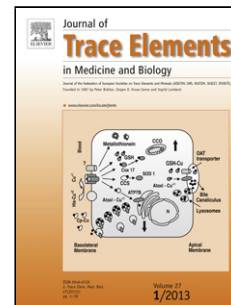


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Some bottled water may be salubrious.

by

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Highlights

- Hard water protects the human heart
- Bottled water usually is soft
- Beer and wine contain very hard water
- Hard water may improve copper metabolism

ABSTRACT

Hard drinking water seems protective against cardiovascular disease compared to soft water. Published data on calcium and magnesium in bottled water products were evaluated to determine water hardness. Data on water chemistry of thirty-three products were obtained from the internet and hardness, as calcium carbonate, was calculated. Approximately two thirds of the products were soft according to criteria of the US Geological Survey; only one fifth were very hard. Beer and wine also were found to be very hard. Consumers and suppliers should avoid soft water. Some beneficial, cardiovascular effects of beer and wine may be the result of hard water.

Keywords: Alcoholic beverages, Copper, Cardiovascular health, Epidemiology, Hard water, Water quality

Some bottled water may be salubrious**1. Introduction**

Sixty years ago Kobayashi[1] reported a relationship between water chemistry and risk of vascular disease, a phenomenon that has come to be known as the “water factor”. The bulk of the data show lower risk with harder water[2]. Crawford[2, 3] concluded the correlation may be causal because of changes in risk with changes in water chemistry. Lacey and Shaper[4] reviewed and refined the earlier data[3] and decided that the effect is “real and causal”. This association may explain why heart disease deaths are more common in the coastal areas of the United States than in the Midwest[5].

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