Bediou, Ida

From: Cindy Mayor
Sent: Thursday, October 11, 2007 10:31 PM
To: Bediou, Ida
Subject: Material for Board of Health Agenda

Hello Ida:

Thanks for speaking with me today. Could you please include the attached with the Board of Health Agenda for Oct 22nd. I will bring 35 printed copies of the PPT presentation to the meeting.

Also would you be able to advise me when the Agenda and Public Health Report will be available and how to find this info on the web?

Thank you. Kindest regards,

Cindy Mayor

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Ingesting fluoride is not effective in preventing cavities
Topical vs. Systemic

There seems to be an international consensus that swallowing fluoride products does not protect teeth from cavities. Purported benefits are from applying fluoride products to the surface of the teeth [topical application].


"Preeruptive incorporation of fluoride into enamel was the most frequently cited incorrect response."
"The majority of dental professionals surveyed were unaware of the current understanding of fluoride’s predominant posteruptive mode of action through remineralization of incipient carious lesions."
"Educational efforts are needed to promote the appropriate use of fluoride."


Citing more than 20 years of peer-reviewed published studies that show that any effect of fluoride on tooth decay is post-eruptive, meaning only after the tooth is formed and as a result of fluoride being applied directly to the surface of the tooth rather than ingested, the July 2000, cover story of the Journal of the American Dental Association authored by John Featherstone, M.Sc., Ph.D., Professor and Chair, Department of Preventive and Restorative Dental Sciences and Department of Dental Public Health and Hygiene, University of California, San Francisco states:

"Importantly, this means that fluoride incorporated during tooth mineral development at normal levels of 20 to 100 ppm (even in areas that have fluoridated drinking water or with the use of fluoride supplements) does not measurably alter the acid solubility of the mineral. Even when the outer enamel has higher fluoride levels, such as 1,000 ppm, it does not measurably withstand acid-induced dissolution any better than enamel with lower levels of fluoride... The fluoride incorporated developmentally – that is, systemically into the normal tooth mineral – is insufficient to have a measurable effect on acid solubility."


"The prevalence of dental caries in a population is not inversely related to the concentration of fluoride in enamel (37), and a higher concentration of enamel fluoride is not necessarily more efficacious in preventing dental caries (38)."

"Fluoride’s caries-preventive properties initially were attributed to changes in enamel during tooth development because of the association between fluoride and cosmetic changes in enamel and a belief that fluoride incorporated into enamel during tooth development would result in a more acid-resistant mineral. However, laboratory and epidemiologic research suggests that fluoride prevents dental caries predominately after eruption of the tooth into the mouth, and its actions primarily are topical for both adults and children."


"...the predominant view for some time was that fluoride reduced the solubility of dental mineral and that, for caries prevention, it was essential to make fluoride available during tooth formation, for incorporation into the mineral. Preventive measures based on this view included fluoridation of public water supplies to the 1 mg/L level or, alternatively, supplying fluoride in tablet form to children. This approach has, however, ceased to be prevalent."


"Supplying fluoride in large amounts after the teeth erupt in the oral cavity (i.e., aimed at depositing fluorapatite in the outer layers of the enamel) has not proven to give sufficient long-term protection against a cariogenic attack. Preventive therapies should, on the contrary, be based on the modern understanding of the mechanism of action. Fluoride rinses, lacquers, and the use of fluoride toothpastes cause an elevation of the fluoride levels in the oral fluids, at which level the dynamic pattern of demineralization and remineralization have been shown to be affected. Semiannual topical treatments seem particularly useful in those individuals who have shown a high caries activity."


“In 1970, during a meeting in Switzerland on fluoride research, I was astounded to hear the statement from a European cariologist of great reputation that the mechanism of action of fluoride against dental caries was entirely topical! At that time I believed, along with the majority of American caries researchers, that fluoride worked because it became incorporated into enamel – especially developing enamel – to increase its resistance to acid demineralization... Now, twelve years later, I continue to be impressed by the wisdom of his assertion... each year since then the evidence has continued to accumulate to support the hypothesis that the anti-caries mechanism of fluoride is mainly a topical one."

“Until recently most caries preventive programs using fluoride have aimed at incorporating fluoride into the dental enamel. The relative role of enamel fluoride in caries prevention is now being increasingly questioned, and based on rat experiments and reevaluation of human clinical data, it appears to be of minor importance.”

“As a direct consequence any method which places particular emphasis on incorporation of bound fluoride into dental enamel during formation may be of limited value. Therefore, there is limited scientific data to support the assertion that systemic fluoride treatment should be initiated from shortly after birth.”

The 1997 Canadian Consensus Conference Results

“The primary mechanism of action of fluoride to prevent dental decay is topical.”

“no reliable scientific evidence of significant dental benefit from ingested fluoride.”


“The magnitude of [fluoridation’s] effect is not large in absolute terms, is often not statistically significant, and may not be of clinical significance.”


The most recent review states: “it is now accepted that systemic fluoride plays a limited role in caries prevention.”