytopenia (73%), raised AST/ALT, anaemia (55%)

Symptoms: Similar to Ehrlichia, but central nervous system involvement less common than with HME

Vectors: Ticks (Ixodes, Dermacentor, Rhipicephalus, Haemaphysalis Amblyomma), person to person transmission, through respiratory secretions (& through blood transfusion/bone marrow transfer)

Rickettsia

**Bacteria:** Rickettsia conorii (Boutonneuse Fever), R. rickettsia (RMSF), R. helvetica, R. slovaca, R. prowazekii (gram-negative, obligate intracellular in endothelial cells)

**Vector/hosts:** rodent, dogs, humans, Ixodes ricinus, Dermacentor reticulatus

**Symptoms** (incubation period 5 - 7 days): fever, nausea, vomiting, severe headache, lymphadenitis, exanthema

**Complications** (app. 13%): peri-/myocarditis, kidney insufficiency, pneumonia, encephalitis, gastrointestinal bleedings, anaemia, hepatitis, myalgia, meningitis
Chlamydia pneumoniae

**Bacteria:** Chlamydophila pneumoniae (gram-negative, intracellular); cystic and aberrant forms, biofilms

**Vector/transmission:** airborne infection, human to human, ticks? Or reactivated in Lyme disease (horses, koalas, frogs are infected), aerogen transmission (cough) from horses to horse-riders?

**Symptoms:** cough, slight throat pain, hoarseness, sinusitis, atypical pneumonia, meningoencephalitis, bronchiolitis obliterans, myocarditis, Guillain-Barre Syndrome; arthritis, tendovaginitis (4-6 weeks)

**Associations:** Alzheimer’s, Multiple Sclerosis, depression, Fibromyalgia, ME/CFS, heart attacks, acute ischemic stroke (AIS), arteriosclerosis, autism, Parkinsonism, Rheumatoid Arthritis, etc.
Epstein Barr Virus (EBV)

**Virus:** Epstein Barr Virus (obligate intracellular), double stranded DNA virus, one of the Herpesviruses, “Mononucleosis”

**Transmission:** “kissing disease”, saliva, drinking from the same glass, toothbrush, blood, sex, blood-transfusion, organ transplantation

**Symptoms** (incubation period several weeks): fatigue, fever, flu-like symptoms, nausea, loss of appetite, lymphadenitis (swollen lymph nodes in the neck), rash, sore throat, weakness, sore muscles

**Complications:** enlarged spleen, swollen liver, association with Non-Hodgkin Lymphoma
Cytomegalovirus (CMV)

**Virus:** Cytomegalovirus (obligate intracellular), double-stranded DNA virus, one of the Herpes viruses

**Transmission:** body fluids (urine, saliva, breast milk, sexual transmission), organ transplantation, blood transfusion

**Symptoms** (incubation period several weeks): fatigue, fever, flu-like symptoms, lymphadenitis (swollen cervical lymph nodes), sore throat, splenomegaly

**Complications:** congenital infection with hearing loss, vision loss, seizures, mental disabilities, lack of coordination; immune suppressed patients: hepatitis, colitis, retinitis, pneumonitis, esophagitis, polyradiculopathy, transverse myelitis, subacute encephalitis; arterial hypertension, artheroscleroritis, aortic aneurysms; association with Non-Hodgkin Lymphoma
**Herpes Simplex Virus 1 / 2 (HSV 1 / 2)**

**Virus:** Herpes Simplex Virus (Human Herpes Virus HHV 1 / 2) (obligate intracellular), double-stranded DNA virus, one of the Herpes viruses

**Transmission:** Saliva, sharing drinks, sexually transmitted

**Symptoms** (incubation time 2-20 days): Watery blisters on the skin or mucous membranes of the mouth, lips, genitals, anus, flu-like symptoms (fever, muscle aches, swollen lymph nodes, problems urinating, herpes keratitis (pain, light sensitivity, discharge))

**Complications:** Multiple Sclerosis (neurovirulent), loss of vision, encephalitis, latent infection; reactivation by organ transplantation or HIV: encephalitis, pneumonitis, bone marrow suppression
**Varicella Zoster Virus (VZV)**

**Virus:** Varicella Zoster Virus (Human Herpes Virus HHV 3) (obligate intracellular organism), double-stranded DNA virus

**Transmission:** airborne, touching shingles blisters

**Symptoms** (incubation time 10-21 days): “Chickenpox” in younger people, “Herpes Zoster” in adults: Watery blisters on the skin, fever, tiredness, loss of appetite, headache

**Complications:** Encephalitis, pneumonia, bronchitis, 10-20% reactivation from nerve ganglia (Herpes Zoster), post-herpatic neuralgia, Mollaret’s meningitis, Zoster multiplex, “Ramsay Hunt syndrome” (painful blisters on tongue/ear, facial weakness, hearing loss),

Inflammation of arteries (new study Journal of the American College of Cardiology, Vol. 70, Issue 2, July 2017, “Herpes Zoster increases risk of stroke and myocardial infarction” 23,233 patients had a higher risk of apoplectic stroke (35%) and myocardial infarction (59%) after Herpes Zoster
Human Herpes Virus 6 (HHV6)

**Virus:** Human Herpes Virus 6 (obligate intracellular), double-stranded DNA virus, one of the Herpes viruses

**Transmission:** Saliva, latency in salivary glands, haematopoietic (blood-building) system

**Symptoms:** Exanthema subitum (roseola infantum, sixth disease) with high temperature followed by a rash

**Complications:** Multiple Sclerosis (neurovirulent), cofactor in CFS, fibromyalgia, AIDS, optic neuritis, cancer, temporal lobe epilepsy, Hashimoto thyroiditis, liver dysfunction, liver failure; reactivation by organ transplantation: encephalitis, pneumonitis, bone marrow suppression,
Coxsackie Virus

Virus: Coxsackie Virus (obligate intracellular), belongs to Picornaviridae/enterovirus family, is a single-stranded RNA virus divided into group A and group B

Transmission: fecal-oral contamination, droplets, body fluids, utensils, toys, diaper-changing table

Symptoms: Group A: Herpangina, AHC (acute hemorrhagic conjunctivitis), HFM (hand-foot-and-mouth disease), Group B: myocarditis, pericarditis, pleurodynia, hepatitis; Group A and B: fever, rashes, sore throat, diaphorrea, cough, fatigue, conjunctivitis, loss of appetite, headache, night sweats, aseptic meningitis

Complications: CNS disease similar to poliomyelitis, systemic neonatal disease, IDDM (insulin-dependent diabetes mellitus), Group A: generalized myositis with flaccid paralysis, Group B: focal muscle injury, degeneration of neuronal tissue with spastic paralysis
# Symptoms of Yersinia

Table 7. Yersiniosis (Y. Enterocolitica) Symptomatology

<table>
<thead>
<tr>
<th>Stages</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early stage</td>
<td>Gradual development of gastroenteritis, pharyngitis, complications due to inflammation of the intestinal wall, mesenteric lymphadenopathy. Excreatory for months after abatement of gastroenteritis</td>
</tr>
<tr>
<td>Late stage</td>
<td>Articular manifestations: Reactive arthritis in hip, knee, upper ankle, sacroiliac joints, arthralgias, ankylosing spondylitis, rheumatoid arthritis, spondylitis Erythema nodosum, iridocyclitis, conjunctivitis, gastrointestinal complaints, abdominal pain, diarrhea, ulcerative colitis, nephritis, insulin-dependent diabetes mellitus, hepatitis (ANA positive, rheumatoid factor positive), myocarditis (rare), central and peripheral nervous system manifestations, multisystem disease Disease progression in stages with intervals of fewer complaints Correlation with thyroiditis Positive LTT Oscillating serological findings (correlation with disease expression)</td>
</tr>
</tbody>
</table>