

Hyperbaric Chambers and Oxygen Therapy



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What Is Hyperbaric Oxygen Therapy? Hyperbaric Oxygen Therapy Benefits

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8 min read

The air we breathe may look and feel empty, but it's actually made of tiny gas molecules. These molecules come in many types, but you're very familiar with at least one major kind: oxygen, which we need to breathe.

Oxygen normally makes up 21% of the air around you. But if you're hurt or sick, you might need more than that. Depending on your condition, your doctor might suggest spending time in a hyperbaric chamber. That's an enclosed space where you can breathe 100% pure oxygen.

What is a hyperbaric chamber used for?

A hyperbaric chamber is used in hyperbaric oxygen therapy (HBOT). That's a medical treatment that increases the amount of oxygen in your blood.

Types of hyperbaric chambers

There are two types of hyperbaric chambers:

Individual (monoplace). This chamber is meant to treat one person at a time. It's a long tube or pod, sort of like an MRI machine. You'll lie on a table that slides into the chamber. Once you're secure, the machine will slowly start filling with oxygen.

Multiperson (multiplace). This chamber is a room where multiple people can get HBOT at the same time. You'll wear an oxygen mask or a clear, lightweight hood that flows with oxygen.

Even though they look different, the treatment is the same.

Hyperbaric chamber cost

In the U.S, a hyperbaric chamber treatment session can cost anywhere from \$200 to \$1,250. Most insurers cover this type of therapy when used for approved conditions.

What Is Hyperbaric Oxygen Therapy?

HBOT is a medical treatment where you sit in a hyperbaric chamber or pressurized space and breathe in pure oxygen. The chamber is filled with oxygen molecules, increasing the pressure up to three times higher than your natural environment. Because of this, you breathe in more oxygen than you normally would. The extra oxygen can help your body heal wounds and fight bacteria.

It can help treat:

- Carbon monoxide poisoning
- Cyanide poisoning
- Decompression sickness (from scuba diving)
- Bubbles in blood (arterial gas embolism)
- Severe infections, especially of skin and bone
- Compromised skin grafts and flaps

It can also help with:

- Wounds that won't heal (like some diabetic ulcers and radiation injuries)
- Severe anemia

- Burns
- Crush injuries
- Sudden deafness or vision loss
- Gas gangrene

Hyperbaric oxygen therapy does not treat:

- Stroke
- Brain or spinal cord injuries
- Sports injuries
- Heart disease
- Asthma
- Depression

It also doesn't treat:

- HIV/AIDS
- Lyme disease
- Cancer
- Autism
- Alzheimer's disease
- COVID-19

Hyperbaric oxygen therapy cost

In the U.S., a single HBOT session can cost between \$200 and \$1,250. Most insurance programs, including Medicare and Medicaid, help cover this cost. If you have original Medicare, you'll pay 20% of the Medicare-approved amount. Your payment can count towards your Medicare Part B deductible.

Always check with your insurance company to see whether your treatment is covered and how much of the payment you'll be responsible for. You may need to get preauthorization before you begin treatment.

Hyperbaric Oxygen Therapy Benefits

The body needs oxygen to survive, and your bloodstream carries it to cells throughout your body. Oxygen helps these cells get, store, and use energy. When you're sick or injured, your body needs more than usual so it can heal.

HBOT can help supply this extra oxygen, which stimulates the growth of new cells. It also boosts your immune system, giving it the strength it needs to find and destroy invading germs. It can even block some bacterial toxins.

HBOT can also treat bubbles that form in your bloodstream when you surface too quickly while scuba diving. This is also known as the bends. The extra oxygen raises pressure in your blood vessels, which forces the bubbles to shrink. It also helps dissolve them.

Hyperbaric oxygen therapy wound healing

The delivery of oxygen-rich blood to the site of an injury is part of the natural healing process. But for some people, especially older adults and people with conditions like diabetes, this process happens too slowly. If a wound isn't healing on its own, your doctor might recommend HBOT.

Once the oxygen-rich blood reaches the injured body part, it causes the release of growth factors and stem cells. These are involved in wound healing. They also promote new skin cells, blood vessel cells, collagen, and more.

How long do the effects of hyperbaric oxygen therapy last?

You'll probably need more than one session. It depends on your condition. Carbon monoxide poisoning can usually be treated in three sessions. Non-healing wounds might need over 40 sessions.

HBOT is usually one part of a larger treatment plan. This means you also might need to take certain medications and get other therapies.

How to Prepare for Hyperbaric Oxygen Therapy

Before you start treatment, talk with your doctor about the risks and benefits of HBOT. Also, check with your insurance to make sure the procedure will be covered.

If you take medicine on a schedule (like insulin), make your HBOT appointment at a time that doesn't conflict with your regular medication routine.

On the day of treatment, ask a friend to drive you home, since you might be

sleepy afterwards. You also might want a snack or a nap. Other than that, it shouldn't interfere with your regular activities.

Before the session begins, make sure that your wounds are wrapped properly. Tell the technologist if you might be pregnant.

Oxygen fuels fire, so you won't be able to bring anything flammable into the hyperbaric chamber. This means you shouldn't bring or wear:

- Oil-based hair or skin products
- Lighters or matches
- Cigarettes
- Electronics, including cell phones or music players
- Deodorant
- Lip balm

You also shouldn't wear the following:

- Perfume or cologne
- Hard contact lenses
- Nail polish
- Jewelry
- Hearing aids
- Insulin pump

What to Expect During Hyperbaric Oxygen Therapy

HBOT usually happens in an outpatient clinic, but it's also done in hospitals.

When you get to the facility, you'll put on a gown or scrubs. Then, you'll enter the hyperbaric environment. This could be an individual pod where you lie on a table that slides into a long, plastic tube. Or it could be a room that you share with other people. If you're in a hyperbaric room, the oxygen will be delivered through a mask or clear hood. Both individual and shared units

have the same benefits. While you get your treatment, you can listen to music or watch a movie.

In the hyperbaric unit, you might notice a feeling of a fullness or plugging in your ears, similar to being on a plane or mountaintop. Yawning, swallowing, or chewing gum can help ease this pressure. The feeling should go away after the therapy session is done.

Sessions generally last about 2 hours. But depending on your condition, it could be as short as 45 minutes or as long as 5 hours.

When you're done, your health care team will make sure you're good to go. They'll take your blood pressure and pulse. They might also check your blood sugar if you have diabetes. If everything looks good, you can head home.

Hyperbaric Oxygen Therapy Side Effects and Risks

In general, HBOT is considered safe. But like any other medical treatment, it does have some side effects and risks.

Common side effects include:

- Claustrophobia
- Lightheadedness
- Fatigue
- Headaches
- Ear and sinus pain

Other risks include:

Middle ear injuries. Sudden changes in air pressure can lead to eardrum rupture and other complications.

Temporary vision problems. Hyperbaric oxygen therapy sometimes affects the eye lens, potentially leading to nearsightedness. It usually gets better after a few days or weeks.

Lung collapse. Changes in air pressure can affect the lungs.

Oxygen poisoning. Too much oxygen can trigger:

- Seizures

- Lung failure
- Fluid in the lungs and other complications

Low blood sugar. For people who take insulin for diabetes, hyperbaric oxygen therapy can impact blood sugar levels.

Fire. Oxygen can fuel flames, so it's important to take fire safety seriously during hyperbaric oxygen therapy.

Complications are more likely for some people. You shouldn't get HBOT if you:

- Recently had an ear injury or surgery
- Have a fever or cold
- Have certain lung conditions
- Have severe congestive heart failure

Ask your doctor if this therapy is right for you.

Hyperbaric Oxygen Therapy at Home

Portable low-pressure fabric hyperbaric chambers are not the chambers used in HBOT.

They're approved by the FDA to treat altitude sickness only. Portable low-pressure fabric hyperbaric chambers can create a mildly pressurized environment, but they don't use or contain oxygen. In other words, they don't meet the clinical standards for HBOT.

Takeaways

Hyperbaric oxygen therapy involves breathing in pure oxygen in a hyperbaric (pressurized) chamber. It can increase the amount of oxygen in your blood, helping to heal certain injuries and conditions. It doesn't work for all conditions, and it can have some risks and side effects. Talk with your doctor about whether this treatment is right for you.

Hyperbaric Chamber FAQs

What are the benefits of hyperbaric chambers for the brain?

Researchers are still studying the effects of HBOT on the brain. HBOT is not approved for the treatment of strokes, brain injuries, Alzheimer's disease, or other brain conditions.

What is the downside of hyperbaric oxygen therapy?

This treatment doesn't work for all conditions, including stroke, brain injuries, and Alzheimer's disease. It can cause lightheadedness and fatigue, and in rare cases, more serious complications such as middle ear damage or lung collapse.

How long can you stay in a hyperbaric chamber?

You can stay in a hyperbaric chamber for up to 5 hours depending on your condition.

What is hyperbaric oxygen therapy used to treat?

HBOT is used to treat decompression sickness, bubbles in the blood, carbon monoxide poisoning, injuries that won't heal, and some other conditions.

Who should not get hyperbaric oxygen therapy?

You shouldn't get HBOT if you recently had an ear surgery or injury or if you have a cold, severe congestive heart failure, or certain lung problems.

What does hyperbaric oxygen therapy do for the brain?

More research is needed to understand the effects of HBOT on the brain. Right now, HBOT isn't used to treat strokes, brain injuries, Alzheimer's disease, or other brain conditions.

Why do athletes use hyperbaric chambers?

At-home hyperbaric chambers are sometimes marketed to athletes, but this use isn't approved by the FDA.

What is the miracle of hyperbaric oxygen therapy?

HBOT can help heal conditions like decompression sickness, carbon monoxide poisoning, radiation injury, and diabetic ulcers. But it's not a miracle fix: like other therapies, it doesn't cure everything and can cause side effects and complications.