

# Hyperbaric Oxygen Therapy for Dementia

Hyperbaric Oxygen Therapy (HBOT) has emerged as a potential adjunctive treatment for dementia, particularly vascular dementia. By administering 100% oxygen in a pressurized chamber, HBOT significantly enhances cerebral oxygenation, which may counteract hypoxic conditions and promote neuroplasticity. Improved oxygen delivery can enhance cognitive function, memory, and overall brain health by supporting neuronal repair and reducing neuroinflammation. Preliminary studies and clinical observations have shown that patients undergoing HBOT often experience improved cognitive performance and daily functioning. While further research is needed to solidify these findings, HBOT represents a promising therapeutic avenue for dementia, warranting consideration for patients, especially those unresponsive to conventional treatments.



## How Hyperbarics Helps



Reduces Cell Death (Apoptosis)



Increases Neuroplasticity (the brain's ability to regrow and rewire itself)



Can help idling neurons become active again in the brain



Reduces Inflammation in the Brain



Builds New Blood Vessels, including those in the brain



Increases Oxygen



Increases the length of telomeres. Decreasing telomere size is a key factor in aging



Generally Improves Dementia Symptoms



## What Research Says

Hyperbaric Oxygen Therapy (HBOT) is gaining attention as a potential therapeutic approach for dementia, particularly for conditions such as vascular dementia. By administering 100% oxygen in a pressurized environment, HBOT significantly increases the amount of oxygen dissolved in the blood, enhancing oxygen delivery to the brain. This improved oxygenation can mitigate the effects of hypoxia—a common issue in vascular dementia—thereby supporting the survival and function of neurons. Increased oxygen levels can promote cellular repair and reduce the extent of damage caused by ischemic events, potentially slowing the progression of cognitive decline.

One of the key mechanisms by which HBOT may benefit dementia patients is through the promotion of neuroplasticity. Neuroplasticity refers to the brain's ability to reorganize itself by forming new neural connections. This process is crucial for learning, memory, and recovery from brain injuries. HBOT has been shown to stimulate neuroplasticity by enhancing the growth of new blood vessels (angiogenesis) and encouraging the proliferation of neural stem cells. These effects can improve cognitive functions, such as memory and executive function, which are typically impaired in dementia patients.

Clinical studies and observational data have begun to shed light on the potential cognitive benefits of HBOT for dementia patients. For instance, patients undergoing HBOT have reported improvements in memory, attention, and overall cognitive function. These improvements are believed to be linked to the enhanced oxygen delivery and the

subsequent reduction in neuroinflammation—a common pathological feature in dementia. By decreasing inflammatory processes in the brain, HBOT can help to protect neurons from further damage and promote a healthier neural environment, which is essential for cognitive maintenance and recovery.

Despite these promising findings, it is important to note that the use of HBOT for dementia is still an emerging field of study. Vascular dementia is the most studied form of dementia to be treated with hyperbaric oxygen therapy. Given that we have no conclusive tests to identify Alzheimer's, there are fewer studies on Alzheimer's and HBOT in particular. If you know someone diagnosed with vascular dementia, consider using HBOT as a treatment for vascular dementia.

We at Bay Area Hyperbarics have treated numerous dementia cases during our 25 years of healing our community. Our dementia patients have improved significantly. More extensive clinical trials are needed to fully understand the efficacy, optimal protocols, and long-term benefits of HBOT in dementia treatment. However, given the encouraging preliminary results and the physiological rationale supporting its use, HBOT represents a promising adjunctive therapy for dementia. It should be considered for patients who have not responded adequately to conventional treatments, always under the guidance of a medical professional in a certified hyperbaric facility. As research continues to evolve, HBOT may become an integral part of the therapeutic landscape for managing dementia.

# Research Studies

Frontiers in Aging Neuroscience

## Systematic Review and Meta-Analysis on Alzheimer's Disease

Hyperbaric oxygen is among the most studied and frequently reported applications in the treatment of delayed radiation injuries. This application of hyperbaric oxygen to the treatment and prevention of delayed radiation injury will be the topic of this chapter. The management of delayed radiation injury, especially when bone necrosis is present, requires multi-disciplinary management. The nature of delayed radiation injury, the mechanisms whereby hyperbaric oxygen is effective, clinical results, the effects of hyperbaric oxygen on cancer growth and future areas for research will be discussed.

Alzheimer's Association

## Hyperbaric oxygen ameliorates cognitive impairment in patients with Alzheimer's disease and amnesic mild cognitive impairment

Based on previous studies and our recent findings, we propose that hyperbaric oxygen treatment may be a promising alternative therapy for AD and aMCI.

# Patient Experiences

Listen to what real patients have to say about their experiences.



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Kevin had suffered several concussions while playing football. Previously a very good student, he found himself unable to attend High School classes. Instead, he lay most days on his bed in his darkened room depressed, unable to read, talk, or hang out with his friends. His parents were frantic. Kevin had tried prescription drugs and therapy which helped some with his systems. However, they did not eliminate the headaches, fatigue or improve his mood. They did not get him up and back to school. After HBOT, Kevin could attend school again and interact with his friends. HBOT made a major impact on bringing back Kevin's cognitive and emotional health and well-being.

### Kevin, 18

Improved functionality was hampered due to injury caused while playing football.



Mara had severe brain trauma at birth, so at 3 months old, her mom brought her into HBOT. She had a severely misshapen head, a tube in her stomach to feed her, and a tube to help her breath. Tragically, Mara's mother was told her baby would never recover nor respond like a normal child. She had already returned to the hospital twice for complications with her conditions. Mara's mother brought her in 5 days a week for treatment with HBOT. When Mara finished hyperbarics, her tubes had been removed. She could breathe on her own. She was able to eat and swallow food like a normal child. And Mara was strong enough to sit up and wave bye bye when encouraged. The nurse in the Pediatrician's office burst into tears of joy, when she saw the improvements in Mara's conditions.

### **Mara, 3 months old**

Gained the ability to sit up, which she was unable to do because of severe brain trauma at birth.

## **Refer a Patient**

Refer a patient in three easy steps.

### **1 You submit patient's information**

As a provider, your office fills out and faxes back the Patient Referral Form. Have questions? Call us!

### **2 We get authorizations**

We make sure the patient understands treatment and then follow the prescribed protocol to get the patient on the road to recovery!

### **3 Patient starts HBOT**

Our medical staff meets with the patient to ensure that HBOT is appropriate, and contacts Medicare or private insurance to receive authorization.



**Scan for Patient Referral Form**

 **Call Us: (408) 356-7438**