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Parkinson's Disease and Hydrogen Therapy

Hydrogen Therapy has shown promising potential in improving symptoms associated with Parkinson's Disease, a neurodegenerative disorder characterised by the loss of dopamine-producing neurons in the brain, which causes symptoms like tremors, stiffness, and impaired movement. Oxidative stress and inflammation are believed to play significant roles in the progression of Parkinson's. While more research is needed, several mechanisms suggest how Hydrogen Therapy may benefit individuals with Parkinson's Disease:

Antioxidant Properties

Oxidative stress, caused by an imbalance between free radicals and antioxidants in the body, plays a significant role in the progression of Parkinson's Disease. Hydrogen acts as a selective antioxidant, meaning it targets harmful free radicals without affecting beneficial ones. By reducing oxidative stress, Hydrogen Therapy may help protect neurons from damage and slow the progression of Parkinson's Disease.

Anti-inflammatory Effects

Inflammation in the brain is also believed to contribute to the development and progression of Parkinson's Disease. Hydrogen has been shown to have anti-inflammatory properties, which may help alleviate neuroinflammation (brain inflammation) and protect neurons from further damage.

Mitochondrial Function Enhancement

Dysfunction in mitochondria; the energy-producing components of cells, is implicated in Parkinson's Disease. Hydrogen Therapy has been shown to improve mitochondrial function, potentially enhancing energy production in neurons and supporting their survival.

Neuroprotection

Studies suggest that Hydrogen Therapy may exert neuroprotective (brain cell-saving) effects, safeguarding neurons from degeneration and promoting their survival. This could help preserve motor function and alleviate symptoms of Parkinson's Disease.



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Relevant Research Articles:

Yoritaka, A., Takanashi, M., Hirayama, M., Nakahara, T., Ohta, S., & Hattori, N. (2013). Pilot study of H₂ Therapy in Parkinson's Disease: a randomized double-blind placebo-controlled trial. *Movement Disorders*, 28(6), 836-839.

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Yoritaka, A., Abe, T., Ohtsuka, C., Maeda, T., Hirayama, M., Watanabe, H., ... & Hattori, N. (2014). A randomized double-blind multi-center trial of Hydrogen water for Parkinson's Disease: protocol and baseline characteristics. *BMC Neurology*, 14(1), 73.

Ishibashi, T., Sato, B., Rikitake, M., Seo, T., & Kurokawa, R. (2019). Molecular Hydrogen suppresses superoxide generation in Parkinson's Disease model mice with mitochondrial complex I inhibitor-induced oxidative stress. *Journal of Clinical Biochemistry and Nutrition*, 64(3), 325-331.