

Sodium in Drinking Water

Sodium is a mineral that can be found in drinking water supplies. The most common sources of sodium in drinking water are from natural occurrences, road salt, water treatment chemicals and ion-exchange water softening units.

The human body needs sodium in order to maintain blood pressure, control fluid levels and for normal nerve and muscle function. Sodium is found in most foods, soft water, some mineral waters and drugs such as antacids, laxatives, aspirin, and cough medicines.

Sodium in drinking water is not a health concern for most people but may be an issue for someone with severe hypertension, congestive heart failure or on a sodium-restricted diet. Further, it is recommended that water from a water softer *not* be given to infants and not be used in the preparation of infant beverages including formula and juice. Water softeners may increase the levels of sodium in drinking water. It is recommended to have a separate water line for drinking which bypasses the water softener.

The Guidelines for Canadian Drinking Water Quality and the Ontario Drinking Water Standards

All natural waters contain some sodium. The Guidelines for Canadian Drinking Water Quality and Ontario Drinking Water Standards set an aesthetic objective of 200 mg/L. Sodium concentrations above 200 mg/L may alter the taste of water.

The *Ontario Drinking Water Systems Regulation 170/03* under the *Safe Drinking Water Act* requires reporting to the local Medical Officer of Health when sodium levels in public drinking water supplies exceed 20 mg/L or more. At this point, the local Medical Officer of Health informs local physicians, as such information is intended to help persons on sodium-restricted diets control their sodium intake.

Average Daily Intake of Sodium

Sodium is not considered to be toxic. However, most people consume more sodium than they need. While the average daily intake of sodium for healthy adults ranges from 2000 to 5000 mg, the daily amount of sodium needed to meet the needs of most healthy adults is 1500 mg. Adverse health effects would not be expected for healthy adults if their sodium intake is below the upper tolerable intake level of 2300 mg per day.

Although less than 5-10% of the daily intake of sodium comes from water, the intake from this source could be significant for persons suffering from severe hypertension or congestive heart failure who may require a sodium-restricted diet. People with these conditions should consult their physicians if the sodium level in their drinking water exceeds 20 mg/L.

Sodium occurs naturally in all foods. Natural levels vary considerably for different types of food, and food processing can have a marked effect on these levels. The main source of sodium in the diet comes from processed foods such as snack foods, fast foods, processed meats, soups, crackers, and condiments. For example, a homemade lean hamburger patty has approximately 74 mg of sodium while one cup of processed tomato juice can contain 691 mg of sodium.

More examples of sodium levels in food and beverages:

Apple juice (1 cup) = 18 mg

Tomato juice (1 cup) = 691 mg

Cola beverage (1 cup) = 10 mg

Chicken noodle soup (1 cup) = 1169 mg

1 banana (medium) = 1 mg

Bottled water = 36 mg/L (varies, check label)

(Reference: Canadian Nutrient File 2005)

Sodium-Restricted Diets

If the sodium concentration in your drinking water is 20 mg/L then drinking up to two litres of water per day would contribute only 40 mg of sodium to your diet. This is about 2% of a teaspoon of salt. For healthy adults, this sodium level in drinking water does not pose a risk. Even for individuals on very strict sodium-restricted diets of 500 mg of sodium per day, two litres of water would only account for 8% of their daily allotment of sodium

Use of Water Softeners

Most water-softening devices use ionic exchange to replace calcium with sodium. While this reduces the hardness of your water, it can add significant amounts of sodium at your tap. If you need a water softener consider a separate un-softened supply for cooking and drinking purposes.

If you have a concern about high sodium levels in your drinking water, there are filtration units and treatment processes available to remove sodium from your drinking water.

Remember...

If you are on a strict sodium-restricted diet, you should consult with your family physician. Your doctor may recommend that you drink sodium-free packaged or bottled water, or remove sodium from your water by using a water treatment device.

For more information on sodium in drinking water or to speak with a Public Health Inspector, please call *York Region Health Connection* at 1-800-361-5653.

Information Sources: Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate, The National Academies, 2004. Canadian Nutrient File, Health Canada 2005., Health Canada, Canadian Water Quality Association, U.S.E.P.A.

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