

Elective Hyperbaric Therapy



UHN

Patient Information Brochure



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Author: Dr. A.W. Evans and Ray Janisse, RRT, CHT, Practice Leader

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What is hyperbaric oxygen therapy?

Hyperbaric oxygen therapy (HBO) is the use of 100% oxygen at increased atmospheric pressure. HBO was developed to treat victims of diving accidents. We now use it for other medical and surgical problems.

University Health Network offers hyperbaric therapy at Toronto General Hospital. We operate 2 different types of chambers – 1 large multi-person rectangular hyperbaric chamber and 2 single person hyperbaric chambers. We have delivered over 18,000 HBO treatments.

We use our multiplace chamber for patients who require hyperbaric oxygen therapy urgently. We use our monoplace chambers when we have time to plan a patient's whole treatment.



When do we use hyperbaric oxygen therapy?

Hyperbaric oxygen therapy can help for different types of conditions. Some examples are:

1. “The bends” – This happens to deep water divers who suffer from decompression sickness
2. Cerebral arterial gas embolism
3. Carbon monoxide poisoning
4. Delayed radiation injuries (soft tissue radionecrosis or osteoradionecrosis)
5. Osteomyelitis (refractory)
6. Compromised skin grafts or flaps and re-anastomosed digits
7. Gas Gangrene
8. Compromised wounds
9. Acute cerebral edema
10. Cyanide toxicity
11. Thermal Burns
12. Acute blood loss (Anemia)

What is a hyperbaric chamber?

A hyperbaric chamber is a specially designed room or cylinder that is made of metal or acrylic. Built to handle increased pressure, we use the chamber to give patients hyperbaric oxygen therapy.

When you come for a booked hyperbaric therapy appointment, we may use our one person (monoplace) chamber. We monitor you during your whole treatment.

- There is a communication system that allows you and the hyperbaric staff to talk.
- You will lie down for your treatment and you can see out the clear window in the chamber.
- To keep you comfortable during your treatment, you may enjoy watching a movie, the television or listening to music.

How does hyperbaric oxygen therapy work?

At sea level, the atmosphere exerts pressure at approximately 14.7 pounds per square inch (psig) or 101.3 Kpa. We call this *1 atmosphere absolute* (ATA). We use 100% oxygen at 2 - 3 ATA of pressure during your treatment. This increased pressure helps get more oxygen to your tissues (There is more oxygen for you to breathe in and more pressure pushing that oxygen into your tissues).

How do I receive oxygen?

The monoplace chambers are pressurized with oxygen. So, just by being in the chamber and breathing in and out, you will receive extra oxygen. We give you air breaks from the oxygen through a mask at the beginning, middle, and end of your treatment.

Who gives me my hyperbaric treatment?

Our hyperbaric department has Registered Respiratory Therapists, Registered Nurses and other certified hyperbaric trained staff who give you your hyperbaric treatment. The medical director and all staff physicians for the unit are from the Department of Anaesthesia. All physicians working within the hyperbaric unit have been trained regarding the use of Hyperbaric medicine.

How should I prepare for my treatment?

To be prepared for your treatment, please do the following:

- Read the patient agreement below. Ask us if you have questions.
- Follow the safety precautions listed in the next section. This will keep you safe during your treatment.
- Try to stop smoking. This will give you the most benefit from your treatment.
- Talk to the hyperbaric staff if you have questions or concerns.



Patient Agreement

We use hyperbaric oxygen therapy for patients with many different health issues and medical complications. To serve the largest number of patients as possible, we need your assistance and cooperation.

- **Please read the following** to understand how we provide services.
- If you have questions, please call the hyperbaric unit at (416) 340 4131.

1. Arrival for appointments

Please arrive **30 minutes** before your scheduled treatment time. The chart below gives you more details of the time we need you to be here.

This gives us time to:

- help you change your clothes
- check your temperature, blood pressure, heart rate, blood sugar and breathing if required
- give you medications if indicated, and
- finish getting you ready for your treatment.

If your appointment is at:	Please arrive by:
<input type="checkbox"/> 8:00 a.m.	<input type="checkbox"/> 07:30 a.m.
<input type="checkbox"/> 10:00 a.m.	<input type="checkbox"/> 09:30 a.m.
<input type="checkbox"/> 1:00 p.m.	<input type="checkbox"/> 12-30 p.m.

Please note:

If you are late for your appointment, we may need to reduce or cancel treatments so we appreciate your effort to be on time.

If you need special assistance to get to your hyperbaric appointments, please add extra time before and after your scheduled appointment. This may be difficult for you but it will ensure that we are able to give you your full treatment.

2. Treatment time

- On your treatment day, please be prepared to spend a **minimum of 3 hours** in the hyperbaric department.
- Your actual treatment time in the chamber will be approximately 2 hours. The other hour is for preparation and after care.
- We try to plan your appointment time to best meet your needs. Please let us know if you have specific requests.
- When you start on hyperbaric Oxygen therapy, your appointment time may be inconvenient for you. If a more convenient time



becomes available, we will change your appointment to meet your needs.

Please note: Sometimes emergencies and other patient needs make it necessary for us to **change your treatment time**. We apologize for this inconvenience and will work to minimize any disruption this may cause in your day.

3. Managing your care

Most of our patients have complex medical issues. You may have several specialists taking care of you. We do our best to work as a team to give you the best care possible. We may need to speak to one or more of your health care providers. Please help us do that by telling us:

- The names of any new doctors or therapists who are caring for you
- The telephone numbers or other contact information for these healthcare providers.

How to prepare each day for your treatment

There are several safety precautions that we ask you to follow during your treatment.

- Wear 100% cotton underwear
- Use the special clothing and footwear that we give you
- Take your bra off
- Inform us if you are wearing any medication patches. (Nicotine, Nitroglycerin, pain relief)

On the day of your treatment, do not wear:

- Any make-up including lipstick or eyeliner
- Body lotion or oil
- Perfume
- Hairspray, hair mousse or gel
- Any kind of jewelry including watches, rings or earrings
- Nylon stockings
- Therma-care heat wraps or hand warmers

The following items are not permitted INSIDE the Hyperbaric Chamber:

- Electronic devices such as a walkman
- Cameras
- Metal objects
- Batteries
- Cigarettes, matches or lighters
- Car keys
- Hearing aids
- Therma-care heat wraps or hand warmers
- Newspapers or books*



Our patient entertainment system allows you to watch television, listen to music or watch one of our many movies we have in our department.

*Please ask your caregiver if you may bring books or magazines.

We do allow patients to bring these if they are having treatment in our multiplace chamber.

How often are my treatments?

We create your treatment plan based on your medical condition.

- Most patients have treatment once per day, 5 days per week for 6 to 8 weeks (Mon-Fri)
- Treatment time is approximately 2 hours
- After reviewing your medical condition, we will discuss what treatment plan is best for you.
- Our hyperbaric physician will explain the purpose and expected results of your hyperbaric oxygen therapy.
- Then we will give you a schedule with your appointments.

Do the changes in pressure cause pain or discomfort?

During compression (when we increase the pressure), you will feel fullness in your ears. It will be like coming down in an elevator or landing in an airplane. You will feel this only at the start of your treatment.

Before you start your treatment, we will explain how to “clear” your ears. If you are unable to clear your ears, we may send you to an Ear, Nose and Throat specialist. This specialist can do a minor surgical procedure called a myringotomy. This will stop pressure build-up in your ears.

If you feel pain or have difficulty clearing your ears during your treatment, tell your attendant **immediately**. The attendant will stop your treatment and help you to equalize the pressure in your ears.

During your treatment, we gradually increase the pressure inside the chamber (This is called **pressurization**). During this time, it may get warmer inside the chamber. Once the treatment pressure is reached, the temperature will return to a normal 22 degrees Celsius.

As the pressure in the chamber decreases (depressurization), you may feel a “popping” sensation in your ears. This ear “popping” is normal. It sounds like rice krispies and feels a bit odd. It does not hurt. Please continue to breathe normally. Pressure equalization in your ears will happen without you doing anything special.

The air in the chamber may feel cool during depressurization. It may become “misty” because of humidity in the air.



Sometimes, patients receiving daily hyperbaric treatments develop temporary changes in their eyesight. These are usually minor. If this happens to you, your vision will commonly return to the pre-treatment level within 4 - 8 weeks after you finish your treatment.

Smoking

You may not smoke during the entire time that you are having hyperbaric treatment. Smoking decreases oxygen delivery to your tissues. When you smoke, the nicotine in the cigarette causes your small arteries to close or narrow. This makes it impossible for blood to get to the tissues that need to heal. If blood does not get there, the oxygen does not get there. Even after smoking 1 cigarette, these small blood vessels can stay closed or narrowed for several hours.

For the majority of our patients, hyperbaric therapy is used to create new blood vessel growth in areas that have poor circulation. We need to keep these vessels open. The nicotine from smoking works against this. That is why we say: **No smoking!**

If you are a long-term smoker, there are treatment options to help you stop smoking. Ask one of your healthcare team for information.

Diet

Good nutrition is important for wound healing. Follow Canada's Food guide to eat a balanced diet.

Do not eat or drink anything with caffeine (e.g. coffee, tea, carbonated beverages, Tylenol with codeine, chocolate).

Caffeine affects how much oxygen that your blood can carry and has similar negative effects as smoking on blood vessels. If you cannot stop eating or drinking foods with caffeine, please do not have any for 2 hours before and 2 hours after your treatment.

Please tell us if you are diabetic.

Please let us know if you are on insulin (insulin dependent) or not (non-insulin dependent).

Hyperbaric oxygen treatment may drop your blood sugar.

To have your treatment, your blood glucose reading must be a minimum of **10mmol/L**. By changing your eating plan or your medications, we can control this.

- During your treatment, we may give you a calorie supplement, for example, we will give you juice to drink
- We will also do glucose level checks with a glucometer before and after your treatment.



- We may ask that you decrease your morning diabetic medication or wait to take it until after your treatment for the day is done.

Medications

Please tell the hyperbaric physicians what medications you are taking. There are some medications that you cannot take during your hyperbaric therapy. We will work with you to deal with this.

If you are on a medication and you need to take it during your treatment time, please bring it to your appointment. We will make arrangements for you to take it before or after your treatment.

Illnesses

If you get sick with a cold, flu, or sinus problem, you may **not** be able to clear your ears during pressure changes in the chamber. Please call the Hyperbaric Unit. Talk with our staff. We may need to cancel your treatments until you are feeling better.

Visitors in the Hyperbaric Unit

Visitors are not allowed in the Hyperbaric Unit treatment areas. During your treatment, your family or friends may wait in the hyperbaric unit waiting area. If a member of your family would like to see the Hyperbaric Unit, speak to one of our staff. We may be able to make arrangements for this.

Following completion of your treatment, normal tissue growth which may have been stimulated over your course of treatment is likely to continue. New tissue growth may be very fragile and care must be taken to protect this for several months. Your follow-up visits provide an opportunity to determine the nature of this and how much ongoing accommodation and protection is needed.

Our location and contact information:

Hyperbaric Medicine Unit

Ground Floor, Clinical Services Building

200 Elizabeth St., Room 405

Toronto, ON M5G 2C4

Telephone: (416) 340-4131

Fax: (416) 340-4481



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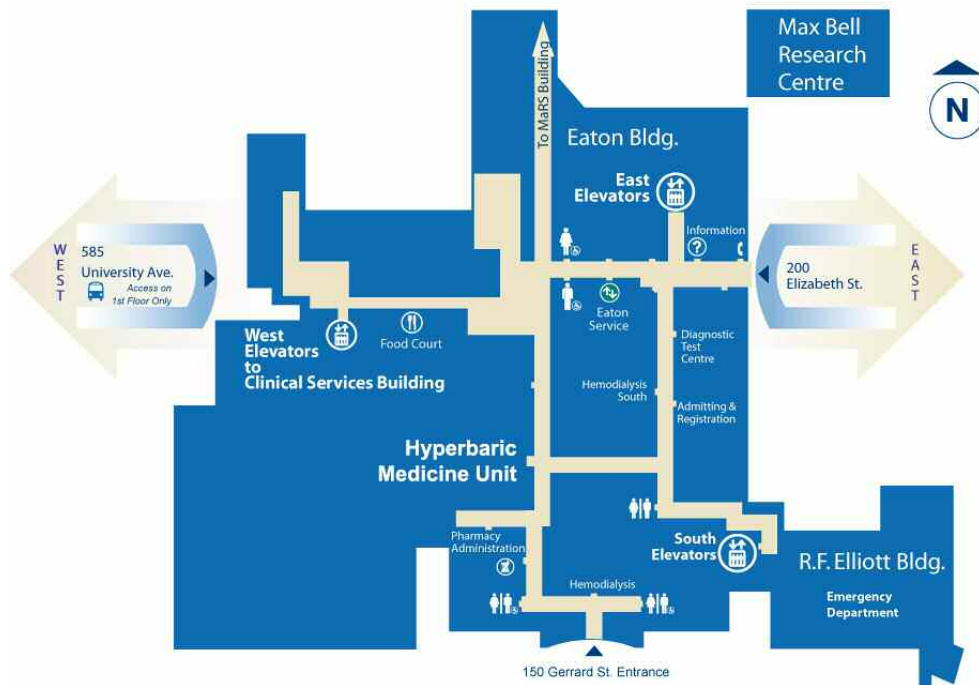
Toronto General Hospital Toronto Western Hospital Princess Margaret Hospital

Directions

From Elizabeth Street: You will be in the **Eaton Building**. Walk past the Information Desk toward the food court. At the food court intersection, turn left, and follow the signs to the Hyperbaric Medicine Unit. We are located just down the hall, Room 405.

From Gerrard Street: You will be in the Gerrard Building. Walk past the information desk down the hall to your left. Look for the sign Hyperbaric Medicine, Room 405.

Toronto General Hospital, Ground Floor



Closest Subway

- The nearest subway entrances are the College Station at Yonge and College Streets or Queen's Park at University Avenue and College Street.
- From either station you can walk to College and Elizabeth Street (one street east of Queen's Park station or 2 streets west of College station).
- Turn south on Elizabeth Street and walk about half a block until you reach the Eaton Wing.

Parking

- Parking is available at the Toronto General parking lot on Elizabeth Street, across the street from the Eaton Building.