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Hyperbaric Oxygen Therapy

There are two ways of increasing the pressure inside a hyperbaric chamber.

Hyperbaric oxygen therapy consists of breathing 100% oxygen while inside a therapy chamber. The chamber is compressed to a pressure higher than you are breathing now and can increase oxygen levels in your body up to 15 times.



Health Canada approved hyperbaric oxygen chamber

Hyperbaric chambers range in size and operational principles. Smaller units provide individualized therapy whereas larger hospital settings can treat a dozen or more patients simultaneously.

Hyperbaric chambers require Health Canada Medical Device License.

Oxygen flow through chambers

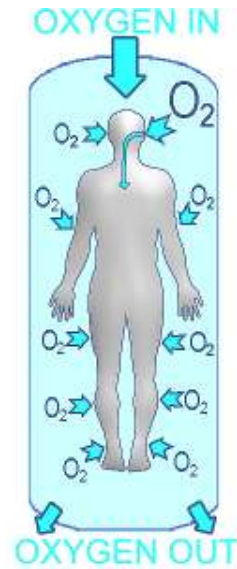
Compressing a hyperbaric chamber with pure medical-grade oxygen provides the most efficient, safe and comfortable treatment. Oxygen flows through the chamber at a rate of up to 500 liters/min.

Continuously replenishing the inside atmosphere assures a clean oxygen environment with a well controlled temperature.

Oxygen is absorbed through both lungs and skin for maximum therapy efficiency. This can reduce the overall number of therapy sessions required.

The most comfortable oxygen flow-through chambers are made of special clear acrylic glass allowing full view of your surroundings. These are ideal for people having issues with confinement anxiety.

In oxygen filled chambers nitrogen is eliminated and there is no risk of decompression sickness when the therapy ends.



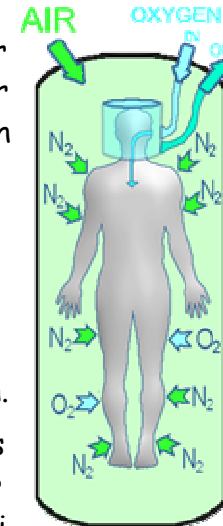
Air compressed chambers

Alternatively, the chamber can be compressed with air and oxygen inhaled through a mask or a hood.

Oxygen is now absorbed almost exclusively through the lungs while the skin is exposed to excessive high concentrations of nitrogen. The "oxygen therapy" does not start until the mask or hood is applied with a sufficient oxygen flow (>15 l/min).

Breathing compressed air inside the chamber exposes the patient to undesirably high concentrations of nitrogen effectively diluting the oxygen therapy.

Furthermore, the constant nitrogen exposure to the skin makes the air filled chambers less efficient than the oxygen chambers. The total therapy time is therefore usually longer and more sessions are needed to achieve results comparable to the oxygen chamber.



Air compressed chambers come in a variety of sizes and shapes with larger "multiplace" chambers being the hospital standard.

They allow for specially trained health care professionals to attend patients inside the chamber.



Multiplace chamber with nurse attendant inside

As the air inside the chamber is compressed the environment becomes warm and humid with a potential risk of bacterial buildup and patient cross contamination. This mandates strict chamber cleaning procedures and careful screening of the patients.

Reducing the air pressure at the end of therapy has to be done carefully to minimize the risk of developing decompression sickness.

BaroMedical is a specialized oxygen therapy centre. It operates oxygen filled chambers to provide fast, safe and economical oxygen solution for your health care.



Hyperbaric oxygen chamber at BaroMedical



www.BaroMedical.ca

7850 Sixth Street Ph: 604 - 777-7055
Burnaby BC V3N 3N3 Fx: 604 - 777-7044

Operational License by



Medical Device License by



buyers beware

Comparing therapy options

Three factors determine the efficiency of oxygen therapy:

1. **Duration** of oxygen exposure
2. **Pressure** inside the chamber
3. **Frequency** of therapy

Research in hyperbaric medicine is generally performed with **90 min** of oxygen exposure at pressures ranging from **2.0 to 3.0 atmospheres (29 to 41 psi)**. Therapeutic momentum is maintained with **daily** sessions.

Therapy sessions in air filled chambers are longer (approximately 2 hours) to include non-oxygen breathing periods during compression and decompression.

Air compressed chambers use less oxygen and are mechanically more complex given the requirement of external air compressors, backup units, air storage and safety systems.

Furthermore, it is crucial for air chamber installations to have a clean air supply and oil-free compressors to deliver the pressure. Any pollutant in the air intake will be magnified by the higher pressure inside the chamber.

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When looking for hyperbaric services ask questions about equipment certifications, treatment protocols and personnel training.

- Health Canada requires a **Medical Device License** on all therapeutic equipment distributed in Canada. Very few chamber types are approved (see www.mdall.ca and search for hyperbaric)
- Academically accepted **therapy pressure** ranges from 2.0 to 3.0 atmospheres of pure oxygen (29 to 41 psi).
Small soft-shell inflatable bags designed for treatment of altitude sickness but marketed as "hyperbaric chambers" are generally **incapable** of operating at pressures above 1.3 to 1.4 atmospheres.
- **Therapy time** counts only during oxygen exposure. Breathing air under pressure will dilute the effect of oxygen and increase the amount of absorbed nitrogen.
- Effective therapy requires **daily** sessions to initiate the body's own healing response.

Our team of health care professionals is dedicated to your safety, comfort and health !

Hyperbaric technology

Nuts and bolts of hyperbaric oxygen therapy

