Hyperbaric Oxygen Therapy: Can HBOT Slow Aging and Boost Brain Health?

9 MIN READ

AUG. 29, 2025

BY DANN ALBRIGHT, CSCS

Breathing pure oxygen has many benefits, but is it the right choice for you? Let’s dig into how HBOT may promote healthy aging, cognitive performance, and cellular repair.

What if you could sit in a room, doing whatever you like, including taking a nap, and know that you were healing your cells, increasing your **cognitive function**, and preparing your body for a longer, healthier life?

It sounds like a miracle treatment or something from a science fiction novel. But it’s not as far out there as you might think.

Let’s talk about hyperbaric oxygen therapy and how it can help foster healthy aging on a cellular level.

What Is Hyperbaric Oxygen Therapy (HBOT)?

Hyperbaric oxygen therapy (HBOT) is simple: you sit in a pressurized room, breathing 100% oxygen, for an hour or two. The pressurized oxygen leads to a significant boost in the oxygen in your blood, which makes its way to your tissues and has all sorts of positive effects.

Traditionally, it’s been used to treat things like burns, infections, and carbon

monoxide poisoning, as well as a way to improve healing from cancer radiation treatments. Doctors used it as far back as the 1930s to treat decompression sickness in divers who surfaced too quickly.

But more recent research has been finding fascinating uses of HBOT for less obvious problems.

What The Experts Say About HBOT

Dr. Scott Sherr is an expert on HBOT and a Super Age advisor. He's dedicated his career to understanding this technology and created an integrative approach to optimizing the treatment. "When I was in medical school, I was in a trauma center that had a large hyperbaric chamber to treat people with severe burns, severe infections, soft tissue injury, and partial amputations. I witnessed people go into the chamber and come out remarkably better, and within 90 minutes," says Dr. Sherr. The technology has been around since the early 1900s and is now used for more than just traumatic injury.

HBOT has been used for recovery of brain injuries and general tissue healing for years in the sports medicine world. **Dr. Joseph Maroon** is a former team neurosurgeon for the Pittsburgh Steelers, medical director for the WWE, an Ironman triathlete, and a staunch proponent of hyperbaric oxygen therapy for brain-related issues.

"I see a lot of patients with concussions from sports," says Dr. Maroon, "usually high school, sometimes college kids. And they go through all the usual diagnostic procedures, and 10% to 15% of people end up with what's called post-concussion syndrome, where they have memory impairment, difficulty processing information, maybe emotional instability."

Ten years ago, Dr. Maroon started sending those patients to a hyperbaric chamber. And the results were remarkable.

“Parents would come to me and say ‘You’ve given me my daughter back,’ or ‘You’ve given me my son back.'”

Dr. Maroon has seen amazing recoveries from other brain-related disorders, too, including veterans with severe post-traumatic stress disorder (PTSD).

“The veterans, these poor guys get a polypharmacy treatment. They use a combination of **20 or 30 drugs in different combinations**, nothing FDA-approved. And I’ve seen, personally, Navy SEALs, special ops operators with severe PTSD given their life back with hyperbaric oxygen therapy.”

What do traumatic brain injury and PTSD have in common? They compromise the integrity of the brain, creating damage in specific structures and circuits. High-pressure oxygen therapy has been shown to promote the repair of those structures and many others.

How HBOT Supports Healthy Aging and Brain Health

So what does all of this have to do with promoting healthy aging?

Interestingly, PTSD patients give us some insights into aging. Traumatic stress is **associated with higher levels of inflammatory markers**. It’s also associated with **accelerated aging**, which isn’t surprising, as chronic inflammation is believed to be linked with biological aging.

Hyperbaric oxygen therapy’s anti-inflammatory effects are important in both its therapeutic and longevity applications. Inflammation is good; it’s how the body heals itself, but when it runs rampant, it causes damage. And that damage accelerates cellular aging. HBOT helps keep inflammation from getting out of control.

In 2023, **researchers found** that patients with non-healing diabetic wounds showed decreased oxidative and pro-inflammatory biomarkers after HBOT treatment, lending further evidence to the idea that inflammation is at the heart of its effects.

But researchers are finding all sorts of other benefits to HBOT, too:

- **Improved cognitive function**: a **2020 study** found patients undergoing HBOT to have better attention and information processing speed than a control group.
- **New blood vessels**: **multiple studies** have found that HBOT promotes angiogenesis, a creation of new blood vessels usually associated with wound healing.
- **Reduced cellular aging**: **cellular senescence** is the process of cells losing function as they age, which could be a contributor to the effects of aging. A **2020 study** found that HBOT may be able to help clear senescent cells from the body.
- **New mitochondria:** a **2025 study** found that HBOT increased the creation of mitochondria, an important part of cells implicated in aging (though it did cause extra stress on already damaged mitochondria).

These are the kinds of things that may be able to help you live a healthier, longer life.

However, “it is important to emphasize that this anti-aging application of HBOT remains an investigational use,” says Dr. Qiaoyu Fu, lead author of a **review article on HBOT for healthy aging**.

“More large-scale, long-term human studies are needed to confirm its role in extending healthspan (not just lifespan).”

That being said, early research on HBOT for healthy aging is quite promising.

“What’s most exciting is that HBOT targets fundamental aging processes,” says Dr. Fu, “suggesting HBOT could one day be part of a precision geroscience* toolkit.”

(* Geroscience is the study of genetic, molecular, and cellular factors of aging.)

A Hyperbaric Oxygen Therapy Protocol for Healthy Aging

Experts may give different recommendations for how to use HBOT to get the best anti-aging effects, as there's little research to back up specific protocols for longevity or general health.

Dr. Sherr recommends hyperbaric oxygen therapy for 90 minutes, five days a week, for six to eight weeks, to see long-term benefits.

Once you're done with the first block of sessions, says Dr. Sherr, you can continue undergoing HBOT treatments once or twice a week, with one week off per month, especially if you have a chamber at home.

This protocol is based on Dr. Sherr's clinical experience, he notes, and not on specific research. And he says that some people do see positive effects with less-than-daily use. So, if you consult a provider near you, you may get different recommendations.

Dr. Maroon used a similar protocol when he ran a **controlled experiment with himself as the only patient**. After going through an extensive battery of tests, he underwent 60 HBOT sessions over the course of three months (five two-hour sessions per week).

Maroon summarized the results this way: "It changed my life."

Here's what he found:

- **Cognitive Gains:** Improvements around 3% in a variety of cognitive tests.
- **Memory Boost:** A 27% improvement in delayed verbal memory (basically remembering

something that you've heard).

- **Blood Flow Improvement:** Improvements of up to 52% in cerebral perfusion (the pressure driving blood flow through the brain).
- **Processing Speed**: Improvements in cerebral connections related to processing, learning, decision-making, and more.
- **Endurance**: A 15% increase in exercise endurance.
- **Strength**: Improvements in anaerobic threshold, fall risk, and muscle strength.
- **Performance**: An 11% decrease in his triathlon time (tested before and after the HBOT sessions).

While it's only a study of one, the results, when combined with larger, controlled trials, are quite promising.

Is Hyperbaric Oxygen Therapy for You?

Dr. Sherr says that HBOT is a good option for "anyone looking to truly uplevel their longevity stack, after they've **gotten basics down** (diet, lifestyle, supplementation)."

He also notes that this therapy might be especially valuable for people over the age of 65.

Sherr is quick to note that the protocol he suggests will derive the most benefits for people who use it "an integrated protocol, so optimizing your diet, lifestyle, supplementation, and watching all of these things carefully while you're doing hyperbaric therapy."

As always, be sure you've built your **longevity foundation** before looking at more

advanced therapies. Lots of vegetables, lean protein, plenty of walking, effective stress management, and a solid community will take you most of the way to your goals for a long, healthy, and active life.

If you're looking to optimize after that, something like Dr. Sherr's HBOT protocol may be able to give you added benefits.

That is, if it's within your financial means.

What Does Hyperbaric Oxygen Therapy Cost?

Hyperbaric therapy can get expensive fast—Dr. Sherr gives a guideline of $180 to $300 per session for a medical-grade chamber. Over 30 to 40 sessions, this protocol could end up costing over $10,000 or more.

"Soft" chambers at more popular clinics may be able to offer sessions for $75 or so, but those chambers don't create as much pressure, "so there's less potential benefit," says Sherr.

This is another great reason to make sure you have the fundamentals of nutrition, exercise, and stress management down. You'll want to make sure you're in a position to get the most out of each session.

Can HBOT Help You Age Better?

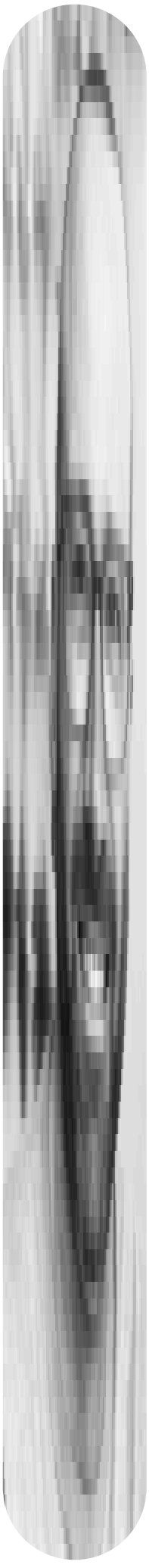
Spending some time in a hyperbaric oxygen chamber may help you improve cognitive function, generate new blood cells, and **keep oxidative stress and inflammation in check**.

But, whether you decide to pursue this therapy or not, you can use your breath as a tool to help promote your longevity and wellbeing. **Mindfulness practices** often focus on breathing and can be a huge help in your journey to age with grace and

intention.

The information provided in this article is for educational and informational purposes only and is not intended as health, medical, or financial advice. Do not use this information to diagnose or treat any health condition. Always consult a qualified healthcare provider regarding any questions you may have about a medical condition or health objectives. ***Read our disclaimers****.*

WRITTEN BY:



Dann Albright, CSCS