



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

# Department of Environmental Protection

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October, 2013

Dear Boards of Health:

As part of a continued effort to use the most up-to-date information to protect public health, the Massachusetts Department of Environmental Protection (MassDEP) is announcing a new outreach initiative designed to raise awareness regarding manganese in drinking water. Recent studies<sup>1</sup> have identified public health risks associated with the ingestion of elevated levels of manganese, especially among infants and young children. These same studies suggest that in some cases, the concentration of manganese in drinking water can represent a significant contribution to an individual's daily intake.

Manganese is a common naturally-occurring mineral found in rocks, soil, groundwater, and surface water. Manganese is a natural component of most foods and it is an **essential** trace mineral in our diets. The principal source of exposure to manganese is from the food, but drinking water can contribute to an increase in the overall intake of manganese. The USDA's recommended dietary allowance is 1.8 - 2.3 mg/day for adults. Grains and beans particularly provide manganese in our diets. For example, a cup of cooked enriched white rice contains 0.75 mg. Studies indicate that infants may not process manganese as well as older children and adults. Formula fed infants or children may consume more manganese than the rest of the family especially if they are fed with formula that is fortified with manganese and the formula is prepared with water that also contains manganese.

Currently, manganese is included on the list of federal and state Secondary Maximum Contaminant Level (SMCL) for drinking water. The SMCL for manganese is 0.05 mg/L, equivalent to 50 micrograms per liter (ug/L). This is an aesthetics-based limit. When concentrations are greater than this, the water may be discolored and taste bad. In addition the USEPA and MassDEP have established public health advisory levels for manganese in drinking water. The health advisory levels are much higher than the SMCL level, so that you are likely to have aesthetic problems with your drinking water prior to reaching the health advisory levels. Over a lifetime, the USEPA recommends that people drink water with manganese levels less than 0.3 mg/L (300 ug/L) and over the

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<sup>1</sup> For a list of these recent studies, please see: "REFERENCES: MANGANESE IN DRINKING WATER" posted on the MassDEP website at: [www.mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html#9](http://www.mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html#9)  
This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TDD# 1-866-539-7622 or 1-617-574-6868  
MassDEP Website: [www.mass.gov/dep](http://www.mass.gov/dep)

short term, USEPA recommends that people limit their consumption of water with levels over 1.0 mg/L (1000 ug/L). Children up to 1 year of age should not be given water with manganese over 0.3 mg/L (300 ug/L), nor should formula for infants be made with that water for longer than 10 days.

Manganese has been detected at elevated levels in a few drinking water sources in the Commonwealth and MassDEP is working with public drinking water systems to continue to collect additional data to determine manganese levels for all systems. MassDEP is also recommending that private well owners sample to determine the concentration of manganese in their well water in accordance with "Private Wells - Testing Parameters and Frequency Guidelines", which can be found on the MassDEP website at <http://www.mass.gov/eea/docs/dep/water/laws/i-thru-z/priwells.pdf>.

As part of MassDEP's on-going outreach initiative on manganese, the MassDEP, in conjunction with the Massachusetts Department of Public Health, is sending out information to all health professionals overseeing the care of young children and pregnant women. MassDEP will also share this information with the Department of Early Education and Care (DEEC). You may receive questions regarding manganese in drinking water from the health professionals, the general public as well as from private well owners. To assist you with responding to questions on the health effects, please see the enclosed fact sheet for distribution.

For more information on manganese in public drinking water please visit our webpage:  
[www.mass.gov/eea/agencies/massdep/water/drinking](http://www.mass.gov/eea/agencies/massdep/water/drinking)

You may also contact the Drinking Water Program at [program.director-dwp@state.ma.us](mailto:program.director-dwp@state.ma.us). For a contact list for all public water systems in the Commonwealth you may visit:  
[www.mass.gov/eea/docs/dep/about/organization/pwscont.pdf](http://www.mass.gov/eea/docs/dep/about/organization/pwscont.pdf)

Yours truly,

A handwritten signature in black ink, appearing to read "Yvette DePeiza". The signature is fluid and cursive, with a large initial "Y".

Yvette DePeiza  
Program Director,  
Drinking Water Program, MassDEP

Attachment: Manganese Factsheet and Q/A for Consumers