Your Community Benefits

- Thousands of research studies and 60 years of experience have shown that water fluoridation is safe, effective and the best method of improving oral health in a community.
- Water fluoridation is recognized as a major public health achievement of the 20th century by the Centers for Disease Control and Prevention (CDC).
- Although dental caries (tooth decay) is largely preventable, it remains the most common chronic disease of children aged 5 to 17 years. In the U.S., tooth decay affects:
  - 1 out of 4 elementary school children
  - 2 out of 3 adolescents
  - 9 out of 10 adults
- Both children and adults benefit from water fluoridation. Studies have demonstrated that people in communities with fluoridated water have 20 to 40 percent less tooth decay than those in communities without fluoridated water.
- The cost to fluoridate water for the lifetime of one person is less than the cost to treat one cavity.
- Every dollar spent on fluoridation saves $38 in avoided dental bills.
- In 2002, the CDC estimated that 66 percent of U.S. residents who receive their water from community water systems, or 170 million people, had access to fluoridated water. The Healthy People 2010 goal is to increase this to 75 percent. In South Carolina, 91.4 percent of the population has access to fluoridated water, resulting in better oral health, less dental pain, and fewer cavities for millions of people living in South Carolina.

Optimal Fluoridation

For South Carolina, the most benefit to oral health is achieved when waters are fluoridated to 0.8 mg/L.

Optimal fluoridation is achieved when the fluoride level in potable water is maintained within the control range of 0.7 to 1.3 mg/L.

The benefits of fluoridation are quickly lost when fluoride levels drop below the optimal range.

The U.S. Environmental Protection Agency (EPA) has set both the maximum contaminant level (MCL) and the maximum contaminant level goal (MCLG) for fluoride to 4 mg/L. In addition, the secondary maximum contaminant level goal (SMCLG) of 2 mg/L has been set for fluoride to minimize potential dental fluorosis (staining of the teeth).

Recommended fluoride overfeed actions for community water systems, MMWR 1995 (CDC)

<table>
<thead>
<tr>
<th>Fluoride level</th>
<th>Actions Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 mg/L above control range to 2.0 mg/L</td>
<td>1. Leave the fluoridation system on.</td>
</tr>
<tr>
<td>2.1 mg/L to 4.0 mg/L</td>
<td>2. Determine malfunction and repair.</td>
</tr>
<tr>
<td>4.1 mg/L to 10.0 mg/L</td>
<td>3. Notify supervisor and report the incident to the appropriate county or state agencies.</td>
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<tr>
<td>10.1 mg/L or greater*</td>
<td>4. Determine malfunction and repair. Then, with supervisor’s permission, restart the fluoridation system.</td>
</tr>
</tbody>
</table>

Safety Corner

Although fluoride is entirely safe at the recommended optimum dosage levels in potable water, it can be harmful at more concentrated levels.

When handling sodium fluorosilicate or sodium fluoride, always wear Neoprene gloves, an apron, boots, and a NIOSH/MSHA dust respirator with a soft rubber face-to-mask seal and replaceable cartridges.

Inspect all pipes and tubing regularly for leaks, and repair them promptly if necessary.

Always clean equipment and gear after their exposure to sodium fluorosilicate or sodium fluoride. Promptly sweep spills and keep area clean to minimize dust. Do not touch or puncture bags; use a knife to open bags with a clean cut.

Do not consume food or beverages in proximity to the fluoride storage area.

Never store sodium fluorosilicate or sodium fluoride with other chemicals. Store unopened bags on pallets, not directly on concrete floors. When adding sodium fluorosilicate or sodium fluoride to the saturator or hopper, ensure that the ventilation is adequate to evacuate fugitive dust.

Important Contacts

For questions on the Fluoridation Program in South Carolina, contact the Department of Health and Environmental Control, Bureau of Water, 803-898-4300.

For questions on the health effects of fluoridation, contact the Department of Health and Environmental Control, Bureau of Water, 803-898-4300.

For questions on drinking water in South Carolina, contact the Department of Health and Environmental Control, Bureau of Water, 803-898-4300.

The following Web sites are good sources of information about fluoridation:
- American Dental Association: www.ada.org/public/topics/fluoride/index.asp
- Centers for Disease Control and Prevention: www.cdc.gov/OralHealth/topics/fluoridation.htm
- American Water Works Association: http://awwa.org/Advocacy/pressroom/fluoride.cfm

This poster was issued by the State of South Carolina, Department of Health and Environmental Control, Bureau of Water, 2004.