

Hydrogen-Rich Water, Mood & Anxiety

What a small double-blind crossover trial in healthy adults found - and what it cannot yet prove

Study at a glance

26	600 mL	4 weeks	Crossover
healthy adults completed	daily HRW or placebo	per treatment period	each person tried both

What researchers tested

The study enrolled 31 healthy adults; 26 completed both phases (13 women and 13 men; mean age 34.4 years). Participants received either hydrogen-rich water or identical-source placebo water for four weeks, followed by a four-week washout and then the opposite condition.

HRW	0.8-1.2 ppm dissolved hydrogen; two 300 mL aluminium pouches daily, consumed within five minutes at breakfast and dinner.
PLACEBO	The same mineral water and packaging, but without hydrogen. Participants reported no difference in taste.

What was measured

Validated questionnaires assessed psychological distress (K6), fatigue, depression symptoms, sleep quality and daytime sleepiness. Researchers also measured resting autonomic activity, performance on a switching-attention task, and blood markers of inflammation and oxidative stress.

Why the crossover design matters

Every participant received both HRW and placebo water. This reduces the influence of differences between individuals, although the small sample still limits certainty and generalisability.

Results, Context & Limitations

The findings were promising but selective. The strongest interpretation comes from outcomes that differed between the HRW and placebo conditions.

Placebo-controlled findings

SIGNAL

Psychological distress

The change in K6 score - a brief measure covering mood and anxiety symptoms - was significantly more favourable after HRW than after placebo water.

SIGNAL

Resting autonomic activity

Low-frequency power, interpreted by the authors as reflecting sympathetic activity, was significantly lower after HRW than after placebo. Other autonomic measures did not change significantly.

Changes that need more caution

WITHIN HRW

Fatigue and sleep quality

Chalder fatigue and PSQI sleep-quality scores improved from baseline during HRW. However, the between-condition comparison was not significant, so these results do not establish an advantage over placebo.

WITHIN HRW

Motivational response

Reaction time between task trials became faster from baseline during HRW, but the change did not differ significantly from placebo. Accuracy and error counts were also not significantly different.

NO SIGNAL

Blood markers

No significant differences were found in the measured blood markers of inflammation or oxidative stress. Participants were healthy and values were already within normal ranges.

Balanced interpretation

Four weeks of hydrogen-rich water produced preliminary signals in psychological distress and one resting autonomic measure in a small group of healthy adults. The trial does not show that HRW treats anxiety, depression, sleep disorders or any other medical condition.

Important limitations

Small, short study: only 26 completers and four weeks per condition. Healthy sample: results cannot be assumed to apply to people with diagnosed mental-health or neurological conditions. Many outcomes: multiple questionnaires and physiological measures were tested, while only a small number differed from placebo. Mechanism not demonstrated: proposed effects involving oxidative stress or inflammation remain hypotheses because measured blood markers did not change. Funding: the study received funding from Melodian Corporation, which supplied the study water; the other authors declared no conflicts.

Practical takeaway

This study supports further research into hydrogen-rich water and day-to-day wellbeing, but it should be viewed as early evidence rather than clinical proof. Anyone experiencing persistent anxiety, low mood, sleep problems or other symptoms should seek appropriate professional care; hydrogen water should not replace assessment or treatment.