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## Hydrogen-rich water for improvements of mood, anxiety, and autonomic nerve function in daily life

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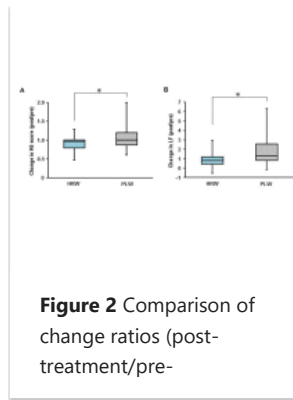
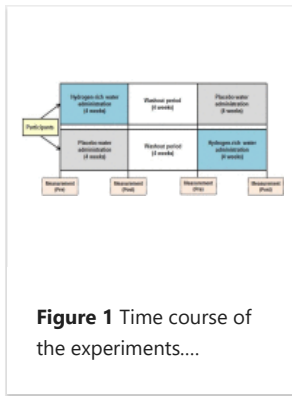
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### Abstract

Health and a vibrant life are sought by everyone. To improve quality of life (QOL), maintain a healthy state, and prevent various diseases, evaluations of the effects of potentially QOL-increasing factors are important. Chronic oxidative stress and inflammation cause deteriorations in central nervous system function, leading to low QOL. In healthy individuals, aging, job stress, and cognitive load over several hours also induce increases in oxidative stress, suggesting that preventing the accumulation of oxidative stress caused by daily stress and daily work contributes to maintaining QOL and ameliorating the effects of aging. Hydrogen has anti-oxidant activity and can prevent inflammation, and may thus contribute to improve QOL. The present study aimed to investigate the effects of drinking hydrogen-rich water (HRW) on the QOL of adult volunteers using psychophysiological tests, including questionnaires and tests of autonomic nerve function and cognitive function. In this double-blinded, placebo-controlled study with a two-way crossover design, 26 volunteers (13 females, 13 males; mean age,  $34.4 \pm 9.9$  years) were randomized to either a group administered oral HRW (600 mL/d) or placebo water (PLW, 600 mL/d) for 4 weeks. Change ratios (post-treatment/pre-treatment) for K6 score and sympathetic nerve activity during the resting state were significantly lower after HRW administration than after PLW administration. These results suggest that HRW may reinforce QOL through effects that increase central nervous system functions involving mood, anxiety, and autonomic nerve function.

**Keywords:** anxiety; autonomic nerve function; hydrogen-rich water; mood; quality of life.

### Figures



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