From: Buchholtz, Kevin [mailto:kevin.buchholtz@dhhs.nc.gov]
Sent: Tuesday, December 20, 2011 10:08 AM
To: Harden, Tom
Cc: Spratt, Jean; mmcintosh@durhamcountync.gov
Subject: Water fluoridation information

Dear Tom,

Here is some information as requested in response to the citizen's concern regarding water fluoridation.

Following the Centers for Disease Control and Prevention's (CDC) recommendation, Dr. Jeffrey Engel, NC State Health Director, and the North Carolina Oral Health Section (OHS) strongly support community water fluoridation as the most effective, equitable and cost-effective measure a community can do to improve the dental health of its citizens. We've supported community water fluoridation for more than 60 years. Currently, approximately 88 percent or 5.6 million North Carolinians on public water systems currently receive the benefits. As the size of the North Carolina population receiving optimally fluoridated water has grown, our statewide epidemiological surveys have documented the subsequent improvements in dental health. To our knowledge, only the city of Brevard, in 2007, discontinued fluoridation. But they are currently considering reintroducing fluoride to their public water supply.

Tooth decay is the most common chronic disease of childhood and is almost entirely preventable with good dental practices. It is caused by certain bacteria in the mouth, which produce acid that removes minerals from the surface of the tooth.

Fluoride helps to remineralize tooth surfaces and prevents cavities from continuing to form. Nearly all water sources contain fluoride. However, the amount of naturally occurring fluoride in most water sources used for drinking in the United States is not sufficient to prevent tooth decay. That's where added fluoride through community water fluoridation comes in - effectively raising the level of fluoride in the water supply to an amount that has been proven to prevent cavities. According to the CDC, whether the fluoride is naturally occurring or added, it works the same way, and studies have shown that the silicofluorides (fluorosilicic acid and sodium fluorosilicate) achieve virtually complete dissolution and ionic disassociation at the concentrations they are added to the drinking water.

We all strongly agree that to balance risks, benefits and economic considerations, added fluoride must be used in the correct amount and frequency. As with many substances, more is not better.

Leading federal organizations have recently reconfirmed that fluoridation works to prevent dental decay while recognizing that, due to the increased fluoride exposure from additional sources, it is now possible to receive enough fluoride with slightly lower levels of fluoride in water. After an extensive review of the scientific literature on the relationship between fluoride and oral health, in January the U.S. Department of Health and Human Services (HHS) and the U.S. Environmental Protection Agency (EPA) jointly announced a proposed change to the optimal fluoride level in drinking water to prevent tooth decay from a range of 0.7 to 1.2 milligrams per liter (mg/L) to a fixed point (0.7 mg/L) at the bottom end of the previous range.

This updated proposed recommendation serves to balance the benefits of preventing tooth decay in children and adults while minimizing the chances that children could develop fluorosis, a typically very mild condition that most frequently causes white spots on the teeth.

We're encouraged by this. As a state organization, we take our lead from prominent U.S. federal agencies. This further reinforced to us that they are continuing to monitor fluoridation and are basing their current recommendation on their recent review of the most current science.

Some of the concerns about water fluoridation presented at city council meetings and other public forums do not appear to us to be related to the small amount of added fluoride that is commonly used for community water fluoridation. Rather, the concerns seem to be about long-term consumption of high amounts of naturally occurring fluoride at levels up to and exceeding the amount the EPA has determined to be safe. This is not applicable to community water fluoridation and was addressed in a 2006 report, 'Fluoride in Drinking Water: A Scientific Review of EPA's Standards from the National Research Council.' I've included a statement on the report as an attachment.

The Centers for Disease Control and Prevention (CDC) strongly endorse water fluoridation, and they have named it as one of the top 10 public health achievements of the 20th century. They further state that as a public health measure, it has the net effect of significantly reducing tooth decay experience, even with almost universal fluoride toothpaste usage and other forms of personal and professional use of fluorides.

Fluoridation is also endorsed by the American Dental Association, the American Academy of Pediatrics, the American Cancer Society, the American Academy of Family Physicians, the American Medical Association and many other organizations in the fields of advocacy, health, science and public affairs.

When discussing potential adverse effects, according to our reading of the literature, the only proven potentially adverse consequence of drinking optimally fluoridated water, as mentioned above, is the possibility of developing dental fluorosis, which is usually very mild.

There are still major disparities in tooth decay rates according to race, ethnicity and poverty status. Many low-income individuals have no other sources of fluoride than that found in their drinking water and commercial beverages and foods prepared in fluoridated communities. That's one of the strengths of water fluoridation. It is an equitable method of disease prevention – all people benefit regardless of their incomes, educational levels, ages, or ability to get dental treatment.

We believe, as do most health professionals, that fluoridated water and the appropriate use of fluoride toothpaste are largely responsible for the significant documented decline in tooth decay in the U.S. over the past several decades. As we briefly very discussed, there is a tremendous amount of information on fluoridation. There are studies in the literature that come to different conclusions. From our perspective, trying to respond to every allegation regarding fluoride is challenging and counterproductive.

What we've attempted to do, where there is a sufficient amount of evidence, is try to put some of the major concerns that folks opposed to fluoridation are likely to present in an appropriate context. I've included several documents as attachments. The first is a letter of support from Dr. Engel. That attachment contains questions and answers about water fluoridation and a list of national and international supporting organizations. We've also included brief summaries that we developed on issues related to fluoridation and cancer, bone fracture and fluorosis. The last document is a response to the 2006 NRC report.

Thanks for your consideration and please let me know if you have any further questions.
Kevin

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