

# THE NORTHWEST WELLBEING HUB



## HYPERBARIC OXYGEN THERAPY **ALZHEIMERS** & PARKINSONS

### KEY POINTS

- Enhanced Oxygen Supply to the Brain
- Reduction of Inflammation
- Reduction of Oxidative Stress
- Neurogenesis and Improved Cognitive Function
- Enhancing Mitochondrial Function

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Hyperbaric Oxygen Therapy (HBOT) is being studied for its potential benefits in treating neurodegenerative diseases like Alzheimer's and Parkinson's. HBOT involves breathing pure oxygen in a pressurized chamber, which allows for increased oxygen delivery throughout the body, including the brain. Here's how it may help in the context of Alzheimer's and Parkinson's:

## 1. Enhanced Oxygen Supply to the Brain

- **Alzheimer's:** In Alzheimer's disease, reduced blood flow and oxygen supply to the brain contribute to cognitive decline. HBOT increases the amount of oxygen delivered to the brain, which may help improve cerebral metabolism and reduce cell death by enhancing brain cell survival and repair processes.
- **Parkinson's:** In Parkinson's, loss of dopamine-producing neurons in the brain affects motor functions. HBOT may help by boosting oxygen supply, potentially reducing oxidative stress and inflammation that contribute to neurodegeneration.

## 2. Reduction of Inflammation

- **Alzheimer's:** Chronic inflammation in the brain is a hallmark of Alzheimer's. HBOT has been shown to reduce markers of inflammation, which may help slow down or mitigate the progression of Alzheimer's by decreasing the inflammatory response that damages neurons.
- **Parkinson's:** In Parkinson's, inflammation is also linked to the progression of the disease. By reducing inflammation, HBOT might help preserve neuronal function and protect against further damage.

## 3. Reduction of Oxidative Stress

- **Alzheimer's:** Oxidative stress damages brain cells in Alzheimer's disease. HBOT can increase antioxidant activity in the body, potentially helping to reduce oxidative stress, which can protect neurons and enhance brain function.
- **Parkinson's:** Parkinson's disease also involves oxidative stress as a key factor in the degeneration of dopamine-producing neurons. HBOT's ability to reduce oxidative stress may protect these neurons and improve symptoms.

## 4. Neurogenesis and Improved Cognitive Function

- **Alzheimer's:** Some studies suggest that HBOT may promote neurogenesis (the growth of new neurons) and improve cognitive function in patients with Alzheimer's. Animal models have shown improvement in memory and learning when treated with HBOT.
- **Parkinson's:** Though research is less extensive in Parkinson's, improved oxygenation and reduced stress may help slow down cognitive decline, which is sometimes seen in Parkinson's as the disease progresses.

## 5. Enhancing Mitochondrial Function

- **Alzheimer's:** Mitochondrial dysfunction (energy production issues in cells) is common in Alzheimer's. HBOT has been shown to improve mitochondrial function, which can increase energy production in brain cells, potentially helping to slow down cognitive decline.
- **Parkinson's:** Parkinson's is also associated with mitochondrial dysfunction. By improving mitochondrial efficiency, HBOT could help cells produce energy more efficiently, improving motor symptoms and overall brain health.

## Research Findings:

- **Alzheimer's:** Preliminary clinical studies and animal research have shown that HBOT can improve memory, reduce amyloid-beta plaques (a hallmark of Alzheimer's), and improve cognitive function in patients with mild cognitive impairment or early-stage Alzheimer's.
- Parkinson's:** Research in Parkinson's is more limited, but some studies suggest that HBOT may improve motor functions and reduce tremors and rigidity by protecting neurons and enhancing blood flow to affected brain regions.