New Fluoride Recommendations
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This article was published by Suite 101 on August 21, 2001 in response to the U.S. Centers for Disease Control fluoride recommendations released on August 17, 2001. This is a fictional conversation between the dentists who wrote the new report (CDC) and an average American (ME). All quotes are from the CDC report exactly as written.

**CDC:** "In the earliest days of fluoride research, investigators hypothesized that fluoride affects enamel and inhibits dental caries (cavities) only when incorporated into developing dental enamel..."

**ME:** Hey, we all make mistakes doc.
**CDC:** "Fluoride works primarily after teeth have erupted..."

**ME:** Oh, I see. But what does swallowed fluoride do?
**CDC:** "Fluoride ingested during tooth development can also result in a range of visually detectable changes in enamel opacity... because of hypomineralization."

**ME:** What happens?
**CDC:** "...chalklike, lacy markings across a tooth's enamel surface... In the moderate form, >50% of the enamel surface is opaque white. The rare, severe form manifests as pitted and brittle enamel. After eruption, teeth with moderate or severe fluorosis might develop areas of brown stain. In the severe form, the compromised enamel might break away, resulting in excessive wear of the teeth."

**ME:** So how does fluoride reduce tooth decay?
**CDC:** "Fluoride concentrated in plaque and saliva inhibits the demineralization of sound enamel and enhances the remineralization."

**ME:** But doc, you make me brush off the plaque twice a day. Then your torturer hygienist digs out what I missed twice a year.
**CDC:** "...fluoride is released from dental plaque in response to lowered pH at the tooth-plaque interface."

**ME:** Hello, are you listening? In fact, you or your hygienist brush off my plaque during my semi-annual cleanings with that gritty fluoride paste.
**CDC:** "Fluoride-containing paste is routinely used during dental prophylaxis (i.e., cleaning). The abrasive paste, which contains 4,000 – 20,000 ppm fluoride, might restore the concentration of fluoride in the surface layer of enamel removed by polishing..."

**ME:** Oh.
**CDC:** "Fluoride paste is not accepted by FDA or ADA as an efficacious way to prevent dental caries."

**ME:** Now you are scaring me, doc. Well, what about the fluoridated toothpaste I use every day?
**CDC:** "Few studies evaluating the effectiveness of fluoride toothpaste, gel, rinse, and varnish among adult populations are available."

**ME:** Man, oh, man!
**CDC:** "Saliva is a major carrier of topical fluoride."

**ME:** Oh, I see.
**CDC:** "The concentration of fluoride in ductal saliva, as it is secreted from salivary glands, is low – approximately 0.016 parts per million (PPM) in areas where drinking water is fluoridated and 0.006 PPM in nonfluoridated areas."

**ME:** So the fluoride in saliva is killing "Mr. Germ"!
**CDC:** "This concentration of fluoride is not likely to affect cariogenic activity"

**ME:** Hey Abbot. Who's on first?

**CDC:** "In laboratory studies, when a low concentration of fluoride is constantly present, one type of cariogenic bacteria, Streptococcus mutans, produces less acid."

**ME:** Oh, so fluoride kills the Streptococcus mutans that causes tooth decay?

**CDC:** "Whether this reduced acid production reduces the cariogenicity of these bacteria in humans is unclear."

**ME:** Is this report supposed to be a comedy?

**ME:** OK, so fluoride doesn't incorporate into developing teeth to prevent tooth decay; but does concentrate in the plaque on the outside of my teeth but I brush it off. Fluoride's in my saliva but at doses not high enough to reduce tooth decay. So fluoride must get into my teeth somehow to prevent cavities.

**CDC:** "The prevalence of dental caries in a population is not inversely related to the concentration of fluoride in enamel, and a higher concentration of enamel fluoride is not necessarily more efficacious in preventing dental caries."

**ME:** Oy! So what's good about fluoridation?

**CDC:** "Today, all US residents are exposed to fluoride to some degree, and widespread use of fluoride has been a major factor in the decline in the prevalence and severity of dental caries in the United States and other economically developed countries."

**ME:** What's your reference for that?


**ME:** BELIEVE? But doc, remember what happened when you believed ingested fluoride incorporated into developing enamel to reduce tooth decay? Can't you do any better? What happened to those early studies with natural fluoride that gave birth to fluoridation?

**CDC:** "... the limitations of these studies make summarizing the quality of evidence on community water fluoridation as Grade I inappropriate."

**ME:** So they just don't make the grade, huh. That's a shame. Well, you've been adding unnatural fluoride to water supplies for over 50 years. You said you had mounds of studies proving its safety and efficacy. What about those?

**CDC:** "The quality of evidence from studies on the effectiveness of adjusting fluoride concentration in community water to optimal levels is Grade II-1."

**ME:** They don't make top grade either. Bummer! This is upsetting you. Let's change the subject. So you want bottled water labels to show fluoride content?

**CDC:** "Producers of bottled water should label the fluoride concentration of their products."

**ME:** This sounds reasonable.

**CDC:** "In the United States, water and processed beverages (e.g., soft drinks and fruit juices) can provide approximately 75% of a person's fluoride intake."

**ME:** Are you asking for the fluoride content labeled on soda and fruit juices?

**CDC:** (silent on this issue)

**ME:** What's so bad about fluoride that it has to be listed on the labels?
CDC: "Fluoride ingested during tooth development can also result in a range of visually detectable changes in enamel opacity… These changes have been broadly termed 'enamel fluorosis', certain extremes of which are cosmetically objectionable… Severe forms of this condition can occur only when young children ingest excess fluoride, from any source, during critical periods of tooth development… Concerns regarding the risk for enamel fluorosis are limited to children aged <8 years…"

ME: So how much is too much?
CDC: "Intake that maximally reduces occurrence of dental caries without causing unwanted side effects, including moderate enamel fluorosis."

ME: I would prefer you tell me the amount that would guarantee against any fluorosis, even mild, but give me what you have.

CDC: From Table 2 - Adequate intake of fluoride for: - a baby 0-6 months old or 16 pounds is 0.01 milligrams day (mg/day) - a child 6-12 months or 20 pounds is 0.5 mg/day - a child 1-3 years or 29 pounds is 0.7 mg/day - a child 4-8 years or 48 pounds is 1.1 mg/day

ME: So babies are safe if they drink these amounts even though most of them don't have teeth to get any topical benefits?
CDC: "In a survey of four US cities with different fluoride concentrations in the drinking water (range: 0.37 -- 1.04 PPM), ... infants aged 6 months ingested 0.21 -- 0.54 mg fluoride per day"

ME: Oh my goodness. That's too high. They may get fluorosis. What should we do?
CDC: “Two studies reported that extended consumption of infant formula beyond age 10 - 12 months was a risk factor for enamel fluorosis, especially when formula concentrate was mixed with fluoridated water...The Iowa study also reported that infant formula and processed baby food contained variable amounts of fluoride.”

ME: So are you asking formula and baby foods also be fluoride labeled?
CDC: (Silence)

ME: So, if ingested fluoride doesn’t reduce tooth decay and if saliva fluoride levels aren't high enough to prevent tooth decay, what good is fluoridation?
CDC: “...drinking fluoridated water, brushing with fluoride toothpaste, or using other fluoride dental products can raise the concentration of fluoride in saliva present in the mouth 100- to 1,000-fold.”

ME: When I do the math this works out to 0.6 ppm to 6 PPM in non-fluoridated communities and 1.6 - 16 PPM in fluoridated communities. Isn't that high enough to cause fluorosis since all fluorides get absorbed into the bloodstream via the mucous membranes of the mouth and some fluoridated dental products get swallowed inadvertently?
CDC: "The concentration returns to previous levels within 1-2 hours but, during this time, saliva serves as an important source of fluoride for concentration in plaque and for tooth remineralization."

ME: Assuming you haven’t brushed away the plaque. But you didn’t answer my fluorosis question.
CDC: “Some persons choose to modify this condition with elective cosmetic treatment.”

ME: Is this cost factored into the cost/benefit analysis of water fluoridation?
CDC: “...most persons would be classified as low risk (for cavities) at any given time.”

ME: There you go again changing the subject. So, if the dentist isn't sure, he/she treats my child as a low risk cavity person.
CDC: “...when classification is uncertain, treating a person as high risk is prudent until further information or experience allows a more accurate assessment. This assumption increases the immediate cost of caries prevention or treatment and might increase the risk for enamel fluorosis for children aged <6 years.”

ME: So you’d rather make more money and give my kid fluorosed teeth than give less fluoride which you say doesn’t work inside the teeth or outside a clean tooth. To tell you the truth, I’m doubting the necessity of fluoride at all, doc. What else should I know?

CDC: “Adherence to the recommendations in this report regarding appropriate use of fluoride for children aged <6 years will reduce the prevalence and severity of enamel fluorosis.”

ME: Why, is there a problem?

CDC: “The U.S. Public Health Service (PHS) developed recommendations in the 1940s and 1950s regarding fluoride concentrations in public water supplies. At that time, public health officials assumed that drinking water would be the major source of fluoride for most US residents.”

ME: Assumed?

CDC: “…fluoride-containing products, including toothpaste (i.e., dentifrice), mouthrinse, dietary supplements, and professionally applied or prescribed gel, foam, or varnish. In addition, processed beverages, which constitute an increasing proportion of the diets of many US residents and food can contain small amounts of fluoride, especially if they are processed with fluoridated water. Thus, US residents have more sources of fluoride available now than 50 years ago.”

ME: You forgot fluoride in medicines, inhaled and absorbed fluoride from ocean mist, fluoridated shower and bath water and cold mist humidifiers as well as fluoride air pollution from industry emissions, coal burning, electric plants, and even volcanoes… OK, so I know a little about fluoride.

CDC: “…The United States does not have comprehensive recommendations for caries prevention and control through various combinations of fluoride modalities. Adoption of such recommendations could... (reduce) the prevalence of enamel fluorosis…”

ME: What do I do in the meantime?

CDC: “…attention to fluoride intake among children aged <6 years to decrease the risk for enamel fluorosis.”

ME: I understand that dentists are taught to prescribe fluoride supplements for all children over 6 months who live in non-fluoridated or low fluoride communities.

CDC: “Fluoride supplements can be prescribed for children at high risk for dental caries and whose primary drinking water has a low fluoride concentration.”

ME: Oh so it’s only for children at high risk of cavities.

CDC: “For children aged <6 years, the dentist, physician, or other health-care provider should weigh the risk for caries without fluoride supplements, the caries prevention offered by supplements, and the potential for enamel fluorosis.”

ME: Why is that?

CDC: “A few studies have reported no association between supplement use by children aged <6 years and enamel fluorosis but most have reported a clear association.”

ME: So, no supplements for my 5 year old. But do supplements reduce tooth decay?

CDC: “The evidence for using fluoride supplements to mitigate dental caries is mixed.”

ME: Even this you are not sure of?
CDC: “...fluoride supplements also could increase the risk for enamel fluorosis at this age” (6 and under)...

ME: What about all that science you said you had to support their use?
CDC: “Many studies of the effectiveness of fluoride supplements in preventing dental caries among children aged <6 years have been flawed in design and conduct.”

ME: Oh, so fluoride supplements are more likely to cause fluorosis than decrease tooth decay in the under six year old group. So now your supplement and fluoridation studies are flawed. I guess those anti-fluoridationists were right all along. What else?
CDC: “Consideration of the child’s other sources of fluoride, especially drinking water, is essential in determining this balance. Parents and caregivers should be informed of both the benefit of protection against dental caries and the possibility of enamel fluorosis.”

ME: No dentist ever told me the risks of fluoride. So that’s a good one. What else?
CDC: “Parents and caregivers should consult a dentist or other health-care provider before introducing a child aged <2 years to fluoride toothpaste.”

ME: How about fluoride treatments at the dentist?
CDC: “Whether fluoride varnish or gel would be most efficiently used in clinical programs targeting groups at high risk for dental caries or should be reserved for individual patients at high risk is unclear.”

ME: What about low risk people?
CDC: “Routine use of professionally applied fluoride gel or foam likely provides little benefit to persons not at high risk for dental caries, especially those who drink fluoridated water and brush daily with fluoride toothpaste.”

ME: Oy. What else?
CDC: “Parents and caregivers should not provide additional fluoride to children aged <6 years without consulting a dentist or other health-care provider regarding the associated benefits and potential for enamel fluorosis.”

ME: Sounds reasonable to me; I just hope my dentist knows all this stuff. They say many doctors get their medical information from the media. The media told us 100 million Americans are deprived of fluoride, but that’s not what you are telling me.

ME: What’s up with these school fluoridation programs?
CDC: “...a fluoride concentration of 4.5 times the optimal concentration … to compensate for the more limited consumption of fluoridated water. At the peak of this practice in the early 1980s, a total of 13 states had initiated school water fluoridation in 470 schools serving 170,000 children.”

ME: How many now?
CDC: “... the current extent of this practice is not known.”

ME: I think that’s something you should know.
ME: What about fluoride mouthrinses?
CDC: “The National Preventive Dentistry Demonstration Program (NPDDP), a large project conducted in 10 US cities during 1976-1981 to compare the cost and effectiveness of combinations of caries-prevention procedures, reported that fluoride mouthrinse had little effect among schoolchildren, either among first-grade students with high and low caries experience or among all second- and fifth-grade students.”

ME: Why am I not surprised. What about school fluoride mouthrinse programs?
CDC: Throughout the 1980s, approximately 3 million children in the United States participated in school-based fluoride mouthrinsing programs.

ME: What about now?
CDC: “The current extent of such programs is not known.”

ME: Again, you don't know? What do you know?
CDC: “Use of fluoride supplements by pregnant women does not benefit their offspring.”

ME: You crafty little devils conveniently left unmentioned that the fluorides used to fluoridate drinking water are mostly silicofluorides, waste products of the fertilizer industry, contaminated with arsenic, lead, and more, which have never been safety tested in humans or animals according to the EPA. (See http://www.dartmouth.edu/~rmasters/letter.jpg)

Suite 101 August 21, 2001