



EFFECTS OF MINERAL WATERS ON COGNITIVE FUNCTIONS

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Abstract

Introduction. Clinical trials have been revealed the role of mineral waters on cognitive function and performance. Researchers described the influence of brain structure by biochemical properties of micronutrients and neurotransmitter systems.

Material and methods. Selected articles and reviews, analytical data from scientific literature were gathered to highlight the effects of hydration and mineral status on cognitive processes, including neurochemical activity in murine models.

Results and discussions. Dehydration levels were associated with progressive alteration of mood, body weight and neurological status evidenced by memory, attention and executive functions, judgement and decision-making tasks. Classic chemical agents (glutamate, dopamine, GABA, acetylcholine) have been present in cognitive functions, especially cholinergic neurotransmission which plays a key role in attention processes, learning and memory. An increased content of hippocampal acetylcholine has been evidenced in murine studies after mineral water drinking. Micronutrients are significant in cognitive performance, intake of water- soluble vitamins (B group, C) and minerals, particular calcium, magnesium and zinc supplementation could be a preventive measure from neurodegenerative diseases. Aforementioned therapeutic approach is a feasible recommendation in Alzheimer disease, completed with ingestion silicic acid-rich mineral water. A research with healthy participants identified improvement of anaerobic performance after high mineral alkaline water consumption for three consecutive days before anaerobic exercise. In a randomized control trial, balneotherapy with a high mineralized, sodium, chloride, calcium, magnesium, sulphate content geothermal water applicated in a population of working seamen presents positive outcome on stress management, mood, motivation and cognitive functions. Significant therapeutic effects were obtained in patients with neurasthenia using low mineralized chloride, sodic, hydrocarbonate, sulfide water baths, resulted in equilibration on the indices of cardiohemodynamics and lipid metabolism, amelioration on the status of vegetative nervous system, perception, attention and memory.

Conclusion. The study underlined the link between hydration status and cognitive performance from current literature. Balneotherapy is a particular strategy to influence functional status of the brain, could be considered a practical vector of nutritional elements.

Key words: *water, mineral, cognitive*