



Response to Michael Connett's Video of "10 Facts"

American Fluoridation Society
June 26, 2016

Michael Connett is an attorney, not a healthcare provider or expert. He frames the fluoridation issue around the premise that fluoridation is the process of adding a substance to water supplies in order to prevent dental disease. It is not. Fluoridation is based upon the observation that at a certain concentration level of a mineral which has been in water forever, the teeth of those ingesting that water are more resistant to dental decay. Fluoridation simply adjusts the level of this existing mineral in water supplies to that level, such that we will receive that benefit, while strictly maintaining that concentration level well below the threshold of adverse effects.

In his introductory remarks, Connett reports on the number of communities in Canada which have discontinued fluoridation, while omitting the fact that fluoridation is steadily increasing in the United States. According to the latest CDC reports, the United States was 74.7% in 2014, increased from 74.6% in 2012, which was increased from 73.4% in 2011. **(1) (2)**

In response to the "10 Facts":

Connett Fact #1: "Most developed countries do not fluoridate their water"

Response:

The reasons why different countries may choose to not fluoridate their public water systems are myriad and diverse, few, if any, related to concerns with safety or effectiveness of this public health initiative.

The following is an outline of the situation with fluoridation throughout the world taken from a recent newsletter of the New Zealand National Fluoridation Information Service:

"Countries with widespread water fluoridation programmes include Australia, the United States of America, Canada, the United Kingdom, Ireland, Spain, Israel, Brazil, Brunei, Chile, Argentina, Colombia, Hong Kong, South Korea, Singapore and Malaysia. Countries with limited water fluoridation programmes include Vietnam, Fiji, Papua New Guinea, and South Korea."

"Several countries are unable to introduce water fluoridation programmes due to technical, financial or sociocultural reasons. As an alternative, both salt and milk have been found to be reliable and convenient vehicles for increasing fluoride intake to an optimal level for hard to reach and low socio-economic communities. Studies have found them to be as effective as community water fluoridation schemes."

"Some European, Latin American, and Caribbean countries, including France, Switzerland, Germany, Costa Rica, Colombia and Jamaica currently use fluoridated salt schemes. Mexico and most Latin American and Caribbean countries (apart from Argentina, Brazil, Chile and French Guyana) have or have had salt fluoridation programmes."

“A smaller number of countries currently have fluoridated milk programmes, including Bulgaria, Chile, China, Peru, Russia, Thailand and the United Kingdom.”

“Some country regions have optimal amounts of naturally occurring fluoride which provides good protection for oral health. examples of countries supplied with naturally fluoridated water at or around the optimum level needed to prevent dental decay include the United Kingdom (estimated 329,000 people), United States of America (estimated 10,078,000 people) Canada (estimated 300,000 people) and Australia (estimated 144,000 people).”

“It is estimated that 39.5 million people around the world have access to naturally fluoridated water at the optimal level although variations from one community to another over time make it difficult to calculate an accurate total.” (3)

Connett Fact #2: “Fluoridated countries do not have less tooth decay than non-fluoridated countries

Response:

Connett states that “today, according to data from the World Health Organization, there is no discernible difference between decay in fluoridated and non-fluoridated countries”. The information on which he bases this claim are not WHO conclusions, but a misrepresentation of WHO data by Fluoride Action Network personnel. The graph shown by Connett is one prepared by Chris Neurath of the FAN, which is a misleading manipulation of WHO data. In the graph, Neurath has plucked a couple of data points from a cluster of points of WHO data for each country, connected the dots and claimed that to be a trend for those countries.

An excellent explanation, by New Zealand chemist Ken Perrott, as to how FAN has misrepresented WHO data may be found [here](#). (4)

Connett Fact #3: Fluoride affects many tissues in the body besides the teeth

Response:

A. Connect presents John Doull’s 2007 statement while omitting his 2013 statement. In response to anti-fluoridationist constant misrepresentation of his 2007 statement to imply that he finds fluoridation dangerous, Doull stated the following in a 2013 email message to Matt Jacob:

“I do not believe there is any valid, scientific reason for fearing adverse health conditions from the consumption of water fluoridated at the optimal level”

---John Doull, MD, PhD, Chair of the National Academy of Sciences, National Research Council 2006 Committee Report on Fluoride in Drinking Water (5)

B. Connett then cites out-of-context information from the report of the 2006 NRC Committee on Fluoride in Drinking Water, which are not relevant to fluoride at the optimal level at which water is fluoridated.

The 2006 NRC Committee on Fluoride in Drinking Water was charged to evaluate the adequacy of the EPA primary and secondary MCLs for fluoride, 4.0 ppm and 2.0 ppm respectively, to protect against adverse effects. The final recommendation of this Committee was for the primary MCL to be lowered from 4.0 ppm. The sole reasons cited by the Committee for this recommendation were the risk of severe dental fluorosis, bone fracture, and skeletal fluorosis, with chronic ingestion of water with a fluoride content of 4.0 ppm or greater. Nothing else. Had this Committee deemed there to be any other concerns with fluoride at this level, it would have been responsible for stating so and recommending accordingly. It did not.

Additionally, the NRC Committee made no recommendation to lower the secondary MCL of 2.0 ppm. Water is fluoridated at 0.7 ppm, one third the level which the 2006 NRC Committee on Fluoride in Drinking Water made no recommendation to lower. **(6)**

In regard to Connett's statement: *"Many of the studies to determine fluoridation's safety have yet to be conducted"* Humans have been ingesting fluoride in water in the range of the optimal level since the beginning of time. During the past 71 years, with hundreds of millions of individuals having chronically ingested fluoridated water, there have been no proven adverse effects. In the absence of valid evidence that fluoridation may be unsafe, it is the responsibility of no one to disprove the constant flow of unsubstantiated claims put forth by antifluoridationists.

Connect claims that the "NAS called on scientists to investigate whether current levels of fluoride in the United States were contributing to current health problems ." The 2006 NRC Committee on Fluoride in Drinking Water to which he refers as the "NAS", made no such "call". It simply recommended further research of the effects of fluoride, as is the prudent recommendation on any scientific issue. Research should never cease on matters of science and healthcare. The NRC Committee simply reaffirmed this in regard to the effects of fluoride. **(6)**

Connett Fact #4: "Fluoridation is not a natural process"

Response:

A. Connect claims that fluoride levels in rivers and lakes is far lower than the amount added during fluoridation. He shows a graph of optimal level fluoride, directly implying that the optimal level of fluoride in drinking water is that amount which is added through fluoridation. He omits the fact that the amount added is only that amount which will raise the total level of fluoride up to the optimal.

Connect claims that, at levels of fluoridated water, studies have shown that salmon and frogs have suffered serious disease. He then flashes a distorted image of the 1989 Damkaer-Dey paper on the effects of fluoride effluent dispensed directly into the Columbia River in Oregon from an aluminum plant situated on that river. This study has no relevance to optimally fluoridated water. This water will only reach such a river as runoff so diluted as to cause no threat whatsoever to the environment, including wildlife in rivers and streams. **(7)**

As Pollick stated in his 2004 paper in the Journal of Occupational and Environmental Health:

"Fluoridated water losses during use, dilution of sewage by rain and groundwater infiltrate, fluoride removal during secondary sewage treatment, and diffusion dynamics at effluent outfall

combine to eliminate fluoridation related environmental effects. In a literature review, Osterman found no instance of municipal water fluoridation causing recommended environmental concentrations to be exceeded, although excesses occurred in several cases of severe industrial water pollution not related to water fluoridation. Osterman found that overall river fluoride concentrations theoretically would be raised by 0.001-0.002 mg/l, a value not measurable by current analytic techniques. All resulting concentrations would be well below those recommended for environmental safety.” (8)

B. Connett claims that hydrofluorosilic acid is captured from the “air pollution control devices of the phosphate fertilizer industry”. He then shows a facility billowing large amounts of smoke, and claims that “studies have shown that these chemicals [hydrofluorosilic acid] may produce unique risks that are not present in natural fluoride”.

Fluoride is the anion of the naturally occurring element, fluorine. An anion is a negatively charged atom. The fluoride ions added to increase existing fluoride levels to the optimal concentration are identical to those “naturally occurring” fluoride ions which already exist in water. As ground water flows over rocks, it picks up fluoride ions which have been leached from calcium fluoride and fluorosilicates in those rocks. These fluoride ions are to what is commonly referred as being “naturally occurring” fluoride.

The substance most widely utilized to fluoridate water systems is hydrofluorosilic acid (HFA). HFA is a co-product of the process which extracts the other co-product, phosphoric acid, from naturally occurring phosphorite rock. Phosphoric acid is used in soft drinks we consume and in fertilizers which become incorporated into foods that we eat. The HFA co-product is carefully diluted to an 23% aqueous solution which is utilized to fluoridate water systems. To fear one co-product of this process is to fear the other.

Once introduced into drinking water, due to the pH of that water (~7), the HFA is immediately and completely hydrolyzed (decomposed). The products of this hydrolysis are fluoride ions identical to those “naturally occurring” fluoride ions which have always existed in water, and trace contaminants in barely detectable amounts far below US EPA mandated maximum levels of safety for each. (9)

A fluoride ion is a fluoride ion, regardless of whether the source compound from which it is released is calcium fluoride, hydrofluorosilic acid, or any other.

A complete list of the contents of fluoridated water at the tap including precise amounts of any detected contaminants and the EPA maximum allowable level for each may be found in the [Fact Sheet on Fluoridation Substances](#) on the website of NSF International. (10)



The “air pollution control device” to which Connett refers is a “scrubber”. This apparatus, pictured to the left, precipitates valuable substances from gases as they pass through, thereby reclaiming those substances for productive use.

It is unclear why antifuoridationists view such

reclamation and prudent use of our natural resources as a negative, but the process of “scrubbing” gases is a very useful and accepted method of reclaiming valuable resources that would otherwise be lost.

C. Finally, Connett claims that “studies have shown that these chemicals [hydrofluorosilic acid] may produce unique risks that are not present in natural fluoride” while briefly flashing images of papers on “arsenic” and other such substances. As can be clearly noted on the NSF Fact Sheet, the level of any detected contaminants in fluoridated water at the tap is well below EPA mandated maximum allowable levels of safety.

Connett Fact #5: “40% of American teens show visible signs of fluoride overexposure”

Response:

A. Connett claims that a recent study by the CDC demonstrated that 40% of US teens show signs of dental fluorosis. He fails to note that there are separate and distinct levels of dental fluorosis, and proceeds to show images of the moderate and severe levels of dental fluorosis, levels which do not occur attributable to optimally fluoridated water.

The 40% is in reference to a 2010 CDC study by Beltran-Aguilar in which 41% of adolescents they examined were found to have signs of dental fluorosis. This was composed of 37.1% with mild to very mild dental fluorosis, a barely detectable effect which has no effect on cosmetics, form, function, or health of teeth....with the other 3.8% being those with moderate dental fluorosis, attributable to improper ingestion of toothpaste and/or exposure to abnormally high levels of environmental or well-water fluoride during the teeth forming years of 0-8. (11)

The below images from the website of the American Dental Association are four typical cases of mild dental fluorosis, properly photographed, seen in children participating in the Iowa Fluoride Study.



L Levy SM, Broffitt B, Marshall TA and colleagues. Associations between frequency of permanent incisors and fluoride intake from various sources, other dietary sources and dentifrice during early childhood. JADA 2010;141(10):1198-1201. Copyright ©2010 American Dental Association. All rights reserved. Reprinted by permission.



L Levy SM, Broffitt B, Marshall TA and colleagues. Associations between frequency of permanent incisors and fluoride intake from various sources, other dietary sources and dentifrice during early childhood. JADA 2010;141(10):1198-1201. Copyright ©2010 American Dental Association. All rights reserved. Reprinted by permission.



L Levy SM, Broffitt B, Marshall TA and colleagues. Associations between frequency of permanent incisors and fluoride intake from various sources, other dietary sources and dentifrice during early childhood. JADA 2010;141(10):1198-1201. Copyright ©2010 American Dental Association. All rights reserved. Reprinted by permission.



L Levy SM, Broffitt B, Marshall TA and colleagues. Associations between frequency of permanent incisors and fluoride intake from various sources, other dietary sources and dentifrice during early childhood. JADA 2010;141(10):1198-1201. Copyright ©2010 American Dental Association. All rights reserved. Reprinted by permission.

<http://www.ada.org/en/member-center/oral-health-topics/fluorosis>

B. Connett claims that “In the 1950s health officials claimed that fluorosis would only affect 10% of children in fluoridated areas and would be limited to its most mild forms.”

While Connett provides no citation for this claim, it can be assumed that this is a reference to Dean’s conclusion in 1941 that fluoride at 1.0 mg/L of drinking water was the “minimal threshold of endemic dental fluorosis” and noted that, at 1.0 mg/L, 10-12% of permanent-resident children showed the mildest of fluorosis, mostly in the bicuspids and molars (Dean et al. 1941). **(12)**

C. There is no valid, peer-reviewed scientific evidence of any adverse effects from overexposure associated with optimally fluoridated water in combination with all other normal sources of fluoride exposure.

Connett Fact #6: “For infants fluoridated water provides no benefits, only risks”

Response:

A. There is no valid, peer-reviewed scientific evidence of any adverse effects on infants from optimally fluoridated water.

B. Due to existing fluoride content of powdered infant formula, the use of optimally fluoridated water to reconstitute it risks mild dental fluorosis in the developing teeth of infants. That this is the only risk noted by the US Institute of Medicine is evidenced by the fact that after age, the IOM established daily upper limit for fluoride intake before adverse effects jumps to 10 mg thereafter. After age 8, the teeth have developed and dental fluorosis is no longer possible. **(13)**

C. Connett presents a 2012 study by what he claims to be “a team of Harvard Scientists” on the effects of fluoride on IQ.

The "reduced IQ studies" are a reference to a 2011 review of 27 Chinese studies dug out of obscure Chinese journals by researchers Phillippe Grandjean and Anna Choi. As Grandjean and Choi are members of the faculty of the Harvard School of Public Health, antifluoridationists erroneously refer to this study as the "Harvard Study", or claim as does Connett here that this was a “team of Harvard scientists”.

These studies were of the effects of high levels of fluoride (as high as 11.5 ppm) in the well-water of various Chinese, Mongolian, and Iranian villages.

After excluding studies which were so seriously flawed that they did not even warrant review, Grandjean and Choi ended up with 27 in their review. By their own admission these studies had key information missing, inadequate control for confounders, and questionable methodologies. These 27 studies were so seriously flawed that Grandjean and Choi were led to issue a public statement in March, 2012 that the studies should not be used to judge water fluoridation in the US. This obviously has not stopped "FAN" from doing so anyway.

"These results do not allow us to make any judgment regarding possible levels of risk at levels of exposure typical for water fluoridation in the U.S. On the other hand, neither can it be concluded that no risk is present. We therefore recommend further research to clarify what role fluoride exposure levels may play in possible adverse effects on brain development, so that future risk assessments can properly take into regard this possible hazard."

--Anna Choi, research scientist in the Department of Environmental Health at HSPH, lead author, and Philippe Grandjean, adjunct professor of environmental health at HSPH, senior author **(14)**

Not only was this Review not reflective of the views of Harvard as implied by antifluoridationists, or performed by a "team of Harvard scientists" from the website of the American Academy of Pediatrics, "ilikemyteeth.org":

"Three of the leading figures of the health community at Harvard University have written a letter expressing their support for community water fluoridation. Dr Jeffrey S. Flier, dean of Harvard Medical School, Dr Bruce Donoff, dean of the Harvard School of Dental Medicine, and Julio Frenk, dean of the Harvard School of Public Health and International Development, co-wrote the letter to an associate professor at the dental school."

"Here is an excerpt from the March 22 letter that Dr Flier, Donoff, and Frenk co-wrote:"

"As Deans of Harvard Medical School and the Harvard School of Dental Medicine, we continue to support community water fluoridation as an effective and safe public health measure for people of all ages."

"Fluoridation has made an enormous impact on improving the oral health of the American people ... we continue to support community water fluoridation as an effective and safe public health measure for people of all ages. Numerous reputable studies over the years have consistently demonstrated that community water fluoridation is safe, effective, and practical. Fluoridation has made an enormous impact on improving the oral health of the American people." **(15)**

Of note is the fact that as Dean of the Harvard School of Public Health, Dr. Frenk is the superior of Grandjean and Choi at Harvard.

Connett Fact #7: Fluoride supplements have never been approved by the FDA

Response:

A. Connett claims that *"Due to fluoride's toxicity you need to have a Dr's prescription for fluoride supplements."*

Prescriptions are required for fluoride supplements in order to ensure accountability for determination of the fluoride content of the patient's primary water source prior to dispensation of the fluoride supplements. Once determined, only that amount of fluoride is prescribed which will provide the proper amount of fluoride from the combined total of fluoride in the water and the supplement. This same safeguard exists for fluoridated water. Prior to fluoridating a public

water system, the existing level of fluoride in the water supply is first determined. Once determined, only that amount of fluoride required to raise the total level of fluoride to the optimal concentration is added.

B. There are no drugs involved in fluoridation. No US court of last resort has ever affirmed the "forced medication" argument of fluoridation opponents. There are only fluoride ions, identical to those which have always existed in water. Fluoridation simply adjusts the concentration level of those ions to the point where maximum benefit is received when the water is consumed, while strictly maintaining the concentration of that fluoride well below the threshold of adverse effects.

C. The FDA has no jurisdiction over the contents of drinking water supplies. This jurisdiction falls entirely under the jurisdiction of the EPA. FDA approval of the mineral content of drinking water is neither required, nor needed.

Connett Fact #8: Fluoride is the only medicine that is intentionally added to water.

Response:

A. There is no medicine involved in fluoridation. Those are only fluoride ions identical to those which have always existed in water. Fluoridation simply adjusts the concentration level of those ions to the point where maximum benefit is received when the water is consumed, while strictly maintaining the concentration of that fluoride well below the threshold of adverse effects.

B. Whether fluoride is an essential nutrient or not is debatable. It is also irrelevant. Fluoridation was never intended to be a remedy for a fluoride deficiency. Its purpose has always been to simply adjust the level of existing fluoride in water to that level where maximum benefit will be attained.

C. Connett's claim that "fluoridation denies patients the right to determine which medicines they will take.....is ludicrous. No one is forced to consume fluoridated water. Everyone has the right to drink it or not. Entirely their choice.

Connett Fact #9: Ingesting fluoride provides little benefit to teeth

The effects of fluoride are both topical and systemic. The systemic effects are demonstrated in the mild to very mild dental fluorosis which is the only dental fluorosis in any manner associated with optimally fluoridated water. Mild to very mild dental fluorosis is a barely detectable effect which causes no adverse effect on cosmetics, form, function, or health of teeth. As Kumar, et al. have demonstrated mildly fluorosed teeth to be more decay resistant, many consider this effect to not even be undesirable, much less adverse. Dental fluorosis can only occur systemically. **(16)**

Additionally, saliva with fluoride incorporated into it provides a constant bathing of the teeth in a low concentration of fluoride all throughout the day, a very effective means of dental decay prevention. Incorporation of fluoride into saliva occurs systemically.

From the CDC:

"Fluoride works to control early dental caries in several ways. Fluoride concentrated in plaque and saliva inhibits the demineralization of sound enamel and enhances the remineralization (i.e., recovery) of demineralized enamel. As cariogenic bacteria metabolize carbohydrates and produce acid, fluoride is released from dental plaque in response to lowered pH at the tooth-plaque interface. The released fluoride and the fluoride present in saliva are then taken up, along with calcium and phosphate, by de-mineralized enamel to establish an improved enamel crystal structure. This improved structure is more acid resistant and contains more fluoride and less carbonate.. Fluoride is more readily taken up by demineralized enamel than by sound enamel.. Cycles of demineralization and remineralization continue throughout the lifetime of the tooth." (17)

Additionally, in a 2014 study Cho, et al. found:

"Conclusions: While 6-year-old children who had not ingested fluoridated water showed higher dft in theWF-ceased area than in the non-WF area, 11-year-old children in theWF-ceased area who had ingested fluoridated water for approximately 4 years after birth showed significantly lower DMFT than those in the non-WF area. This suggests that the systemic effect of fluoride intake through water fluoridation could be important for the prevention of dental caries." (18)

Additionally:

"Evidence also supports fluoride's systemic mechanism of caries inhibition in pit and fissure surfaces of permanent first molars when it is incorporated into these teeth pre-eruptively." (19)

Connett Fact #10: Disadvantaged communities are the most disadvantaged by fluoridation

Response:

A. This "fact" is based upon unsubstantiated claims that optimally fluoridated water is the cause of adverse effects on low income minority populations moreso than on affluent ones. There is no valid foundation in the peer-reviewed science to support these claims of adverse effects. Therefore there is no merit to a "fact" based on these groundless claims.

B. Countless, peer-reviewed scientific studies clearly demonstrate the effectiveness of fluoridation in the prevention of dental decay in entire populations. Disadvantaged populations with little, or no, access to comprehensive dental care, who have greater problems with adequate nutritional requirements and other healthcare needs, will benefit more from a very effective dental decay preventive measure such as water fluoridation which has no issues with compliance, or cost.

A list of effectiveness studies is found in the following pages.

References

- (1) Water Fluoridation Data & Statistics
US Centers for Disease Control and Prevention
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- (2) Reference Statistics on Water Fluoridation Status
US Centers for Disease Control and Prevention
http://www.cdc.gov/fluoridation/statistics/reference_stats.htm
- (3) The Newsletter of the New Zealand National Fluoridation Information Service
May, 2013
<http://www.rph.org.nz/content/d897c4ac-bbbd-4fd4-8c90-e5c779d9dfa5.cmr>
- (4) Fluoridation: Connett's naive use of WHO data debunked
Open Parachute- Dr. Ken Perrott
<https://openparachute.wordpress.com/2015/08/12/fluoridation-connetts-naive-used-of-who-data-debunked/>
- (5) Doull Statement
<http://www.ilikemyteeth.org/wp-content/uploads/2013/03/Doull-Email-on-CWF-March-2013.pdf>
- (6) Fluoride in Drinking Water: A Scientific Review of EPA's Standards
Committee on Fluoride in Drinking Water, National Research Council 2006
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David M. Damkaer and Douglas B. Dey
North American Journal of Fisheries Management 9:154-162, 1989
- (8) Water Fluoridation and the Environment: Current Perspective in the United States
Howard F. Pollick, BDS, MPH
Int J Occup Environ Health 2004;10:343–350
- (9) Reexamination of Hexafluorosilicate Hydrolysis By F NMR and pH Measurement
William F. Finney, Erin Wilson, Andrew Callender, Michael D. Morris, and Larry W. Beck
Environmental Science and Technology/ Vol 40, No. 8, 2006
- (10) NSF International Fact Sheet on Fluoridation Substances
<http://www.nsf.org/newsroom/nsf-fact-sheet-on-fluoridation-chemicals>
- (11) Prevalence and Severity of Dental Fluorosis in the United States, 1999-2004
Eugenio D. Beltrán-Aguilar, D.M.D., M.S., Dr.P.H.; Laurie Barker, M.S.P.H.; and Bruce A. Dye, D.D.S., M.P.H.
- (12) Health Effects of Ingested Fluoride (1993)
National Academies Press

- (13) Dietary Reference Intakes (DRIs): Tolerable Upper Intake Levels, Vitamins
Food and Nutrition Board, Institute of Medicine, National Academies
<http://www.nationalacademies.org/hmd/Activities/Nutrition/SummaryDRIs/~//media/Files/Activity%20Files/Nutrition/DRIs/ULs%20for%20Vitamins%20and%20Elements.pdf>
- (14) Grandjean and Choi statement
https://cdn1.sph.harvard.edu/wp-content/uploads/sites/21/2012/07/Media-Statement_Fluoride-9-12-12-Revised2.pdf
- (15) Harvard Deans Call Fluoridation “Vital”
<http://ilikemyteeth.org/harvard-deans-call-fluoridation-vital/>
- (16) The Association Between Enamel Fluorosis and Dental Caries in U.S. Schoolchildren
Hiroko Iida, DDS, MPH and Jayanth V. Kumar, DDS, MPH
<http://jada.ada.org/content/140/7/855.long>
- (17) Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States
United States Centers for Disease Control
Recommendations and Reports
August 17, 2001/50(RR14);1-42
- (18) Systemic effect of water fluoridation on dental caries prevalence
Cho HJ, Jin BH, Park DY, Jung SH, Lee HS, Paik DI, Bae KH.
Community Dent Oral Epidemiol 2014; 42: 341–348. © 2014 John Wiley & Sons A/S.
Published by John Wiley & Sons Ltd
- (19) Buzalaf MAR (ed): Fluoride and the Oral Environment. Monogr Oral Sci. Basel, Karger, 2011, vol 22, pp 97–114 (DOI:10.1159/000325151) of

Effectiveness Studies

1) 2015

Results

In the 3 areas the proportion of children who received a dental examination varied; 77.5% (n=825) for the fluoridated area, 80.1% (n=781) for the pre-fluoridated area and 55.3% (n=523) for the non-fluoridated area. The mean dmft was 1.40 for the fluoridated area, 2.02 for the pre-fluoridated area and 2.09 for the non-fluoridated area. These differences were statistically significant ($p < 0.01$). Differences were also noted in the proportion of children who were caries free, 62.6% fluoridated area, 50.8% for the pre-fluoride area and 48.6% for the non-fluoride location.

Conclusion

The children living in the well-established fluoridated area had less dental caries and a higher proportion free from disease when compared with the other two areas which were not fluoridated. Fluoridation demonstrated a clear benefit in terms of better oral health for young children.

---The Dental Health of primary school children living in fluoridated, pre-fluoridated and non-fluoridated communities in New South Wales, Australia

Anthony S Blinkhorn, Roy Byun, George Johnson, Pathik Metha, Meredith Kay, and Peter Lewis
BMC Oral Health 2015, 15:9 doi:10.1186/1472-6831-15-9 <http://www.biomedcentral.com/1472-6831/15/9>

2) 2000

RESULTS:

The prevalence of dental caries was inversely related and the prevalence of fluorosis was directly related to the concentration of fluoride in the drinking water. The mean DMFS in the communities with 0.8 to 1.4 ppm fluoride was 53.9 percent to 62.4 percent lower than that in communities with negligible amounts of fluoride. Multivariate analysis showed that water fluoride level was the strongest factor influencing DMFS scores. The prevalence of fluorosis ranged from 1.7 percent to 15.4 percent, and the increase in fluorosis with increasing fluoride exposure was limited entirely to the milder forms.

-----J Public Health Dent. 2000 Summer;60(3):147-53.

The prevalence of dental caries and fluorosis in Japanese communities with up to 1.4 ppm of naturally occurring fluoride.

Tsutsui A, Yagi M, Horowitz AM.

Department of Preventive Dentistry, Fukuoka Dental College, Fukuoka, Japan. tutuia@college.fdcnet.ac.jp

<http://www.ncbi.nlm.nih.gov/pubmed/11109211>

3) 2000

CONCLUSIONS:

Caries levels are lower among children with fluoridated domestic water supplies. Decay levels are much lower in 2002 than they were in 1984 and in the 1960s. The oral health of the less well off is worse than that of the rest of the population. The prevalence of dental fluorosis is higher amongst children and adolescents with fluoridated water supplies. Comparisons with 1984 data show an increase in the prevalence of fluorosis since that time.

---Community Dent Health. 2004 Mar;21(1):37-44.

Dental caries and enamel fluorosis among the fluoridated and non-fluoridated populations in the Republic of Ireland in 2002.

Whelton H, Crowley E, O'Mullane D, Donaldson M, Kelleher V, Cronin M.

Source

Oral Health Services Research Centre, University Dental School and Hospital, Wilton, Cork, Ireland.

4) 1995

<http://www.ncbi.nlm.nih.gov/pubmed/7643331>

CONCLUSIONS:

The ingestion of water containing 1 ppm or less fluoride during the time of tooth development may result in dental fluorosis, albeit in its milder forms. However, in these times of numerous products containing fluoride being available, children ingesting water containing 1 ppm fluoride continue to derive caries protection compared to children ingesting water with negligible amounts of fluoride. Thus, the potential for developing a relatively minor unesthetic condition must be weighed against the potential for reducing dental disease.

-----J Public Health Dent. 1995 Spring;55(2):79-84.

Dental fluorosis and caries prevalence in children residing in communities with different levels of fluoride in the water.

Jackson RD, Kelly SA, Katz BP, Hull JR, Stookey GK.

Source

Oral Health Research Institute, Indianapolis, IN 46202-2876, USA.

<http://www.ncbi.nlm.nih.gov/pubmed/15074871>

5) 2004

Conclusions:

The results of this study support existing work suggesting water fluoridation together with the use of fluoridated dentifrice provides improved caries prevention over the use of fluoridated dentifrice alone. The social gradient between caries and deprivation appears to be lower in the fluoridated population compared to the non-fluoridated population, particularly when considering caries into dentine, demonstrating a reduction in inequalities of oral health for the most deprived individuals in the population.

----The association between social deprivation and the prevalence and severity of dental caries and fluorosis in populations with and without water fluoridation

Michael G McGrady, Roger P Ellwood, [...], and Iain A Pretty

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3543717/>

6) 2012

CONCLUSIONS:

Fewer studies have been published recently. More of these have investigated effect at the multi-community, state or even national level. The dmf/DMF index remains the most widely used measure of effect. % CR were lower in recent studies, and the 'halo' effect was discussed frequently. Nevertheless, reductions were still substantial. Statistical control for confounding factors is now routine, although the effect on per cent reductions tended to be small. Further thought is needed about the purpose of evaluation and whether measures of effect and study design are appropriate for that purpose.

-----Community Dent Oral Epidemiol. 2012 Oct;40 Suppl 2:55-64. doi: 10.1111/j.1600-0528.2012.00721.x.

Effectiveness of water fluoridation in caries prevention.

Rugg-Gunn AJ, Do L.

Source

Newcastle University, UK. andrew@rugg-gunn.net

<http://www.ncbi.nlm.nih.gov/pubmed/22998306>

7) 2012

CONCLUSIONS:

Data showed a significant decrease in dental caries across the entire country, with an average reduction of 25% occurring every 5 years. General trends indicated that a reduction in DMFT index values occurred over time, that a further reduction in DMFT index values occurred when a municipality fluoridated its water supply, and mean DMFT index values were lower in larger than in smaller municipalities.

----Int Dent J. 2012 Dec;62(6):308-14. doi: 10.1111/j.1875-595x.2012.00124.x.

Decline in dental caries among 12-year-old children in Brazil, 1980-2005.

Lauris JR, da Silva Bastos R, de Magalhaes Bastos JR.

Source

Department of Paediatric Dentistry, University of São Paulo, Bauru, São Paulo, Brazil. jrlauris@fob.usp.br

<http://www.ncbi.nlm.nih.gov/pubmed/23252588>

8). 2012

Abstract

The effectiveness of fluoridation has been documented by observational and interventional studies for over 50 years. Data are available from 113 studies in 23 countries. The modal reduction in DMFT values for primary teeth was 40-49% and 50-59% for permanent teeth. The pattern of caries now occurring in fluoride and low-fluoride areas in 15- to 16-year-old children illustrates the impact of water fluoridation on first and second molars.

---Caries Res. 1993;27 Suppl 1:2-8.

Efficacy of preventive agents for dental caries. Systemic fluorides: water fluoridation.

Murray JJ.

Source

Department of Child Dental Health, Dental School, University of Newcastle upon Tyne, UK.

<http://www.ncbi.nlm.nih.gov/pubmed/8500120>

9) 1993

CONCLUSIONS:

The survey provides further evidence of the effectiveness in reducing dental caries experience up to 16 years of age. The extra intricacies involved in using the Percentage Lifetime Exposure method did not provide much more information when compared to the simpler Estimated Fluoridation Status method.

----Community Dent Health. 2012 Dec;29(4):293-6.

Caries status in 16 year-olds with varying exposure to water fluoridation in Ireland.

Mullen J, McGaffin J, Farvardin N, Brightman S, Haire C, Freeman R.

Source

Health Service Executive, Sligo, Republic of Ireland. joej.mullen@hse.ie

<http://www.ncbi.nlm.nih.gov/pubmed/23488212>

10). 2012

CONCLUSIONS:

Children with severe dental caries had statistically significantly lower numbers of lesions if they lived in a fluoridated area. The lower treatment need in such high-risk children has important implications for publicly-funded dental care.

-----Community Dent Health. 2013 Mar;30(1):15-8.

Fluoridation and dental caries severity in young children treated under general anaesthesia: an analysis of treatment records in a 10-year case series.

Kamel MS, Thomson WM, Drummond BK.

Source

Department of Oral Sciences, Sir John Walsh Research Institute, School of Dentistry, The University of Otago, Dunedin, New Zealand.

Research Design: Consecutive clinical case series: clinical details (diagnoses and the treatments provided) were recorded for children who had received comprehensive dental care

under GA between 2000 and 2009. Age, gender, ethnicity, socio-economic status and fluoridation status (determined from the residential address) were also recorded.
<http://www.ncbi.nlm.nih.gov/pubmed/23550501>