

28-Days Hydrogen-Rich Water Supplementation Affects Exercise Capacity in Mid-Age Overweight Women: 2942 Board #225 June 1 3: 30 PM - 5: 00 PM : Medicine & Science in Sports & Exercise

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28-Days Hydrogen-Rich Water Supplementation Affects Exercise Capacity in Mid-Age Overweight Women

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(No relevant relationships reported)

Medicine & Science in Sports & Exercise [50\(5S\):p 728-729, May 2018.](#) | DOI: 10.1249/01.mss.0000538402.25953.d2

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Molecular hydrogen (H₂) improves body composition, metabolic profiles and mitochondrial function in overweight women, yet no studies so far evaluated the effectiveness of H₂ for improving exercise capacity in this population.

PURPOSE: To examine the effects of 28-days supplementation with 1 L per day of hydrogen-rich water (HRW) on exercise capacity and quality of life in overweight mid-age women.

METHODS: Twelve women (age 53.8 ± 13.0 years, BMI 28.8 ± 3.3 kg/m², VO_{2max} 22.3 ± 3.7 ml/kg/min) participated in this randomized, placebo-controlled, cross-over, repeated-measure interventional study. All participants were allocated in a double-blind design to receive two randomly assigned trials: first group received 1 L per day of HRW (supplying ~ 9 ppm of H₂), while the second group received placebo (tap water). Participants were evaluated at baseline, and following 28 days of intervention. The primary endpoint was the change in cardiorespiratory endurance (VO_{2max}) assessed at baseline and at 28 days follow-up. Secondary outcomes included change from baseline to end of treatment in values for work capacity, impact of weight on quality of life (IWQoL), and hematological biomarkers. Participants were asked to maintain their usual lifestyle, dietary intake and not to use other dietary supplements during the study.

RESULTS: HRW intervention significantly improved VO_{2max} as compared to placebo at 28-day follow-up (26.2 ± 4.8 ml/kg/min vs. 24.2 ± 4.1 ml/kg/min; *P* = 0.03). Differences were found for time to exhaustion and total work completed during an incremental exercise, with HRW resulting in improvement of both variables as compared to placebo (*P* < 0.05). IWQoL scores and hematological markers were not affected by either intervention (*P* > 0.05).

CONCLUSION: Results indicate that HRW can be used as an alternative hydration formulation to positively affect exercise performance in mid-age overweight women.

Supported by the Serbian Ministry of Education, Science and Technological Development (175037), the Provincial Secretariat for Higher Education and Scientific Research (114-451-710), the University of Novi Sad Faculty of Sport and PE (2017 Annual Award) and HRW Natural Health Products Inc, New Westminster, BC, Canada. Clinical trial registration <http://www.clinicaltrials.gov>, ID number NCT02832219.

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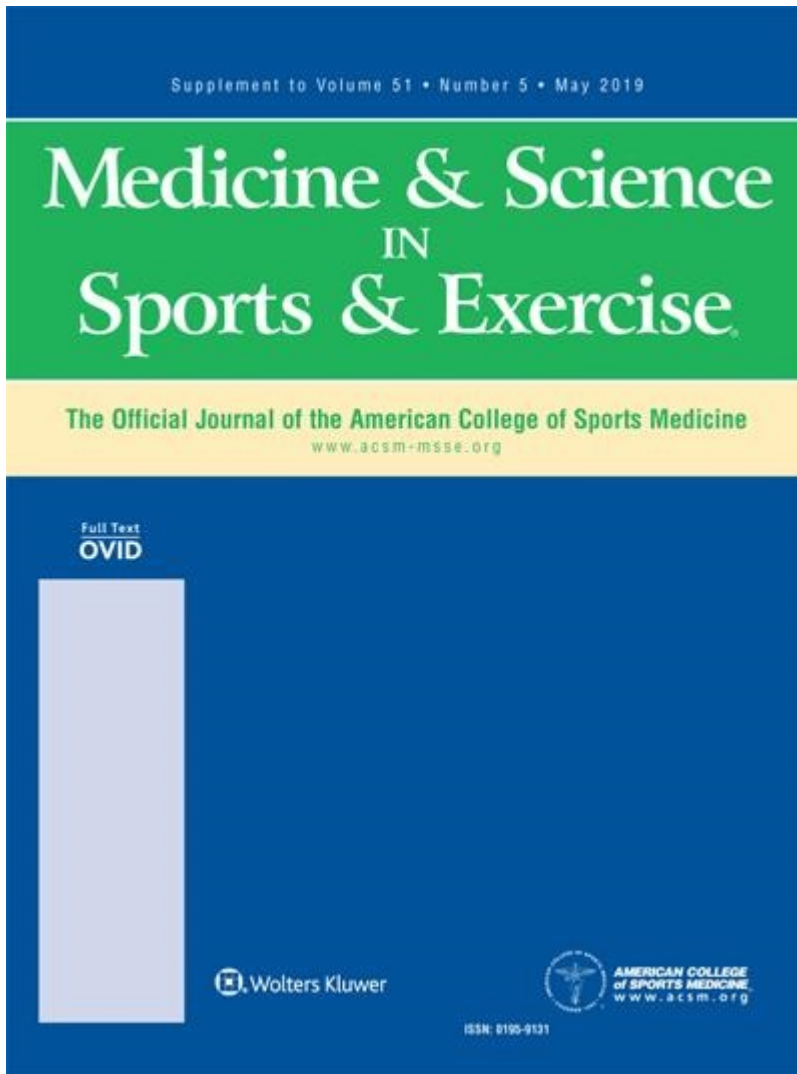
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