



HYPERBARIC HEALTH

Patient Guide to Hyperbaric Oxygen Therapy

WHAT IS HYPERBARIC OXYGEN THERAPY?

Hyperbaric oxygen therapy (HBO) is a medical treatment in which the entire body is under increased atmospheric pressure, and the patient breathes 100% oxygen. This treatment is administered in a pressurized chamber. It is proven effective for a number of different medical and surgical conditions, either as a primary treatment or in addition to other medical treatments such as antibiotics or surgery.

At the Hyperbaric Unit in our facility, we use a single-person (monoplace) chamber. The chamber is approximately seven feet long and about 36 inches wide. We also have a multi-place chamber to treat two people at the same time.

HOW DOES IT WORK?

Normally, our atmosphere exerts 14.7 pounds per square inch of pressure at sea level. This is equivalent to one atmosphere absolute (1 ATA). We breathe approximately 21% oxygen and 78% nitrogen with 1% in trace gases, such as helium. During HBO, the pressure is increased two or three times more than normal and you breathe 100% oxygen. Most patients are treated at two times the normal atmospheric pressure (2 ATA—or in dive terms, like being under 33 feet of seawater).

The combination of high concentrations of oxygen (100%) and increased pressure cause large amounts of oxygen to be dissolved in your blood and other tissue fluids. There can be as much as 10 to 15 times the usual amount of oxygen dissolved in your blood, which gets much more oxygen to the rest of your body.

Many different problems have been shown to benefit from HBO. Some of the most common problems are non-healing wounds (especially in diabetics), osteomyelitis (bone infections), radiation injury to the bone or soft tissue burns, decompression illness (bends), and carbon monoxide poisoning.

WHAT WILL I FEEL DURING THE TREATMENT?

Once you are in the chamber and the door is closed, you will hear the oxygen begin to circulate; we will then start the gradual increase in pressure. This is called compression. There may be some warmth that you notice, but this is temporary. A nurse/technician will remain with you during the treatment to adjust the rate of compression according to your tolerance and to coach you in relieving the “full” sensation that you may feel in your ears. This feeling resembles what you may have felt while traveling down a mountain, flying, or scuba diving. We will coach you on how to clear your ears, but you may need to try several ways to find the most effective one. Compression generally lasts 7 to 10 minutes, depending on how effectively you clear your ears.

When you have reached the prescribed pressure, the fullness in your ears will cease, and you may rest or sleep during the remainder of the treatment. You may also watch TV or listen to music during this time, which will be about 1.5 to 2

hours. The temperature in the chamber is similar to room temperature but may be adjusted slightly.

Near the end of your treatment, the nurse/technician will gradually decrease the pressure added at the beginning. This is the decompression phase. During decompression, you experience a "popping" sensation in your ears as a result of the changing pressure. This popping is a normal adjustment in your ears; similar to what happens when you are driving up a mountain.

ARE THERE ANY RISKS OR SIDE EFFECTS?

Generally, you will experience no other effect from HBO. However, some patients report a "crackling" sensation in their ears between treatments. This may be relieved in the same manner you clear your ears during compression. If "crackling" should continue, please tell the nurse/technician.

As with all medical procedures and treatments, there are some side effects that may result from the exposure to hyperbaric oxygen. These are rare. The following is a summary of some of the potential risks or side effects of hyperbaric oxygenation:

- Barotraumas or pain in the ears or sinuses: I may experience pain in my ears or sinuses. I also understand that if I am not able to equalize my ears or sinuses, pressurization will be slowed or halted, and suitable remedies will be applied.
- Cerebral Air Embolism and Pneumothorax: I understand that whenever there is a rapid change in ambient pressure, there is the possibility of rupture of the lungs with escapes of air into the arteries or into the chest cavity outside the lungs. This can only occur if the normal passage of air out of the lungs is blocked during decompression. Only slow decompressions are used in hyperbaric oxygen treatment to alleviate this possibility.
- Oxygen Toxicity: The risk of oxygen toxicity has been explained to me and will be minimized by never exposing me to greater pressure or longer times than are known to be safe for the body and its organs.
- Risk of Fire: With the use of oxygen in any form, I understand that there is an increased risk of fire, but strict precautions have been taken to prevent this, and all applicable codes have been complied with. There has never been a fire involving a patient in a Hospital-Based regulated Hyperbaric/Wound Center in the United States.
- Risk of Worsening Near-Sightedness (Myopia) After 20 or more treatments, especially if over 40, it is possible that I may experience a diminution in my ability to see things far away. I understand that this is believed to be temporary and that vision usually returns to its pretreatment level about six weeks after the cessation of therapy. I also understand that getting a new prescription for y glasses is not advisable until at least eight (8) weeks have passed after HBO treatment.
- Maturing or Ripening Cataracts: As an individual with cataracts, I understand that it has occasionally been demonstrated that there may be a maturing or ripening of the cataracts.
- Temporary Improvement in Far-Sightedness (Presbyopia) After 20 or more treatments, especially if over 40, there is a possibility that I may experience an improvement in my ability to see objects close by or to read without reading glasses. However, I understand that this is believed to be temporary, and my vision should return to its previous level of acuity in about six weeks following the cessation of therapy.
- Numb Fingers: I understand that a small proportion of our patients sometimes notice a numb feeling in the fourth and fifth fingers or the hands after 20 or more treatments. This should not be of concern and should disappear in about six weeks following the cessation of therapy.
- Ear Fluid: I understand that fluid found in the ears sometimes accumulates as a result of breathing high concentrations of oxygen. It may sometimes feel like a pillow over my ears. This disappears after treatment ceases and often can be eased with decongestants.
- Fatigue: Some people may subjectively feel fatigued following hyperbaric treatment, but this is not a consistent finding.

- Hypoglycemia: Hyperbaric oxygen treatment increases your metabolism, and this is why some diabetic patients may experience an episode of low blood sugar. Your technician will monitor your blood sugar prior to and after treatment. Should you feel any early symptoms of low blood sugar, notify your technician immediately.

If you have any questions or concerns after your daily Hyperbaric treatment, please call the center. If you have concerns or symptoms *after hours* that cannot wait until the center is open, we recommend you proceed to your nearest Emergency Room.

Call the center as soon as possible if you need to change or cancel your scheduled appointment. However, we strongly encourage you to take all treatments.

For HBO therapy to be effective, it must be provided five days a week. Hyperbaric therapy is much like antibiotic treatment because it only works when taken regularly for the time prescribed by your physician. Missed hyperbaric treatment will lead to failed healing, and the longer the wound remains open, the greater the risk of amputation or infection.

If there is anything we can do to assist you during this treatment process, please do not hesitate to let us know. Thank you for choosing our center. We look forward to helping you heal.