Road De-Icers: Drinking Water Standards and Consumer Concerns

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Region III

Potomac River
Drinking Water
Source Protection Partnership

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Sodium: Benchmark Levels

- **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

- Secondary Maximum Contaminant Level: 250 mg/L
  - based on aesthetics
  - not Federally enforceable
EPA Regulatory Determination for Sodium

- 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

- 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

- 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 mg/L x 2 L/day = 32 mg/day
### Sodium: Dietary Reference Intake

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

<table>
<thead>
<tr>
<th>Adults, Age Group</th>
<th>Adequate Intake</th>
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<tbody>
<tr>
<td>19 - 50 years</td>
<td>1.5 g/day</td>
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<tr>
<td>51 - 70 years</td>
<td>1.3 g/day</td>
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<tr>
<td>&gt; 70 years</td>
<td>1.2 g/day</td>
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Tolerable Upper Intake: 2.3 g/day
Chloride: Dietary Reference Intake
(Food & Nutrition Board, Institute of Medicine, 2004)

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<tr>
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<tr>
<td>&gt; 70 years</td>
<td>1.8 g/day</td>
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Tolerable Upper Intake: 3.6 g/day