

**Whole-body Cryotherapy in Dementia**

**B. Stanczykiewicz<sup>1</sup>, D. Szczesniak<sup>1</sup>, J. Rymaszewska<sup>1</sup>**

<sup>1</sup>Division of Consultation Psychiatry and Neuroscience Department of Psychiatry, Wrocław Medical University, Wrocław, Poland

---

Current studies have not addressed the impact of extremely low temperatures on the cognitive functions of humans. Determining the etiopathogenesis of dementia is a crucial aspect of studies dealing with cognitive functions. There is a consensus among researchers that vascular lesions, oxidative stress, inflammatory processes and abnormal neurotransmission are associated with the development of dementia, including Alzheimer's disease (Grammas 2011). An antioxidative activity of cryotherapy carried out on patients with multiple sclerosis has been shown in several studies. Clinical trials involving patients with secondary progressive multiple sclerosis showed them to have a statistically significant increase in the total antioxidant status (TAS) following 10 cryotherapy sessions (Miller 2010). Due to the anti-inflammatory (a modification of the concentration of proinflammatory cytokines) and antioxidative effect of low temperatures as well as the hormonal and lipid changes they cause, they may play an important role in preventing or inhibiting pathophysiological processes leading to dementia. Therefore, carrying out a study concerning the effect of systemic cryotherapy on the body in dementia will allow to assess its efficacy.

Grammas P. Neurovascular dysfunction, inflammation and endothelial activation: implications for the pathogenesis of Alzheimer's disease. *J Neuroinflamm* 2011;8:26.

Miller E, Mrowicka M, Malinowska K, Mrowicki J, Saluk-Juszczak J, Kedziora J. The effects of wholebody cryotherapy on oxidative stress in multiple sclerosis patients, *J Therm Biol*, vol.35, 2010, s.406410.