

Cerebral Palsy and Hyperbaric Oxygen Therapy



Hyperbaric oxygen therapy is an emerging treatment for children with cerebral palsy. It involves using a pressurized chamber to deliver more oxygen to a baby or child. More research is needed, but this therapy might significantly reduce cerebral palsy symptoms.

What Is Hyperbaric Oxygen Therapy?

Hyperbaric Oxygen therapy (HBOT) is a medical treatment that supplies pure oxygen into the bloodstream while the patient lies in a pressurized chamber.

While the patient is inside the chamber, **the air pressure increases to two to three times higher than usual, making it possible for the lungs to gather more oxygen.**^[1]

Since blood carries oxygen throughout the body, the additional oxygen helps fight off infection while helping the body stimulate and release stem cells and growth factors.

Additionally, when the body receives extra oxygen, the increase in blood oxygen will temporarily restore the correct level of tissue function and blood gas levels.

How Does Hyperbaric Oxygen Therapy Help Children With Cerebral Palsy?

The study of HBOT therapy in children with cerebral palsy currently has mixed results. It shows enough potential to continue studying it as a future [cerebral palsy treatment](#).

Cerebral palsy can be caused by a [lack of oxygen](#) to the brain. Immediate application of HBOT might help slow or reverse some of the resulting damage that causes permanent disabilities.

A review of several studies of HBOT used with children with cerebral palsy found promising but mixed results:[2]

- Two studies showed improvements in functioning for children who received HBOT compared to a control group.
- One study found that children who received HBOT right away saw significantly more improvements than those who received it six months later.
- Most studies of HBOT in children with cerebral palsy included positive caregiver statements. Caregivers reported reduced burdens, meaning they saw improvements in the children's abilities to function independently.

A Case Study of Positive Benefits of HBOT for a Child with Cerebral Palsy

Theresa Washington, the parent of a child born with cerebral palsy, states that HBOT was a lifesaver for her family. Her son, Andrew, was [born with cerebral palsy](#) and once had weak, uncontrolled limbs and poor control of his head.

Theresa opted to start HBOT treatment for her son, which consisted of daily treatments of HBOT for six months.

Before treatment, nurse Jane Dean of Alder Hey Hospital said that Andrew was in dire condition after having surgery to correct a problem with one of his testicles. Using HBOT, although still novel at the time, was their last hope.

"Andrew's body was curved like a banana. He had no control over any of his muscles and was being fed through a tube. He was on 16 different kinds of medication. There was no cognition at all. He had that high-pitched 'cerebral' cry that, once you have heard, you hope never to hear again in your life. My heart went out to him. I thought, 'Surely there must be more we can do.'" [3]

After eight years of HBOT treatment, Andrew's mother, Theresa, stated that Andrew is like a new person.

"His understanding came back very quickly. To begin with, he couldn't see. But now he can read, his math is good, and he can tell the time. He is starting to be able to squeeze a switch, which could open up a new form of communication. We take him to football matches and horse-riding for disabled people. He remembers everything. He will never walk, but we have our child back."

Is HBOT Safe?

A handful of studies have focused on adverse events associated with HBOT in children. The researchers found that **side effects were generally rare and, when they occurred, mild.** [4]

The most common issue was middle ear barotrauma, physical damage to the middle ear caused by the pressure differences involved in the therapy. The damage was not severe but still poses a safety concern.

Some of the less frequent adverse events were dizziness, low blood pressure, low blood sugar, nausea, seizures, and anxiety.

Is HBOT Right For Your Child?

If you are interested in learning more about HBOT or think it could be an option that may benefit your child, it is important to get an informed explanation from your child's primary healthcare provider. Also, talk to other healthcare team members who have experience and knowledge about the therapy.

However, since it is not yet fully accepted as a treatment for cerebral palsy, most insurance companies will not pay for the therapy.

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References

1. Mayo Clinic. (2023, December 2). Hyperbaric Oxygen Therapy. Retrieved from: <https://www.mayoclinic.org/tests-procedures/hyperbaric-oxygen-therapy/about/pac-20394380>
2. McDonagh, M., Carson, S., Ash, J., Russman, B.S., Stavri, P.Z., Krages, K.P., and Helfand, M. (2023, September). Hyperbaric Oxygen Therapy for Brain Injury, Cerebral Palsy, and Stroke: Summary. AHRQ Evidence Report Summaries. Agency for Healthcare Research and Quality. Retrieved from: <https://www.ncbi.nlm.nih.gov/books/NBK11904/>
3. Grice, E. (2006, April 10). Oxygen Therapy Gave us Back our Child. The Telegraph. Retrieved from: <https://www.telegraph.co.uk/news/health/alternative-medicine/3338168/Oxygen-therapy-gave-us-back-our-child.html>
4. Laureau, J., Pons, C., Letellier, G., and Gross, R. (2022). Hyperbaric Oxygen in Children with Cerebral Palsy: A Systematic Review of Effectiveness and Safety. PLoS One. 17(10), e0276126. doi: 10.1371/journal.pone.0276126.

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