

### **HBOT in the treatment of Lyme disease**

Lyme disease is a tick-borne illness which mimics many other diseases and is thus hard to diagnose. Little it is known that hyperbaric oxygen therapy can help destroy spirochetes that cause it.

As stated on the Robert M. Lombard Hyperbaric Oxygenation Medical Center, Inc. website, the *Borrelia burgdorferi* (Bb) spirochetes, which are the cause of Lyme disease, are commonly transmitted by deer tick bites. They are anaerobic or microaerophilic (intolerant of oxygen or elevated levels of oxygen). The Bb spirochetes burrow deeply into muscle and nervous tissue and cause a variety of symptoms. Primary symptoms are an infection localized to the site of the bite, which may be seen as a red, progressively expanding circular lesion, and which may be accompanied by flu-like symptoms.

Secondary symptoms include joint and muscle pain, sore throat, fever, chills, headaches, weakness, intolerance to light, secondary skin rashes, difficulty in thinking, muscle and nervous tissue fatigue, and heart palpitations. Advanced symptoms include arthritis, irregular heartbeat, severe headaches, loss of sensation, carditis, meningitis, cranial neuritis, radiculoneuropathy, and migratory pain in joints, tendons, bursae, muscles or bones. In stage 3, the spirochetes may cause arthritis of large joints, especially in the knees, encephalopathy, and advanced atrophy of the skin of the upper or lower limbs known as Acrodermatitis Chronica Atrophicans (ACA). In the end stage of ACA, the skin becomes so atrophic that the superficial veins and subcutaneous tissue become prominent and are easily lifted and pushed into folds. If left untreated or not treated promptly, Lyme disease symptoms may become chronic; the disease may cause permanent disability and, rarely, death. Lyme disease is often misdiagnosed as another type of illness based on the presentation of symptoms.

### **Spirochetes “don’t like” oxygen**

On the said website it is further stated that in pursuing hyperbaric oxygen (HBO) therapy to treat Lyme disease, it has been shown in studies by both Charles Pavia, PhD, and William P. Fife, PhD, that spirochetes exposed to an increased partial pressure of oxygen could not survive. Bb organisms do not thrive in elevated pO<sub>2</sub> levels above 70-80 torr. Hyperbaric oxygen therapy involves delivering 100% oxygen to a patient at a greater-than-sea-level atmospheric pressure. Normal pO<sub>2</sub> levels of tissues increases from a typical 35-40 torr to 999+ torr when measured by transcutaneous oximetry at 2-3 ATA (atmospheres absolute). Arterial saturation of oxygen rises to about 22 mL/dL, of which nearly 25 percent is dissolved in the plasma. The cerebral-spinal fluid is also supersaturated with molecular oxygen. Life could be sustained without hemoglobin at this level.

Because plasma seeps into areas between cells, this increase in the amount of oxygen carried by the plasma allows oxygen to be distributed at very high levels deep within muscle and body tissues, and to areas where normal blood flow is compromised. This causes accessible *Borrelia burgdorferi* spirochetes to be destroyed, interrupts the reproductive cycle or forces them into spore (inactive) form.

Find out how else hyperbaric oxygen therapy helps with treating Lyme disease and how many treatments are recommended, by visiting this [website](#). And read about another study on Lyme

disease and HBOT [here](#).

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References:

[Hyperbaric Oxygen Therapy for Treatment of Chronic Lyme Disease](#). Published online on Neurological Solutions website.

[Lyme Disease](#). Published online on The Robert M. Lombard Hyperbaric Oxygenation Medical Center, Inc. website.