

Interview with Dr. Dan A. Rossignol: Hyperbaric oxygen therapy may improve symptoms in autistic children in *Medical Hypotheses*

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Abstract

Hyperbaric oxygen therapy involves inhaling 100% oxygen at greater than one atmosphere absolute (ATA) in a pressurized chamber. The air we breathe at sea level is defined as 1 ATA. Many of the clinical uses of hyperbaric oxygen therapy (HBOT) have been at pressures above 1.5 ATA. However, recently, some researchers have been using lower pressures of hyperbaric oxygen therapy with good results in some conditions. Therefore, some people use the term mild hyperbarics or low pressure hyperbarics when they talk about using hyperbaric oxygen therapy at 1.5 ATA or less. HBOT increases the amount of oxygen that is carried in the plasma. One of the properties of HBOT is an anti-inflammatory effect.

Multiple studies have revealed that autism is a neurodegenerative disease characterized by cerebral hypoperfusion, neuro and GI inflammation, and increased oxidative stress. HBOT causes increased oxygen perfusion, has potent anti-inflammatory effects, reduces oxidative stress and increases the production of stem cells. Hypoperfusion refers to decreased blood flow. In the case of autism, numerous studies have shown decreased blood flow to the brain, especially to the temporal regions of the brain. This hypoperfusion correlates with many core autism symptoms.

A case report is mentioned wherein Heuser treated a four-year old autistic child using lower pressure HBOT at 1.3 ATA (and 24% oxygen) and reported “striking improvement in behavior including memory and cognitive functions” after only ten sessions. Furthermore, the child had improvement of cerebral hypoperfusion as measured by pre-HBOT and post-HBOT SPECT scans. Dr. Rossignol also speaks about the results of his study entitled *Hyperbaric oxygen therapy may improve symptoms in autistic children in Medical Hypotheses*. The interesting finding from this case series was that the younger children had more significant improvements in clinical outcome scores than the older children.

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