

## A Retrospective Study to Evaluate Verbal Scores of Autistic Children Who Received Hyperbaric Oxygen Therapy

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**Abstract :** Hyperbaric oxygen therapy (HBOT) has been hypothesized as an effective treatment for increasing verbal language skills in individuals on the autism spectrum. A child's ability to effectively communicate with peers, parents, and caregivers impacts their level of independence and quality of personal relationships. This retrospective study will compare the speech development of participants aged 2-17 years that received 40 sessions of HBOT at 2.0 ATA to those who had not. Both groups will have a verbal assessment every six months. There were 31 subjects in the HBO group and 32 subjects in the non-HBO group. The statistical analysis will focus on whether hyperbaric oxygen therapy made a significant difference in Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP) or Assessment of Basic Language and Learning Skills (ABLLS) results. The evidence demonstrates a strong correlation between HBOT and an increased change from baseline verbal scores compared to the control group, even in difficult to grasp areas such as spontaneous vocalization. We suggest this is due to the anti-inflammatory effects of hyperbaric oxygen therapy. Neuroinflammation causes hypoperfusion of critical central nervous system areas responsible for the symptoms described within the autism spectrum, such as problems with thought processing, memory, and speech. Decreasing the inflammation allows the brain to function properly, which results in improved verbal scores for the participants that underwent HBOT.

**Keywords :** assessment of basic language and learning skills, autism spectrum disorder, hyperbaric oxygen therapy, verbal behavior milestones assessment and placement program

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