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[Review](#) [Geroscience](#). 2023 Apr;45(2):747-756. doi: 10.1007/s11357-022-00707-z.

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The potential of hyperbaric oxygen as a therapy for neurodegenerative diseases

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Abstract

The World Health Organization estimates that by the year 2040, neurodegenerative diseases will be the second leading cause of death in developed countries, overtaking cancer-related deaths and exceeded only by cardiovascular disease-related death. The search for interventions has therefore become paramount to alleviate some of this burden. Based on pathways affected in neurodegenerative diseases, hyperbaric oxygen treatment (HBOT) could be a good candidate. This therapy has been used for the past 50 years for conditions such as decompression sickness and wound healing and has been shown to have promising effects in conditions associated with

neurodegeneration and functional impairments. The goal of this review was to explore the history of hyperbaric oxygen therapy, its uses, and benefits, and to evaluate its effectiveness as an intervention in treating neurodegenerative diseases. Additionally, we examined common mechanisms underlying the effects of HBOT in different neurodegenerative diseases, with a special emphasis on epigenetics.

Keywords: Alzheimer's disease; Epigenetics; Hyperbaric oxygen; Inflammation; Neurodegeneration; Neurodegenerative diseases; Oxidative stress; Parkinson's disease.

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