

STAFF REPORT

TO: Mayor and City Council

VIA: Gary Jackson, City Manager

FROM: David Hanks, Water Resources Director

SUBJECT: Fluoridation of City of Asheville Water Supply

DATE: February 12, 2008

Summary Statement: The City of Asheville has added fluoride to its drinking water since 1965. Fluoride was added to the drinking water through a voter referendum on May 11, 1965 and upheld by a subsequent voter referendum on September 12, 1967. The City currently uses the chemical Hydrofluorosilicic Acid to maintain its residual fluoride level. The City Attorney has reviewed the previous voter referendums and a positive voter referendum would be required to remove fluoride from the Asheville water system.

Review: The Center for Disease Control (CDC) and the Environmental protection Agency (EPA) have a standard for residual fluoride in drinking water at 1.0 parts per million (ppm) and shall not exceed 4.0 ppm. The City's Water Resources Department monitors the fluoride residual and has never exceeded the Maximum Contaminant Level for fluoride. The goal is to have as constant as possible a 1.0 ppm fluoride residual. Typically the fluoride residual is maintained in the 0.9 – 1.1 range. Studies by the CDC and EPA have shown that low fluoride level (below 4.0 ppm) have a positive affect on preventing tooth decay and levels above 4.0 ppm have a negative affect on teeth causing molting of teeth and bone and joint problems. All water systems which fluoridate their water supplies must monitor fluoride residuals and report these levels to the State, such as the North Carolina Department of Environment and Natural Resources monthly. Fluoride is naturally found in the ground and in most well systems.

Pro: Approximately 67 percent of Americans on public water systems receive optimally fluoridated water. The CDC sited water fluoridation as one of the 10 great health achievements of the 20th century. The first municipal drinking water system to add fluoride was Grand Rapids, Michigan on January 25, 1945. The United States Task Force on Community Preventive Services strongly recommended community water fluoridation for reducing tooth decay. The annual cost to add Hydrofluorosilicic Acid to the Asheville water supply is approximately \$16,000.00. CDC reports have shown no link to cancer or other diseases when the optimal levels of fluoridation have been used. Fluoridation is used by dentists, in tooth paste and many bottled waters and even water bottled for children who are not on fluoridated water systems.

Con: For every positive report on the benefits of water fluoridation there are an equal number of reports stating the health hazards associated with fluoridating public water supplies. The over 4.0 ppm level causing health problems has been well documented. Some other reports and articles indicate that any level of fluoridation may be harmful. Books, such as "the fluoride deception" by Christopher Bryson have been written on fluoride and health problems associated with the use of fluoride.

Recommendation: Per the City Attorney the City is obligated to fluoridate the drinking water per State and EPA established standards unless reversed by a public voter referendum.

Attachments:

- (1) Statements from the NC State Health Director
- (2) Statements from US Surgeon General
- (3) Facts Sheet



**North Carolina Department of Health and Human Services
Division of Public Health • Office of the State Health Director**
1931 Mail Service Center • Raleigh, North Carolina 27699-1931

Michael F. Easley, Governor
Dempsey Benton, Secretary

Leah Devlin, DDS, MPH
State Health Director

**Community Fluoridation
Position Statement from the Office of the State Health Director
September, 2007**

For more than 60 years, the safety of community water fluoridation has been studied more thoroughly than any other public health measure, and repeatedly confirmed as being both safe and the most cost effective preventive measure that can be taken to reduce dental cavities in people of all ages. Since the 1950s, every U. S. Public Health Service Surgeon General has committed his or her support for community water fluoridation. On July 24, 2004, Surgeon General Richard H. Carmona reaffirmed that community water fluoridation continues to be the most cost-effective, practical and safe means for reducing and controlling the occurrence of tooth decay in a community. A broad range of dental and non-dental health organizations (attached), including the Division of Public Health, North Carolina Department of Health and Human Services, support fluoridation. North Carolina has supported the fluoridation of drinking water supplies for almost 60 years – Charlotte fluoridated its water supply in 1949, and at that time was the largest water system in the world to adjust its fluoride level to the recommended optimal level. North Carolina has continued to be a leader in this area and the latest figures show that, of those North Carolinians who receive their water from a community water system, more than 88 percent receive the benefits of fluoridated water. As the size of the population receiving fluoridated water has grown, our statewide dental surveys have documented dramatic improvements in the dental health of our citizens.

Attached is a short document that is in a question and answer format that may be helpful to address the most commonly asked questions regarding fluoridation. You may obtain more information at the following Internet addresses:

- the American Dental Association page on fluoridation:
<http://www.ada.org/prof/resources/topics/fluoride.asp#facts>
- the Centers for Disease Control and Prevention (CDC):
http://www.cdc.gov/fluoridation/fact_sheets/fl_caries.htm
- Oral Health in America, A Report of the Surgeon General:
<http://www.surgeongeneral.gov/library/oralhealth/>

Staff in the Division of Public Health, Oral Health Section, routinely monitor the literature to remain current on fluoridation issues. For additional information, please contact Dr. Rebecca King, Chief, Oral Health Section, NC Division of Public Health, at 919-707-5487, or Rebecca.King@ncmail.net.

Leah M. Devlin, DDS, MPH
State Health Director



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July 28, 2004

SURGEON GENERAL STATEMENT ON COMMUNITY WATER FLUORIDATION


As noted in *Oral Health in America: A Report of the Surgeon General*, community water fluoridation continues to be the most cost-effective, equitable and safe means to provide protection from tooth decay in a community. Scientific studies have found that people living in communities with fluoridated water have fewer cavities than those living where the water is not fluoridated. For more than 50 years, small amounts of fluoride have been added to drinking water supplies in the United States where naturally-occurring fluoride levels are too low to protect teeth from decay. Over 8,000 communities are currently adjusting the fluoride in their community's water to a level that can protect the oral health of their citizens.

Over 170 million people, or 67 percent of the United States population served by public water supplies, drink water with optimal fluoride levels for preventing decay. Of the 50 largest cities in the country, 43 are fluoridated. Although water fluoridation reaches some residents in every state, unfortunately, only 24 states are providing these benefits to 75% or more of their residents.

A significant advantage of water fluoridation is that all residents of a community can enjoy its protective benefit—at home, work, school or play—simply by drinking fluoridated water or beverages and foods prepared with it. A person's income level or ability to receive routine dental care is not a barrier to receiving fluoridation's health benefits. Water fluoridation is a powerful strategy in our efforts to eliminate differences in health among people and is consistent with my emphasis on the importance of prevention.

The U.S. Centers for Disease Control and Prevention has recognized the fluoridation of drinking water as one of ten great public health achievements of the twentieth century. Water fluoridation has helped improve the quality of life in the United States by reducing pain and suffering related to tooth decay, time lost from school and work, and money spent to restore, remove, or replace decayed teeth. An economic analysis has determined that in most communities, every \$1 invested in fluoridation saves \$38 or more in treatment costs. Fluoridation is the single most effective public health measure to prevent tooth decay and improve oral health over a lifetime, for both children and adults.

While we can be pleased with what has already been accomplished, it is clear that there is much yet to be done. Policymakers, community leaders, private industry, health professionals, the media, and the public should affirm that oral health is essential to general health and well being and *take action* to make ourselves, our families, and our communities healthier. I join previous Surgeons General in acknowledging the continuing public health role for community water fluoridation in enhancing the oral health of all Americans.


Richard H. Carmona, M.D., M.P.H., F.A.C.S.
VADM, USPHS
United States Surgeon General

Fluoridation Questions & Answers

What is water fluoridation?

Fluoride is a common mineral and occurs naturally in all water and many foods. Water fluoridation is the process of adjusting the amount of fluoride in the water to the 1 part per million (ppm) concentration recommended for best protection against tooth decay. The beneficial dental effects of fluoride were discovered early in the twentieth century. In 1949 Charlotte became the first city in North Carolina to adjust the amount of fluoride in its drinking water to 1 ppm. By 2007, over 88% of North Carolinians who drink water from local water systems were receiving the benefits of fluoride.

How does water fluoridation work?

Fluoride protects teeth from decay by strengthening tooth enamel and making it more resistant to the acids that are produced by bacteria that occur naturally in our mouths. During childhood while teeth are forming, fluoride becomes a permanent part of the tooth enamel. After the teeth are formed, fluoride strengthens and repairs the enamel on the surfaces of teeth. Both children and adults of all ages benefit from fluoridation.

Is water fluoridation safe?

Fluoridation has been studied for over sixty years - more thoroughly than any other public health measure. The overwhelming weight of credible scientific evidence indicates that fluoridation of community water supplies is safe and effective. People against fluoridation have used scare tactics, such as claims that fluoridation causes heart disease, cancer, and even AIDS. Of thousands of credible scientific studies on the safety of fluoridation, none has shown health problems associated with the consumption of optimally fluoridated water. The last five U.S. Surgeons General of the United States and the Centers for Disease Control and Prevention (CDC) recommend fluoridation. It is also supported by the American Dental Association, the American Medical Association, the American Cancer Society, the American Health Association, the American Public Health Association, the Consumers Union, and many other organizations in the fields of health, science, and public affairs.

How effective is water fluoridation?

The effectiveness of fluoridation in reducing tooth decay has been extensively documented in scientific literature for more than sixty years. In the years before community water fluoridation, virtually every child grew up with severe and widespread tooth decay. After the introduction of fluoridation in the 1940s, children in communities with optimally fluoridated water had reductions in decay rates of about 60%. By 1987 a survey of North Carolina children showed that over half of all children had no dental decay. This impressive reduction is due in large part to fluoridation. Nowadays, fluoride is also available from other sources including food and beverages prepared with fluoridated water, dental products such as toothpaste, and dietary supplements. As a result, many people who drink water with low amounts of fluoride now also receive some protection against cavities. Even in this era with widespread availability of fluoride from a number of sources, studies prove water fluoridation continues to be effective in reducing dental decay by 20-40%.

What are the costs of fluoridation?

Fluoridation is the most cost-effective method of preventing tooth decay. It is also a very equitable method of disease prevention - all people benefit regardless of their incomes, educational levels, ages, or ability to get dental treatment. The average cost of fluoridation is only about 50 cents per person per year. The cost of a lifetime of fluoridation for one person is less than the cost of one filling. For every dollar spent on community water fluoridation, up to \$42 is saved in treatment costs for tooth decay.