

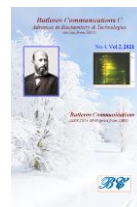


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Hydrogen water for athletes

Oscar. R. Karataev,^{1,2} and Anatoly A. Lapin^{1,2,*+}

¹ *Department of "Information Technologies and Digital Economy". Kazan National Research Technical University Named after A.N. Tupolev – KAI". Karl Marx St., 10. Kazan, 420111. Republic of Tatarstan. Russia. Phone: +7 917 864 2898.*

E-mail: lapinanatol@mail.ru

² *Department "Economics and Management in Sports". Volga State Academy.*

Universiad Village, 15. Kazan, 420010. Republic of Tatarstan. Russia.

Phone: +7 917 864 2898. E-mail: lapinanatol@mail.ru

*Supervising author; +Corresponding author

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Abstract

The analytical review considers data on the systematization and generalization of scientific publications mainly for 22 years (in the period from 1999 to 2021), identifying the prospects for the use of molecular hydrogen in sports medicine, the use of hydrogen water for fatigue (including chronic) caused by dehydration of the athletes body under the influence of physical exertion, as well as in swimming and bathing. 30 Publications were identified, including 19 are cited in the international database Scopus, 4 – Web of Science, 2 – Google Scholar, 3 – Elsevier, 4 – Chemical Abstracts. Among the publications identified on the topic, there are eight review articles on this topic, of which three are Russian. The relevance of molecular hydrogen research in the world has increased significantly, since it has turned out to be an extremely unique reagent, since it has the ability to act at the cellular level. Hydrogen is able to overcome the blood-brain barrier, penetrate into the mitochondria and other areas of cells, where it exhibits antioxidant, anti-apoptotic, anti-inflammatory and cytoprotective properties. The purpose of the scientific review is the theoretical justification of the current state of the use of hydrogen water in sports and sports medicine. For this purpose, evidence is provided regarding the influence of the consumption of molecular hydrogen and hydrogen water on changes in physiological and biochemical parameters, taking into account the oxidative stress caused by physical exertion. In addition, this review highlights possible future directions in this area of research. Currently, there are studies aimed at the use of molecular hydrogen and its effectiveness in sports, in our opinion, it is necessary to investigate and publish the long-term results of its effect on the body of athletes, but at the same time it has a number of advantages compared to the use of

conventional antioxidants (vitamins C and E) and therefore it is necessary to continue research in various areas of the use of molecular hydrogen in sports science.

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