



## Health Advisory Levels

Drinking water Health Advisory Levels serve as the informal technical guidance from the Environmental Protection Agency (EPA) for unregulated drinking water contaminants to assist Federal, State and local officials in protecting public health as needed. They are not to be construed as legally enforceable Federal standards.

### ***Manganese***

In humans, little is known about health effects resulting from exposure to manganese in food or water. Because humans generally exert an efficient control over manganese concentrations in their bodies, manganese is generally not considered to be very toxic when ingested in the diet. In fact, there are no quantitative data available to indicate toxic levels of manganese in the diet of humans. Exceeding the secondary drinking water standard for manganese may cause adverse aesthetic effects including brown blotches in laundry items and black precipitates. The EPA advisory level for manganese is currently 0.3 mg/L.

### ***Nickel***

Nickel has the potential to cause decreased body weight, heart and liver damage, and dermatitis from long-term exposure at levels above the advisory level. The most common health effect of nickel in humans is an allergic reaction characterized by a skin rash and, less commonly, asthma. Initial sensitization to nickel is believed to result from dermal contact; however, people who are sensitive to nickel can react when they drink it in water. The EPA advisory level for nickel is currently 0.1 mg/L.

### ***Sodium***

A goal of 2.4 g/day dietary sodium has been proposed by several government and health agencies. Drinking water containing between 30 and 60 mg/L is unlikely to be perceived as salty by most individuals and would contribute only 2.5% to 5% of the dietary goal if tap water consumption is 2 L/day. At the present time the EPA guidance level for sodium in drinking water is 20 mg/L. This value was developed for those individuals restricted to a total sodium intake of 500 mg/day and should not be extrapolated to the entire population.

### ***Sulfate***

A health-based advisory of 500 mg of sulfate/L is recommended. This value depends on the absence of other materials in drinking water which could lower the sulfate level associated with a laxative effect. Where the water contains high concentrations of total dissolved solids, laxative-like effects may occur if the water is mixed with concentrated infant formula or a powdered nutritional supplement. In such situations, an alternate low-mineral-content water source is advised. Infants are more susceptible than adults to diarrheal water loss because of differences in gastrointestinal structure and function.

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***Healthy People. Healthy Community. Healthy Future.***

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## ***Zinc***

The advisory level for zinc is based on a study that investigated the effects of zinc supplements on copper and iron balance in adult females. A decrease in a copper-containing enzyme occurred after 10 weeks of zinc exposure. In addition, several studies have found that zinc supplements decrease high-density lipoprotein (HDL) cholesterol (the “good” form of cholesterol) levels of adult males. The EPA advisory level for zinc is currently 2.0 mg/L.

Source: Abridged from

[http://water.epa.gov/action/advisories/drinking/upload/2003\\_03\\_05\\_support\\_cc1\\_sodium\\_dwreport.pdf](http://water.epa.gov/action/advisories/drinking/upload/2003_03_05_support_cc1_sodium_dwreport.pdf)

[http://water.epa.gov/action/advisories/drinking/upload/2008\\_01\\_10\\_support\\_cc1\\_sulfate\\_healtheffects.pdf](http://water.epa.gov/action/advisories/drinking/upload/2008_01_10_support_cc1_sulfate_healtheffects.pdf)

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