

# “Hydrogen intake relieves alcohol consumption and hangover symptoms in healthy adults: a randomized and placebo-controlled crossover study” (2022)



## Researchers tested whether molecular hydrogen (H<sub>2</sub>) could reduce:

- alcohol levels after drinking
- hangover severity
- mental fog/cognitive impairment after alcohol.

**What was the goal?** Researchers wanted to answer: Can hydrogen reduce hangover symptoms and help the body process alcohol better? Their theory was that alcohol **causes**:

- oxidative stress
- inflammation
- acetaldehyde-related toxicity (the toxic alcohol byproduct that contributes to hangovers).

**Hydrogen might help reduce some of this damage.** How was the study done?

- 20 healthy adults
- Randomized, double-blind, placebo-controlled crossover study (stronger study design than many hydrogen studies)
- Everyone experienced both conditions on separate test days:

## Hydrogen condition:

1. Inhaled hydrogen + oxygen gas for 1 hour
2. Drank 100 mL liquor (40% alcohol) within 10 minutes
3. Drank hydrogen-rich water

## Placebo condition:

1. Inhaled regular air
2. Same alcohol amount
3. Regular water

Then researchers compared the outcomes. What did they measure? Researchers tracked:

- Breath alcohol concentration (BrAC) → alcohol level on breath testing
- Hangover symptoms
  - Cognitive performance/attention
  - executive function (mental sharpness/decision-making).

## Main findings

- ✓ Lower alcohol levels after drinking. The hydrogen group had significantly lower breath alcohol levels at 30, 60, and 90 minutes after drinking.
- ✓ Fewer hangover symptoms. People reported milder hangovers overall with hydrogen. Examples that improved included: headache, sweating, fatigue, general discomfort.
- ✓ Better mental performance. Attention and executive function scores were better after drinking when participants used hydrogen. In plain English: People seemed mentally sharper and less foggy.
- ✓ Interesting sex differences
  - Women tended to have higher alcohol levels and stronger hangovers overall, but hydrogen still appeared to reduce symptoms.

This study suggests:

Hydrogen may help the body recover from alcohol more efficiently and reduce hangover severity.



To Read The Full Study Please

