



## **Hyperbaric Treatment for Lyme Disease**

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February 2013 - Lyme disease causes a variety of symptoms including fatigue, fever, muscle and joint pain which can progress to chronic, severe arthritis. The heart and nervous system can also be severely damaged.

This disease became more common in North America in the early 1990's, when more Americans started to build their houses in rural wooded areas which exposed them to the ticks that are involved in the transmission of *Borrelia*. Currently, tens of thousands of people are diagnosed, although the Centers for Disease Control (CDC) reports that this condition is often underdiagnosed, and the real number may be up to 10 times higher.

### **Hyperbaric treatment to kill Lyme**

The spirochete responsible for the development of Lyme disease are unable to survive in an oxygen environment of 160 mmHg (the partial pressure of oxygen in sea level air). However, the oxygen inspired in the lungs at 160 mmHg will lead to only 30-35 mmHg by the time it reaches the tissue level.

Inside a hyperbaric oxygen chamber, the oxygen pressure is 1794 mmHg, and by the time it reaches the tissue level, an oxygen pressure of 300 mmHg is achieved. At this oxygen level, spirochete are unable to live. When combined with a course of antibiotics (which is the current standard therapy for Lyme disease), hyperbaric treatment has the potential to cure the disease, since it induces an environment which is lethal to the spirochete.

### **More about Hyperbaric Treatment**

Hyperbaric oxygen therapy (HBOT) is a medical treatment that provides your body more oxygen and is based on the fact that illness and trauma are associated with a decreased oxygen supply in the affected tissues or organs. Thus, HBOT can have a positive impact on the central nervous system, reduces inflammation, improves the cell functions and repairs the blood brain barrier. It also improves the function of the immune system because white blood cells start to work better when the oxygen supply is improved, and therefore can better fight infections.

The concept behind this therapy is dated back in the 17th century but in its modern, scientific form it started to be used in 1995. Since then, it has been recommended for a variety of medical concerns from cancer, brain injuries, Crohn's disease, rheumatoid arthritis, Lyme disease and other infections.

There are several mechanisms behind HBOT that bring health benefits to those using this form of therapy such as a significant increase in oxygen supply speeds up the healing process in the tissue, helps even new formation of blood vessels, collagen fibers and skin cells, have an antimicrobial effect (acting synergistically with antibiotics), immune system booster, reduces inflammation and enhances the blood flow in the injured tissues.

An hyperbaric therapy session lasts about an hour, and the patient is placed into a special chamber which contains oxygen and a prescribed chamber pressure is reached. The patient may experience a sensation similar to the one felt when in an airplane that is descending, and this sensation improves if water is swallowed or the ears are cleared by blowing against a pinched nose. Oxygen is a prescription drug, and thus the therapy should be recommended and monitored by a qualified healthcare professional.