

Alternative Therapies for Macular Degeneration

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Hyperbaric (high pressure) oxygen improves the delivery of oxygen to damaged tissues and blood vessels. Pressurized oxygen offers the following benefits:

- 1) Increases oxygen delivery to injured cells and tissues.
- 2) Reduces swelling and inflammation.
- 3) Increases the formation of new blood vessels to injured tissue.
- 4) Improves wound healing.
- 5) Improves the body's resistance to infections.
- 6) Renews damaged neurons, including those in the eyes.
- 7) Speeds elimination of toxic substances

With hyperbaric oxygen therapy, the patient is placed in a chamber and breathes 100% oxygen by mask while the pressure in the chamber is increased to 1.5 - 2.0 times the normal atmospheric pressure. This therapy provides a significant increase in oxygen delivery to the brain compared with that received by breathing air at normal pressure. In damaged tissues, the red blood cells cannot get through the injured and constricted small blood vessels and the tissue becomes deprived of oxygen. Hyperbaric oxygen pushes oxygen into the plasma (the liquid portion of the blood). The plasma becomes "super-saturated" with oxygen and is able to get the oxygen into the oxygen-starved tissue.

Dr. Steenblock first noticed that hyperbaric oxygen was beneficial for eye disorders such as macular degeneration when stroke patients started showing improvement in their vision. Over the past several years, he has developed a program that includes hyperbaric oxygen, nutritional therapies and external counterpulsation.

What is macular degeneration? The macula is the center of your vision. It is the spot on the retina that is being used to focus on these letters. Most cases begin with the "dry" form and gradually progress to the more destructive "wet" version. Most cases of macular degeneration are the dry form, characterized by the accumulation of small, yellow waste deposits (called Drusen) from the photoreceptors in the macula. The layers of epithelial cells under the macula are not able to remove the waste efficiently due to a reduction in blood circulation (and its oxygen and nutrients) to the area. Both the buildup of waste and the lack of oxygen can injure the photoreceptors and lead to their degeneration.

"Wet" macular degeneration is caused by fluid leaking from fragile capillaries. Lack of oxygen to the macula is a primary cause of both types of the disease. In addition, both types of macular degeneration can be improved by restoring the oxygen supply, thereby improving the health of the photoreceptors and small blood vessels in the retina. We have had remarkable success with patients who follow our program. The treatments are safe and, in most cases, they provide long lasting improvements in vision.

Are You At Risk For Macular Degeneration?

Yes (1 point) No (0 points)

1. Are you sixty-five years of age or older? _____
2. Do you look at straight lines and see wavy lines? _____
3. Do you spend time in sunshine without sunglasses? _____
4. Do you drink alcoholic beverages on a daily basis? _____
5. Do you have a family history of macular disease? _____
6. Do you have diabetes? _____
7. Do you have high blood pressure? _____
8. Are there dark spots when you look straight ahead? _____
9. Is your vision becoming blurry? _____
10. Do you have trouble seeing at night? _____

Total: _____

The higher the number you score, the greater the risk of developing macular degeneration.

Hyperbaric Oxygen Research Dr. Jansen and Dr. Nielsen from Copenhagen, Denmark recently wrote a Letter to the Editor in *Acta Ophthalmologica Scandinavica* (2004, 82(4): 485-6) about the beneficial use of hyperbaric oxygen for cystoid macular edema. This swelling and inflammation in the macula is seen in diabetic retinopathy, retinal vein occlusions (blockages), uveitis (inflammation), after cataract surgery and in age-related macular degeneration. Because the lack of oxygen (hypoxia) is often an underlying condition for macular degeneration, these doctors treated two patients with chronic cystoid macular edema with hyperbaric oxygen therapy (HBOT). The first patient was a 57 year old male with Type 2 (adult onset) diabetes. His visual ability was 0.5 and he had difficulty reading. After five 90 minute sessions of HBOT, he showed a visual acuity of 1.0 and gained back his normal reading vision. The second patient was a 56 year old man with cystoid macular pathology and other retinal complications. His visual acuity was .2 and he could not read at all. He also underwent five sessions of HBOT and showed remarkable improvement after the third day. His visual acuity improved to .9 and he regained his normal ability to read. These improvements were maintained for at least seven months of follow up exams. The authors reported that HBOT was "outstanding" and provided "very rapid improvement" in vision. This report also provides day by day changes in the macula with the hyperbaric treatment. As the swelling decreased, reading vision improved.¹ In study by Dr. Krott and associates², those diabetic patients with fibrous developments in the macula (which can block the visual path) showed less improvement with HBOT than those patients with macular edema due to retinal vein occlusions. Dr. Jansen and Dr. Nielsen recommend getting hyperbaric oxygen treatment as soon as possible in macular edema, before the degeneration becomes irreversible.

Hyperbaric oxygen can be beneficial in eye disorders involving a lack of oxygen, swelling and inflammation. It can improve contrast sensitivity, visual field and dark adaptation. HBOT can also assist in wound healing after orbital reconstruction and radiation treatment.^{3,4} In 1987, Dr. Chachia and associates reported that HBOT produced positive results with cystoid macular edema in a patient diagnosed with retinitis pigmentosa.⁵

In addition to HBOT for macular degeneration, Dr. Steenblock uses nutritional therapies high in antioxidants that reduce free radicals (also called reactive oxygen species). Free radicals are single electrons ripped off from atoms from chemical reactions involved in oxygen deficiency or excess, edema, inflammation, alcohol, sunlight, etc. and play a major role in eye damage. A variety of antioxidants, such as glutathione, ascorbic acid (vitamin C), tocopherol (vitamin E), beta-carotene (a precursor of vitamin A), proanthocyanidins, lutein, zeaxanthin (especially important for the macula), zinc, etc. are proving of benefit in protecting the retina from free radical damage. The book, "Save Your Sight!" by the Vision Team, Marc Rose, M.D. and Michael Rose, M.D., provides practical information on the use of diet and antioxidants for protecting our vision (Warner Books, 1998) and both ophthalmologists recommend Dr. Steenblock's macular degeneration program to their patients.

Dr. Steenblock has also seen improvement with external counterpulsation (ECP), a fairly new non-invasive alternative to heart surgery for some conditions of heart disease. ECP is FDA approved for the treatment of angina and congestive heart failure. The device pumps blood from the legs back to the heart. In the process, ECP also increases the blood supply to other organs such as the brain, liver and kidneys.^{6,7} ECP helps to provide the retina with an increased supply of red blood cells (delivering oxygen and nutrients and removing waste) and works synergistically with HBOT to provide the eye with oxygen and nutrients needed for cell survival, repair, and restored function.

References

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