

may then rest, sleep, read, or listen to the radio while breathing through your mouth (See above).

**Decompression:** The attendant will let you know through the PA System when the treatment is complete and the pressure will be lowered slowly, again at a rate comfortable to your ears.

**Note:** The chamber can actually be decompressed at any time and whilst breathing oxygen, you cannot suffer decompression sickness ('the bends').

### How long do treatments last and how often will I be having it?

Your doctor's permission is always required before commencing Hyperbaric Oxygen Therapy. The sessions last just over an hour and are usually repeated on a weekly basis, or as prescribed.

### Are there any side-effects?

At the dosage used in this treatment there are no side effects from the oxygen. However, the change in pressure may cause some ear or sinus discomfort. It is not recommended to proceed with treatment if you have an upper respiratory tract infection or have a temperature. Patients who are diabetic must follow their doctor's advice before commencing treatment.

Total contraindications to treatment are if you are taking the following medications.

- Doxorubicin (Adriamycin) -  
A chemotherapeutic drug.
- Disulfiram (Antabuse) -  
Used in the treatment of alcoholism.
- Cis-platinum -  
A cancer drug.

- Mafenide Acetate (Sulfamylon) -  
Suppresses bacterial infections in burn wounds

### Any other questions?

High Dosage Oxygen Therapy is a pleasant experience, but we are all claustrophobic to some extent so if you feel some slight apprehension, don't worry, because this is normal. The chamber attendant is always on hand to offer reassurance and answer any questions you might have and put your fears to rest.

Further information can be obtained from: Hyperbaric Hospital Treatment Trust <http://www.hyperbaricoxygentherapy.org.uk>

Medical information for medical practitioners, GP's etc can be obtained from:

Honorary Medical Adviser, Dr Philip James,  
Emeritus Professor of Medicine, University of Dundee.  
Consultant in Hyperbaric Medicine

Or via email or phone to  
Petra Kliempt,  
Hon NHS Specialist Trainer in  
Hyperbaric Medicine  
Email: [pkliempt@btconnect.com](mailto:pkliempt@btconnect.com)  
Phone: 0044 844 888 7990

### Centre Details:

Phone: 071 – 9144748  
Fax: 071 – 9141943  
Email: [info.mstherapy@gmail.com](mailto:info.mstherapy@gmail.com)  
Website: [www.mstherapycentre.ie](http://www.mstherapycentre.ie)

Charitable Reg. No. 10323 N

# HYPERBARIC OXYGEN THERAPY

## INFORMATION LEAFLET

MS North West Therapy Centre  
Ballytivnan, Sligo



## What is Hyperbaric Oxygen Therapy?

Hyperbaric Oxygen Treatment (HBOT) involves breathing pure oxygen at higher than atmospheric pressures in an enclosed chamber. This process causes oxygen to be absorbed by all body fluids and by all body cells and tissues, even those with blocked or reduced flow. This increased flow of oxygen stimulates and restores function to damaged cells and organs, including those of the liver and brain.

## How will breathing more oxygen help?

The air that we breathe usually provides enough oxygen for both normal body metabolism and repair to tissue damage after injury or illness. However increasing the pressure in a hyperbaric chamber and using 100% oxygen can allow a very significant increase in the amount of oxygen dissolved in the bloodstream. This is in addition to the oxygen carried by haemoglobin. Normally the amount carried dissolved in plasma is about 0.3 ml per 100 ml of blood. At twice atmospheric pressure (2 ata) breathing 100% oxygen this increases to 3 ml oxygen in 100ml of blood. The increased concentration means that the gradient for the transport of free oxygen from blood into the tissues is increased 10 fold.

When tissues are damaged the capillaries within the tissues are also damaged which increases the distances for oxygen to diffuse. This can lead to a severe oxygen deficit in the tissues even when the amount of oxygen carried in the blood is normal. The object of using the increase in pressure and oxygen concentration is to raise tissue oxygen values towards normal to initiate normal cellular repair mechanisms. In fact

oxygen, like glucose and water is an essential substrate.

## How does it work?

Oxygen is dissolved in the blood and transported, in combination with haemoglobin in the red blood cells, throughout the body. This dissolved oxygen passes into the tissues. Breathing high levels of oxygen under hyperbaric conditions causes greater uptake of oxygen by the bodily fluids and so more can reach areas where the circulation is diminished or blocked and therefore improve recovery. The extra oxygen has additional benefits as it greatly enhances the ability of white blood cells to kill bacteria. It also reduces swelling and allows new blood vessels to grow more rapidly into the affected areas. It has been shown in various medical studies that Hyperbaric Oxygen is useful in the treatment of chronic multiple sclerosis. See Fischer BH, Marks M, Reich T. Hyperbaric-oxygen treatment of multiple sclerosis: a randomised, placebo-controlled, double-blind study. N Engl J Med, 1983, 308:181-6.

## Please explain the treatment.

This is a simple, non-invasive and painless treatment which most patients find pleasurable and relaxing. You will be treated in a comfortable purpose built chamber which has place for 6 patients. You will be fitted with a mask which goes over your mouth and nose and is connected to the oxygen supply. You will be instructed that when the pressure increases in the chamber, to take two or three good deep breaths through your mouth, then breathe normally for a few minutes then take another

few good deep breaths through your mouth and to continue in this way throughout the session. As soon as the pressure increases in the chamber, you will need to start making your ears 'pop'. There are several ways to do this, and the chamber attendant will help you to discover the method that best suits you. Usually the easiest way to clear the ears is to blow through your nose whilst holding it and the mouth closed. Some find that swallowing is also successful.

Alternatively you can try moving your lower jaw from side to side then in-and-out. It is helpful to have a small drink of water just prior to the session to moisten the throat. Please wear comfortable clothing and leave your watch and mobile phone outside. No smoking materials, matches or lighters are allowed in the chamber.

Remember that the chamber attendant is outside the chamber at all times and is in contact with the patients by a PA System. She can also see them through the glass window. If you are experiencing any discomfort, it is very important to indicate that you need assistance at once.

The treatment session is in three phases:

**Compression:** After the door is closed, there will be some noise as the pressure increases. It will get warmer and you will feel 'fullness' in your ears like descending in an aeroplane. You will have been taught how to avoid discomfort by clearing or 'equalising' your ears (see above). If you develop any discomfort inform the attendant and the rate of compression will be reduced. There may be a few unusual noises, but they can be ignored.

**Treatment:** The treatment begins when the pressure reaches the prescribed level. You