Conditions A-Z Living Well Resources Explore

Back Pain Overview Back Sprain Herniated Disc Lower Back Sciatica Upper Back

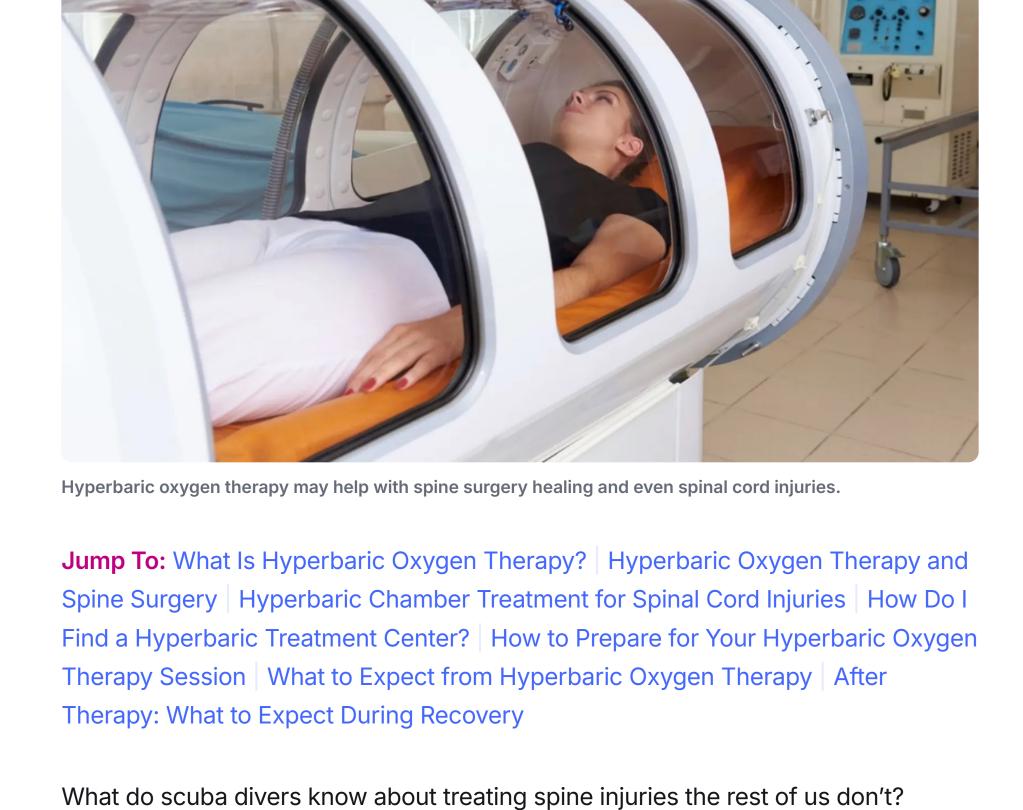
Medically Reviewed

Could Hyperbaric Oxygen

HealthCentral

Therapy Help Heal Your Spine? Usually used for decompression sickness, hyperbaric oxygen therapy may help accelerate wound healing after spine surgery and

may even have a place in treating spinal cord injuries. By: Michelle Beauclair Jan 29, 2021 Medical Reviewer: Jason M. Highsmith, M.D.



Maybe nothing, but the treatment they use for decompression sickness might provide an edge when you're healing from back surgery or spine injuries.

The treatment is hyperbaric oxygen therapy, and some evidence suggests it can help wounds heal and may even help you function better after a spinal cord injury.

Hyperbaric oxygen therapy (HBOT) is a treatment that uses highly pressurized

HBOT is a commonly known treatment for decompression sickness experienced by

scuba divers, slow-to-heal wounds resulting from diabetes or radiation injury, and

serious infections. It may speed healing after spine surgery, and there's even some

What Is Hyperbaric Oxygen Therapy?

oxygen in a controlled environment called a hyperbaric chamber.

"Simply stated, hyperbaric oxygen therapy is breathing 100% oxygen while under increased [hyper-] atmospheric pressure [-baric]," says Javeed Siddiqui, M.D., MPH, chief medical officer at TeleMed2U.

Dr. Siddiqui explains that hyperbaric oxygen therapy works by delivering oxygen at

high pressure—generally one to three times the air pressure at sea level—resulting

in increased oxygen levels in cells and tissues to stimulate healing.

"The simple explanation is that every cell in the body requires oxygen for normal function. The concept is if a medical procedure can increase the amount of oxygen delivered to injured or damaged cells that in turn will assist in the body's healing

Hyperbaric Oxygen Therapy and Spine Surgery HBOT can treat a wide variety of conditions, such as:

GO

that HBOT can increase the formation of new blood vessels known as angiogenesis," adds Dr. Siddiqui. "It also impacts the production of collagen and fibroblasts, which are dependent on oxygen concentrations as well. Finally, HBOT

can impact infected wounds as it can increase intracellular leukocyte killing." That

could mean a lower chance of surgical site infection and other complications after

components of the wound healing cascade. Among the most important issues is

Dr. Siddiqui relates that based on its successful use in wound healing, hyperbaric

treatment for spinal injuries can be a viable treatment approach. He says that all of

the wound healing issues "apply in spinal surgery and if determined as appropriate

by your medical professional, HBOT may be an important component of your

"There are many facets to wound healing and HBOT can impact multiple

Hyperbaric Chamber Treatment for Spinal Cord

Based on experimental study findings, HBOT therapy for spinal cord injuries is a

promising treatment option. For example, in 11 HBOT therapy spinal cord injury

studies done between 2014 and 2016, all showed significant improvement in patients' motor recovery, according to a 2017 review of literature in Medical Gas Research. Potential benefits may include:

Interested in HBOT? You're not alone. Luckily, there's probably a facility close to you. There are currently around 1,200 hyperbaric oxygen therapy treatment centers in the United States. Check out the list of Undersea and Hyperbaric Medical Society accredited facilities.

However, despite clinical research suggesting HBOT benefits, the studies are few

in number and not all suggest benefit. Consequently, the spinal healing jury is still

and what specific spinal injuries are the best candidates for HBOT therapy.

How Do I Find a Hyperbaric Treatment Center?

out, and more research is needed to determine optimum HBOT treatment protocols

Some general preparation guidelines include: Don't consume carbonated beverages or alcohol

If you're a smoker or use other tobacco products, quit their use during the

Don't wear any jewelry, wigs, deodorant, hair products, makeup, or jewelry.

Do eat protein-rich snacks or meals to maintain your energy level.

Your list of nonprescription and prescription medicines

Preparation for hyperbaric therapy also includes banning any potentially

produce heat are forbidden in the hyperbaric chamber.

team will give specific instructions on therapy preparation.

combustible devices or substances due to the treatment's hypersaturated oxygen

environment. For example, battery-powered devices, lighters, or other items that

For the procedure you'll wear scrubs or a hospital-provided gown. Your health care

Dr. Siddiqui advises asking your HBOT provider the following clarifying questions:

3. How long will the HBOT sessions last and at what frequency will they occur? 4. When will we evaluate if the HBOT is helping the clinical situation? You should have periodic evaluations to assess if the HBOT is making an impact on the clinical issue.

7. How frequently will you be communicating with my primary medical

5. What are the side effects I would anticipate?

provider?

Therapy

6. What can I bring into the HBOT chamber with me?

treatment room allows for multiple people to receive simultaneous treatments. You can either lie down or sit. You'll receive your oxygen via a facemask or by a clear lightweight hood positioned over your head.

into a clear plastic treatment chamber.

or yawning can help to alleviate the "full" feeling.

• One-person unit: For the individual unit, you'll recline on a table that's slid

Hyperbaric treatment room for multiple-person treatments: The hyperbaric

During treatment, the room's air pressure will be two to three times that of normal

air pressure. You may experience a "full" feeling in your ears, much like what you

may feel when you're flying in an airplane or in a highly elevated area. Swallowing

Typically HBOT treatments for most conditions last around two hours. You'll be

constantly monitored during your treatment by the facility's health care staff.

- week, if there are conveniences such as video or audio entertainment, also what staff is present at the center, how do they handle emergencies, and what type of emergencies are they able to manage."
- Post-treatment, you might be hungry or tired, though not to the extent it would limit your normal activity. Dr. Siddiqui recommends you talk to your HBOT professional about what to expect

SOURCES ✓

Jason M. Highsmith, M.D., Neurosurgeon: Dr. Jason M. Highsmith is a board certified and fellowship trained neurosurgeon specializing in complex and minimally-invasive spine surgery

evidence to suggest it's effective in treating spinal cord injuries.

 Air or gas bubbles in the bloodstream (arterial gas embolism) Decompression illness Severe anemia Slow-to-heal wounds due to poor blood supply such as diabetic foot ulcers Bone inflammation caused by infection Necrotizing infections

Dr. Siddiqui adds, "I would refer to your local medical professional to know the

HBOT sites in your area. Also, you can contact the Undersea and Hyperbaric

Medical Society and ask about a specific facility or search their directory of

How to Prepare for Your Hyperbaric Oxygen

Once you've found a treatment center, it's time to get ready for your treatment.

adhere to the specific requirements of your HBOT treatment facility.

Here's some guidelines to follow and some questions to ask. It's imperative that you

• If you're possibly pregnant If you're having diarrhea, vomiting, or nausea If you've not eaten on the day of your treatment

• If you're currently experiencing an ear or sinus infection, flu, cold, or other

- 1. What is the aim or goal of the HBOT? 2. How many treatment sessions do you anticipate I will have to receive in order to achieve this goal?
- Hyperbaric oxygen therapy is usually an outpatient procedure, although treatments can also be done if you're hospitalized. Generally, there are two kinds of hyperbaric oxygen chambers:

What to Expect from Hyperbaric Oxygen

Hyperbaric oxygen therapy is commonly a facet of a comprehensive treatment

plan used in conjunction with medications and other therapies tailored to your

hyperbaric therapy. HBOT shows promise for incision site healing after spine surgery and for some facets of spinal cord injury recovery. The future looks bright for HBOT when it

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"Every HBOT client should meet the team of professionals that they will be working with. You need to look at the chamber, how comfortable you will be in the chamber, the attentiveness of the clinical care team, and how well the care team communicates with you and your health care partners," says Dr. Siddiqui. "You should ask the HBOT team how long the sessions will last, how many sessions per Depending on your specific medical condition, it's likely you'll need multiple treatment sessions. For example, a nonhealing wound may need 40 or more sessions. while in the case of carbon monoxide poisoning, it may require as little as

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and in wound healing/repair," Dr. Siddiqui says. Sign up for our bi-monthly Chronic Pain Newsletter. Your Email...

recovery."

spine surgery.

Injuries

Recovering motor function

accredited centers."

Therapy Session

treatment period.

Let your treatment team know:

congestion

Improving spinal cord cell health

Reducing secondary spinal injury

three treatments.

specific condition.

Back Pain Back Pain

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comes to your back, but it's nowhere near gold standard treatment for any condition yet. © 2024 HealthCentral LLC. All rights reserved. with offices in SC and FL.

What to Expect from Your Spine Imaging Appointment

After Therapy: What to Expect During Recovery After the chamber therapy is finished, you'll typically have an ear exam and blood pressure and pulse check. Your blood glucose will be tested if you have diabetes. Once the therapy team completes their evaluation, they'll release you to leave. during recovery as it will be dependent on the medical issue addressed by the