

# The effectiveness of hyperbaric oxygen therapy (HBOT) in children with autism spectrum disorders

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## Abstract

Research based on neuro-imaging findings indicate the presence of cerebral hypoperfusion (decreased blood flow) in children with autism spectrum disorders (ASD). One of modern therapeutic methods that can counteract cerebral hypoperfusion in those children is hyperbaric oxygen therapy (HBOT).

**Aim:** The aim of the present study was to examine whether a series of hyperbaric oxygen therapy sessions can improve selected psychosomatic parameters in children with ASD.

**Materials and methods:** The study group comprised 35 boys and 4 girls with ASD, who undertook 40 HBOT sessions consisting of breathing hyperbaric oxygen (1.5 atm.). Each session lasted 60 min. The following questionnaire tests were used to assess the effects of the therapy: Clinical Global Impression Scale (CGIS), Autism Treatment Evaluation Checklist (ATEC), and Childhood Autism Rating Scale (CARS).

**Results:** Eight components of the ATEC and CARS scales as well as the CARS total score revealed statistically significant improvements. One out of all examined items - ATEC Speech/language/communication - "Can follow some commands" revealed a decline after the HBOT sessions ( $p = 0.0431$ ).

**Conclusions:** In younger children under study post-therapy improvements were found for the ATEC Sociability - "Does not imitate", ATEC Sensory/cognitive awareness - "Shows imagination", and ATEC Health/physical/behavior - "Sound-sensitive" items. In older children improvements were noted for ATEC Health/physical/behavior - "Obsessive speech" and CARS emotional response, adaptation to change, and total score.