Emergency Care

INFORMATION FOR THE PATIENT

The hyperbaric oxygen chamber

olv Top in Zorg.

1. What is hyperbaric oxygen therapy?

Hyperbaric oxygen therapy is a medical treatment in which patients breathe 100% pure oxygen in a room with increased ambient pressure.

Hyperbaric means 'at a higher pressure'. Hyperbaric oxygen therapy is therefore the inhalation of pure oxygen at a higher pressure.

2. Who qualifies for this therapy?

- People with a CO-intoxication
- Patients with hearing loss
- People with gas embolism (an air bubble in the blood stream) Gasembool (luchtbel in bloedbaan)
- People with lesions as a result of radiotherapy
- Gangreen patients
- People with the Cush syndrome

3. The hyperbaric chamber

Hyperbaric oxygen therapy takes place in an enclosed space called a hyperbaric oxygen chamber or “caisson”. It is a tubular chamber (which looks a bit like a submarine) and has 8 seats. People also have either the possibility to set or to lie down in the pressure chamber. The entrance to the chamber has a large round door through which people enter. In most cases, you are not the only patient in the chamber. In the caisson itself, there is also a shaft through which assistants or emergency workers can enter or leave the chamber. Next to the hyperbaric oxygen chamber is sophisticated equipment enabling an operator to control the process and the situation inside the chamber. The operator outside the cabin can hear and see everything during the session so that he can intervene immediately when necessary.

4. How does the treatment proceed?

4.1 BEFORE the start of the first treatment session

- Upon your arrival for the first treatment, the secretariat staff will register you for the hyperbaric oxygen therapy. If you have to go through several sessions, you will receive a continuous number (valid for 3 months). From the second treatment onwards, it is therefore not necessary to register again.
- A nurse from the emergency department will screen you for the hyperbaric therapy and will go over a few questions with you.
- Basic parameters such as blood pressure, heart rhythm and body temperature will be checked.
- The nurse will also explain how to carry out the treatment correctly. How to put on the oxygen mask. How to balance your ears (the 'clearing' of the ears)? How to raise the alarm in the event of problems?

4.2 BEFORE each treatment session

- If you are a diabetic patient, your glycerine level will be checked before each treatment session.

4.3 DURING each treatment session

- During the first treatment session, you will always be accompanied by a nurse. Once all patients are seated, the door is closed and the pressure gradually increases. This process takes about 15 minutes. During this phase, you should always be able to clear your ears. The temperature in the room will rise, this is perfectly normal. If you have any problems clearing your ears please report this to the supervising nurse – or to the operator in the case of an unaccompanied session.

- You will then receive a message that you may put on the mask. Make sure that your mask fits properly and that no air can escape. If in doubt, ask the accompanying nurse for help.
- During the treatment, when everyone is comfortably settled, the accompanying nurse can leave the room via the airlock. In the event of problems, a nurse will be able to re-enter the cabin via this airlock.
- During the session, the operator will have a continuous camera view of the cabin. An intercom system allows communication between the patients and the operator.
- After 70 minutes with the mask on the face, the operator will ask you to remove the mask and we will gradually come to a normal ambient pressure. During this phase, the temperature will drop, which is perfectly normal.
- When the pressure has returned to normal, the operator will open the door and the session will end. Please remain seated until the door is opened.

5. Your experience in the hyperbaric oxygen chamber

5.1 Increasing/decreasing the ambient temperature

An increase in pressure always results in an increase in ambient temperature. During the decompression phase, the temperature will drop. These processes are perfectly normal. However, you should bear in mind that it can get up to 5°C warmer (when the pressure increases) or colder (when the pressure decreases). During the phase when the mask must be put on, the temperature will stabilise again. Provide clothing that is easy to put on and take off (e.g. a pullover or a wastcoat). Please do not wear nylon stockings or other synthetic materials.

5.2 Increasing/decreasing the ambient pressure

The increase in ambient pressure can be felt in the ears (eardrums). It is comparable to the feeling you may have in an aeroplane when taking off or landing. Clearing the ears ensures that this does not have to be painful and that the pressure in the middle and outer ear becomes equal. If you do not clear your ears, or if you do it too late, you may experience pain in the ears. Please notify the attendant immediately if you are unable to clear your ears. If necessary, we will stop the pressure increase for a while. Do not wait until you get pain! This can cause damage to the ear.

During the reduction of the pressure you will hear your ears 'popping'. This is completely normal. You should not take any special action during the pressure reduction.

5.3 Clearing the ears

Our middle ear is closed off from the outside by an eardrum. The eardrum is connected to the pharynx via a small canal (the Eustachian tube). When the ambient pressure increases, the eardrum is pressed inwards, causing pain. This pain will only disappear by increasing the pressure in the middle ear. This is how you do it:

- Swallowing, yawning, chewing: You can compensate the pressure difference between the middle and outer ear by swallowing, yawning or chewing.

- The Valsalva manoeuvre: You perform the Valsalva manoeuvre by pinching your nose, closing your mouth and blowing. It is best compared to blowing your nose, when you have a cold, while pinching your nose. If you do this correctly, you will feel your eardrum clicking. Be careful not to force it. The Valsave manoeuvre opens the Eustachian tube, it enables air to enter into the middle ear and it pushes the eardrum back out.

6. Duration of the treatment

In normal circumstances, the following schedule is given during treatment:

- Increase in pressure for 15 minutes to 2.5 bar
- 100% oxygen treatment via mask, during 70 minutes
- Decrease of pressure to 1 bar during 10 minutes

A regular session therefore lasts approximately 1:35 hour. We therefore ask you to go to the toilet before the start of the session.

The number of treatments you need depends on the pathology and the effect of the therapy. This will be specified by your specialist in consultation with the emergency doctor.

During the treatment you can read or listen to music. Talking to an attendant or to fellow patients is only allowed when you are not wearing your mask. You may drink in the caisson, but preferably not eat. There is always water available in the cabin.

7. Objections to the treatment

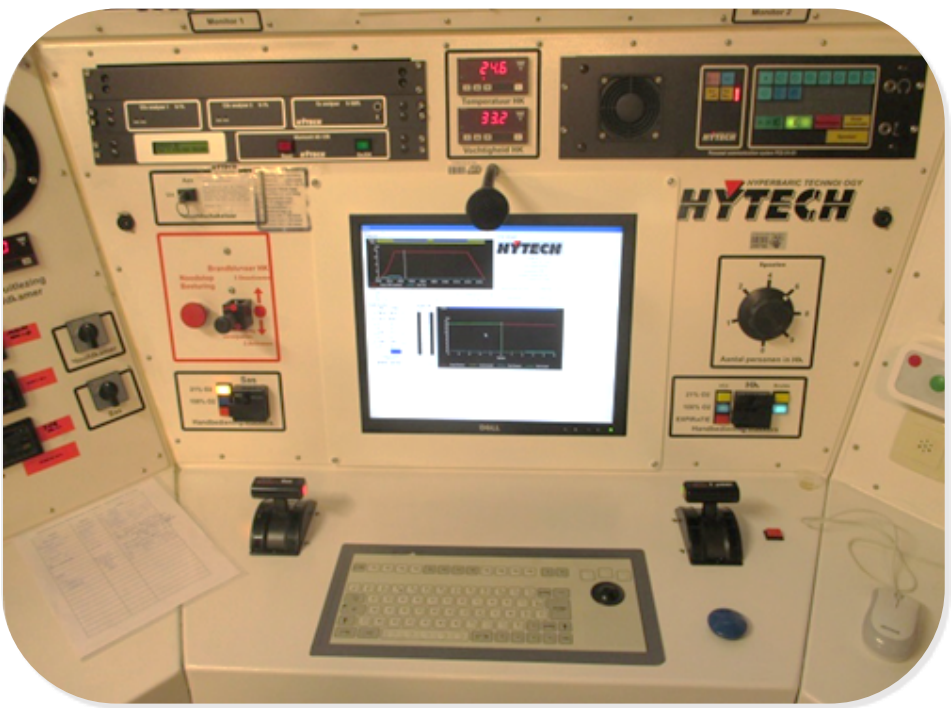
Be sure to inform the nurse if you have a cold. The pressure increase in the cabin may cause you more discomfort at these times.

In a number of conditions, hyperbaric oxygen therapy may not be appropriate. The benefits and risks must then be weighed against each other. The doctor in charge of emergency cases will discuss this with you.

You must inform the doctor and nurse of the following conditions:

- Pneumothorax (collapsed lung)
- Cold
- Chronic pneumonia
- Ear surgery
- History of epilepsy (convulsions)
- Pregnancy
- Chemotherapy

If you have recently travelled by air or have a planned air journey in connection with the therapy, this MUST be reported to the person in charge of the caisson.



8. Safety precautions

The differences in pressure can cause problems with various objects. These objects should therefore be kept out of the cabin:

- Nylon and silk clothing (static electricity)
- Lighters, matches and smoking materials
- All objects with a battery (e.g. MP3 player, mobile phone, laptop, car keys...)
- Hearing aids
- Ballpoints (pencil is allowed)
- Watches
- Carbonated drinks or alcoholic drinks (flat water is allowed)

9. Practicalities: where and when do the treatments take place?

The hyperbaric oxygen cabin is attached to the emergency department of the OLV Hospital in Aalst. In regular circumstances, there is a treatment session every working day around 2 p.m. In exceptional cases, this schedule may be changed (multiple sessions, emergencies...). You will be informed by phone.

At the time of your first treatment session, you will be registered as a patient for the emergency care unit. You will receive a so-called "continuous number" that remains valid for 3 months. From the second treatment session onwards, you no longer need to register. You can go straight to the waiting room.

We recommend to plan your sessions consecutively as much as possible in order to obtain an optimal therapy.

If you cannot attend an appointment for whatever reason, you should notify the hyperbaric oxygen therapy service in advance, by calling the telephone number **053/72 40 62**.

If you have any further questions, you can always contact your attending physician or the emergency care department at telephone number 053/72 42 48.

10. Patient Service Point

Each time you undergo a hyperbaric therapy session, you will be charged a medical consultation. If you have any questions about the cost price and the reimbursement by insurances or mutualities, we would like to refer you to the Patients Service Point of the OLV Hospital.

You will find the colleagues of the Patient Service Point near the reception desk in the entrance hall. They are available every weekday between 8:30 a.m. and 3:30 .pm. You can also contact the Patient Service Point by telephone on 053/72 41 49 or by e-mail: psp@olvz-aalst.be.

Contact details

Campus Aalst

Moorselbaan 164 – 9300 Aalst - Belgium

How to contact us?

- By phone: 0032-53-72 40 62
- By fax: 0032-53-72 45 94

Version 11 September 2020
Approved by Dr. Geert Vandenbroucke and Dr. Jan Verbeke