

# Road De-Icers: Drinking Water Standards and Consumer Concerns

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# Sodium: Benchmark Levels

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- ❑ Drinking Water Equivalent Level (DWEL) for Sodium: 20 mg/L
  - based on 1965 American Heart Association recommendation
  - guidance for individuals on sodium-restricted diets only
  - Water systems must report concentrations >20 mg/L
- ❑ Drinking Water Advisory for Sodium – consumer acceptability: 30 – 60 mg/L
  - below taste threshold for most individuals
  - about 2.5 – 5% of recommended daily intake

# Chloride: Benchmark Level

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- Secondary Maximum Contaminant Level:  
250 mg/L
  - based on aesthetics
  - not Federally enforceable

# EPA Regulatory Determination for Sodium

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- ❑ Sodium on 1998 Contaminant Candidate List
- ❑ Review included:
  - Whether may have adverse health effects
  - Whether occurs in public water systems at frequency and levels having public health concern
  - Whether regulation presents meaningful opportunity for health risk reduction
- ❑ EPA determined not to regulate sodium (July 2003)

# Sodium Health Effects

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- ❑ High sodium linked to hypertension
- ❑ Hypertension associated with increased risk of coronary disease, stroke
- ❑ Sensitive populations include infants/children, individuals with hypertension, elderly, African Americans, individuals with renal disease
- ❑ However, reduced sodium intake alone may not reduce risk of adverse health effects
- ❑ Lifestyle, behavior and balanced diet (including adequate potassium, calcium and magnesium) most successful in reducing hypertension

# Sodium, Dietary Intake & Drinking Water

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- ❑ Recommended daily intake for healthy adults: 2,300 mg/day
- ❑ Average US dietary intake 4,000 – 6,000 mg/day
- ❑ Most sodium comes from food intake (especially salt added in food processing and preparation)
- ❑ Median concentration of sodium in drinking water est. 16 mg/L
- ❑ This amounts to ~1.5% of dietary goal, <1% of average intake:
  - $16 \text{ mg/L} \times 2 \text{ L/day} = 32 \text{ mg/day}$

# Sodium: Dietary Reference Intake

(Food & Nutrition Board, Institute of Medicine, 2004)

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<b>Adults, Age Group</b>	<b>Adequate Intake</b>
19 - 50 years	1.5 g/day
51 - 70 years	1.3 g/day
> 70 years	1.2 g/day

Tolerable Upper Intake: 2.3 g/day

# Chloride: Dietary Reference Intake

(Food & Nutrition Board, Institute of Medicine, 2004)

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<b>Adults, Age Group</b>	<b>Adequate Intake</b>
19 - 50 years	2.3 g/day
51 - 70 years	2.0 g/day
> 70 years	1.8 g/day

Tolerable Upper Intake: 3.6 g/day