

The Massachusetts Department of Environmental Protection
and The Department of Public Health

SODIUM

(For distribution to consumers upon request)

The principal source of exposure to sodium is from the diet. The average American diet can contain anywhere from 2,000 mg/d to 24,000 mg/d depending on the amount of table salt added to food. Fruits, vegetables, and meats naturally contain sodium. Many foods such as dairy products and processed food products contain higher concentrations of sodium. For example, 2 slices of white bread could contain close to 300 mg of sodium, 1 frankfurter 400- 800 mg, and diet cola 20 mg of sodium. Sodium is often added during food preparation and at the table to food. Drinking water contributes only a small fraction (less than 10%) to the overall sodium intake.

Sodium is a naturally occurring common element found in soil and water. It is necessary for the normal functioning of human systems. Sodium is part of a complex physiological mechanism involved in regulating fluids in human systems. The normally functioning kidney compensates for moderate changes in sodium intake by increasing or decreasing sodium and fluid excretion in the urine. Small changes in the sodium intake do not adversely affect plasma sodium concentrations in the majority of the population. The natural mechanisms of fluid regulation maintain a relatively constant concentration of plasma sodium. Adequate daily total sodium intakes have been estimated to range from 115 to 750 milligrams per day (mg/d) for infants, 325 to 2700 mg/d for children and 1100 to 3300 mg/d for adults.

Some people, however, have difficulty regulating fluid volume as a result of several diseases, including congestive heart failure, kidney failure, and hypertension. Some individuals are genetically susceptible to hypertension, a condition that may be enhanced by elevated plasma sodium levels. Monitoring sodium intake in these individuals is important in the management of their particular malady.

The Massachusetts Department of Environmental Protection (MassDEP) is requiring all water suppliers to notify their local Boards of Health, Massachusetts Department of Public Health, and MassDEP of the detected concentrations of sodium in drinking water. Notification is required so that individuals who are on sodium restricted diets or who wish to monitor their sodium intake for other reasons will be able to take the amount of sodium in their water into account.

The guideline of 20 milligrams per liter for sodium when exceeded does not require treatment of the water to reduce the levels to prevent adverse health effects on public health. Rather the guideline represents a level of sodium in water that physicians and sodium sensitive individuals should be aware of in cases where sodium exposures are being carefully controlled.