

## **FREQUENTLY ASKED QUESTIONS**

- **WHAT IS HYPERBARIC OXYGEN THERAPY (HBOT)?**

HBOT is a method of delivering oxygen at a greater pressure than we are under at sea level. The higher chamber pressure enables the inspired oxygen (either through ambient air giving 21% oxygen or concentrated oxygen giving 95-100% oxygen) to dissolve in your body much like pressure causes carbon dioxide to dissolve in carbonated drinks.

- **WHAT IS MILD HYPERBARIC OXYGEN THERAPY (HBOT)?**

Typically mild hyperbaric oxygen therapy represents a lower pressurized chamber, under 1.5 ATA and typically at 1.3 ATA. Most clinical research has been done on hyperbaric pressures of 1.5 ATA or greater. Lower pressures allow for greater safety and still can deliver much higher levels of tissue oxygenation.

- **DO I HAVE TO BREATHE 100% OXYGEN OR AMBIENT AIR?**

Traditionally, hyperbaric oxygen is defined as breathing 100% oxygen under pressure. However, ambient air still contains 21% oxygen, and when you breathe it under pressure, more oxygen will get transferred into the body. More importantly, the extra oxygen is in the blood plasma (liquid) and gets oxygen into areas much deeper areas (ie, where inflammation impedes blood flow) where red blood cells cannot get into. This is a great technique to get more oxygen into the body without the higher risks of pure or concentrated oxygen.

- **HOW LONG DOES EACH TREATMENT LAST?**

Treatments last a minimum of 60 minutes. Pressurizing the chamber takes 10-15 minutes (up to 25 min.). At the therapeutic depth you will receive a timed 60 minutes session (on average), after which we depressurize (for 10-12 minutes). Allow up to 2-hours for each treatment session.

- HOW DOES THE AIR IN THE CHAMBER STAY FRESH?

The chamber is pressurized with filtered outdoor air and is ventilated continuously.

- ARE THERE ANY SIDE EFFECTS TO HBOT?

Some clients may notice vision changes if they undergo long-term treatments. Visual acuity will return to its pre-treatment condition with 3 or 4 months after your treatments end. If you have cataracts there is a chance they could worsen.

- WHAT IS THE RECOMMENDED TREATMENT SCHEDULE?

Two sessions a day, with a 4-hour interval between the start of each session, are the norm. People who live nearby may choose to do one session daily. The end result is the same. The leading proponents of HBOT recommend a minimum of 20 treatments and preferably up to 40 in the initial schedule. After forty treatments, reevaluate your condition for discernible benefits before proceeding. The schedule you are assigned is your reservation.

- WHAT IF I MISS TREATMENTS DUE TO AN ILLNESS?

Sessions are non-transferable and non-refundable. We may be able to provide a caregiver to go in with your child or reschedule the missed sessions at the end of your booking. If not then we will include them with your next scheduled set of treatments.

- IS IT WARM INSIDE?

The air warms as we pressurize and cools as we depressurize. Ventilation keep the air moving when it is warm and blankets are available if you become cold.

- WHAT ABOUT SMOKING AND OTHER ODORS?

Smoke and other odours on your clothes are accentuated within the confines of the pressurized chamber. Try to minimize the detrimental effect of smoking on HBOT results by abstaining within 1-hour pre and post treatment. Please do not use strong scented perfumes or deodorants.

- THE CHAMBER

Our treatment unit is a mono-place hyperbaric chamber capable of accommodating 2 clients.

- PRESSURIZATION

As the chamber is being pressurized, air presses on your eardrums and pushes them inwards. This will be painful unless you equalize your ears to be able to reach the treatment depth. Please, signal or radio the attendant immediately if you have discomfort in your ears or sinuses. Don't wait until it really hurts. The operator will stop pressurizing and decrease the pressure until you equalize. When you're comfortable they will resume pressurizing. Our attendants are experienced at dealing with patients with special needs and are willing to work with you as required.

- EQUALIZING YOUR EARS

1. Techniques:

- Try to swallow; yawn or drink sips of water. Turn your head to one side and swallow, then turn to the other side and swallow. Repeat if necessary.
- The Valsalva Manoeuvre – Pinch your nose closed, close your mouth and lift the front-tip of your tongue towards the roof of your mouth. Attempt to blow through your pinched nose (short and sharp) but not too forcefully. This directs air from your throat into your ears and sinus air spaces.
- A third method combines these techniques: try swallowing and wiggling your jaw while blowing gently against your pinched nose. Now that's coordination.

1. Nasal Decongestants

- If you have a history of problems with the ear when flying or traveling in the mountains you may wish to use nasal decongestants before the first few treatments. With young children tilt their head back and put one drop of paediatric (baby) nose drops in each nostril one and a half to two hours before HBOT. Wait 5-10 min. and then put a second drop in each nostril. Use Afrin or a similar nasal spray 20-30 minutes after the nose drops. Do not repeat the nasal spray.

## 1. Pressure Equalization Tubes (P.E.T.)

- If you cannot equalize the pressure in your ears with any of the various manoeuvres or nasal decongestants, a physician can insert P.E.T. through your eardrums. This relatively painless, outpatient procedure has few complications and the tubes can remain in place during the course of your treatment.
- If you have P.E.T. Inserted, you must not get water in your ears. Use earplugs or apply a little water-based gel rather than petroleum jelly, to a small cotton ball and place it in your outer ear canal before washing or bathing.

- WHAT ARE THE RISKS, CONTRAINDICATIONS, AND AREAS OF CONCERN?

### CONTRAINDICATIONS

Absolute:

- Collapsed lung or Pneumothorax
- This is the only absolute contraindications and no person with suspected or diagnosed pneumothorax should go under hyperbaric pressure.

Relative:

- Asthma
- Current upper respiratory infections, chronic sinusitis or sinus problems
- Cataracts
- High fever
- Severe Emphysema or other breathing problem

### RISKS

#### • **Oxygen Toxicity**

The higher the pressure, the higher the oxygen %, and the longer the duration of the session, will all contribute to increasing the risk of oxygen toxicity to the Central Nervous System, (including Oxygen Toxicity Seizures) and the Pulmonary Lungs

(i) Central Nervous System Effects: Seizures occur rarely during treatment and are self-limiting. Seizures will cease when the client is removed from

breathing the pure Oxygen. Factors such as history of seizures, high temperature, acidosis and low blood sugar are taken into account before session is begun.

(ii) Pulmonary Oxygen toxicity may occur in clients who require supplemental Oxygen between treatments. This is very rarely seen.

#### • **Claustrophobia**

Some clients may suffer Claustrophobia. This is managed by maintaining communication, use of relaxation techniques and mild sedation, If necessary. If you have a problem with this condition please let us know.

#### • **Barotrauma or pain in the ears**

This is probably the most common concern but still only represents 10% of clients. Please be aware of clearing techniques that were previously mentioned, particularly if you experience problems when flying or are congested

#### • **RARE Changes in Vision and TEMPORARY**

This is when your vision gets a little worse (Myopia) or better (Presbyopia). Note these case are rare and associated with higher oxygen dosages. If you notice any changes, please let attendant know and don't worry as the vision tends to go back to its original state within 3 months from discontinuing the sessions. For that reason, it is not advised to change prescriptions during this time period

#### • **Cataracts**

Note, hyperbaric therapy has NOT shown to CAUSE cataracts. However, there have been a few reports of 'ripening' or 'maturing' of cataracts. If you already have a cataract, you may want to talk to your ophthalmologist before starting any sessions or you may want to evaluate based on a benefit/risk ratio. Note these case are rare and associated with higher oxygen dosages.

## **OTHER AREAS OF CONCERN INCLUDE**

- Asthma

Small airway hyper-reactivity may result in air trapping and damage to the lungs on ascent.

- Congenital spherocytosis

This is a condition in which the person has fragile red blood cells. Treatment may result in massive hemolysis

- Cisplatin

There is some evidence that this drug retards wound healing when combined with HBO.

- Disulphiram (Antabuse)

There is evidence to suggest that this drug blocks the production of superoxide dismutase. This may severely affect the body's ability to neutralize oxygen free radicals. Experimental evidence suggests that a single exposure to HBO is safe but that subsequent treatments may be unwise.

- Doxorubicin (Adriamycin)

This chemotherapeutic agent becomes increasingly toxic under pressure. Animal studies suggest at least a one-week break between last dose and first session of HBOT.

- Emphysema with CO<sub>2</sub> retention

We must exercise caution in giving high pressures + concentrations of oxygen to patients who may be existing on the hypoxic drive in order to continue breathing. People with emphysema may become apnoeic (have difficulty breathing) in the chamber and require emergency care. In addition, gas trapping and subsequent lung rupture can occur. This is also true for any condition that is associated with bullous formation in the lungs.

- High Fevers

High fevers (>38.5degC) tend to lower the seizure threshold due to O2 toxicity and may result in the delay of relatively routine therapy. If you decide to proceed with the session, then it would be advisable to speak to your doctor about attempting to lower your temperature with antipyretics and physical measures

- History of middle ear surgery or disorders

Please notify us of any ear problems, current or past. You should be able to clear your ears, or there is a risk of further injury.

- History of seizures

HBO therapy may lower the seizure threshold and some workers advocate increasing the baseline medication for such clients

- Optic Neuritis

There have been reports in clients with a history of optic neuritis of failing sight and even blindness after HBO therapy. This complaint would seem to be extremely rare but of tragic consequence.

- Pneumothorax

A pocket of trapped gas in the pleura will decrease in volume on compression and reexpand on surfacing during a cycle of HBO therapy. These changes may result in further lung damage and or arterial gas embolization. If there is a communication between lung and pneumothorax with a tension component, then a potentially dangerous situation exists as the pressure is lowered.

- Pregnancy

The fears that either retrolental fibroplasia or closure of the ductus arteriosus may result in the foetus whose mother undergoes HBO appear to be groundless from considerable Russian experience. However, we continue to exercise caution in the treatment of pregnant women, and HBOT will be done only on a case-by-case basis.

- Upper Respiratory Tract Infections

These are relative contra-indications due to the difficulty such you may have in clearing their ears and sinuses. Therefore sessions may be best postponed for a few days in such cases.

- Viral Infections

Many workers in the past have expressed concern that viral infections may be considerably worsened after HBOT. There have been no studies to give convincing evidence of this and no reported activation of herpetic lesions associated with HBOT. Others believe that HBOT can be helpful in eliminating viral infections

### **ITEMS ALLOWED INSIDE THE CHAMBER**

100% cotton clothing.

Eyeglasses (also contact lenses) and smooth gold rings.

Books or magazines

One plastic water bottle, pacifiers and plastic bottles for babies.

One toy made of 100% plastic without any metal parts.

### **ITEMS NOT ALLOWED INSIDE THE CHAMBER**

Shoes, watches, and synthetic garments such as nylon, rayon etc.

Vaseline, lipstick, hair spray, makeup, nail polish, skin lotion, glycerin's, deodorants and the like.

Cigarettes, lighters, matches and other combustibles.

Newspaper, loose-leaf paper or other paper materials.

Jewellery such as earrings, necklaces, rings and any other sharp objects.

Hearing aids and any other electronic devices not designed for HBOT use.

## **SAFETY ISSUES RELATED TO HYPERBARIC OXYGEN THERAPY**

Most mono-place chambers are pressurized with pure oxygen. Oil, fuel and sparks are very hazardous in an oxygen rich environment. That is why there are rules about clothing, jewellery and personal care products.

Our chamber is pressurized with air, not pure oxygen. Despite this fact, we take all the precautions used for mono-place chamber, in order to maintain the highest possible safety standards.

If there is an unscheduled event or a personal medical emergency please follow the lead of the operator. They will advise provide basic life support as required. The operator will depressurize the chamber and call 999 to access the local Emergency Medical Services.

There are some limitations on access to the chamber by non-ambulatory patients. We do provide assistance with lifts and carries into the chamber, but the weight and mobility of the client needs to be considered before booking sessions.

Thank you for entrusting us with your care. We all do our best to provide you with a pleasant and professional atmosphere. We sincerely appreciate the efforts that you make to maintain positive attitudes.

**\*\*Please ask your hyperbaric assistant for advice on any other items.**