Water Fluoridation FAQ

How serious is the dental health crisis? Portland is in a dental health crisis where 1 in 5 kids in metro area suffering from untreated decay\(^1\). Portland kids suffer 40% more decay than kids in Seattle, which is fluoridated\(^ii \, iii\). Lower income kids suffer from three times the rampant decay as higher income kids\(^iv\). That’s just not fair. Too many Portlanders lack dental care and don’t get the benefit from fluoridated water. Nationally, Oregon ranks near the bottom for childhood dental health\(^v\). Similarly, the Portland metro area ranks worse than nearby, comparable cities\(^vi \, vii \, viii\). Portland is the largest U.S. city that has not adopted water fluoridation\(^ix\), and we suffer more dental decay because of it.

What are the benefits of water fluoridation? Every trusted health organization that has taken a position recommends fluoridating the water because it works, including the Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics, and the World Health Organization. There is a scientific consensus that fluoridation is effective at reducing tooth decay by at least 25% and can reduce the need for more serious dental surgeries even more\(^x\). Fluoridated drinking water guards growing teeth from decay and continuously protects everyone’s teeth over a lifetime. It’s especially beneficial to those who lack basic dental care.

Why is water fluoridation recommended over fluoride tablet programs? The CDC looked into this question in January 2011. After looking at all the ways we might get fluoride the CDC recommended communities fluoridate their water at the optimal level in order to not put the health of our teeth at risk. With school fluoride programs, there are too many gaps with summers, weekends, and critical years before kids go to school. Adults miss out on the benefit as well. Water fluoridation is therefore the most effective and most affordable option for children and adults alike\(^xi\). With a school tablet program in effect, Portland remains in a dental health crisis - experiencing levels of tooth decay far worse then nearby fluoridated cities like Seattle.

Why is water fluoridation important in addition to regularly brushing your teeth? Water fluoridation reduces decay by at least 25% over and above brushing your teeth\(^xii\). Brushing your teeth (alone) with fluoridated toothpaste reduces cavities by about 24%. Drinking fluoridated water reduces cavities by at least an additional 25%\(^, xiii \, xiv\). The CDC looked into this question in January 2011. After looking at all the ways we might get fluoride – including fluoridated toothpaste - the CDC recommended communities fluoridate their water at the optimal level in order to not put the health of our teeth at risk\(^xv\).

Are there any health concerns associated with water fluoridation? All the major trusted health and medical organizations agree: optimally fluoridated water is effective in reducing decay, important for kids and adults of all ages, and is not linked to any health concerns. The American Academy of Family Physicians, the Institute of Medicine and many more endorse water fluoridation. The Centers for Disease Control and Prevention reports that “panels of experts from different health and scientific fields have provided strong evidence that water fluoridation is safe and effective\(^xvi\).” Mild dental fluorosis, which can occasionally occur, consists of barely noticeable white streaks on the teeth. The mild fluorosis seen in the U.S. has no negative health effects, and can be a good indicator of stronger teeth, that are more resistant to decay\(^xvii\). The National Research Council has said that the rate of severe fluorosis is essentially zero, even at three times the level of optimally fluoridated water\(^xviii\).

Are there any environmental impacts? No. Salmon spend at least 90% of their time in the ocean, which has almost twice the concentration of naturally occurring fluoride as fluoridated drinking water\(^xix\). If we built a pipe and channeled all the water from Bull Run into the Columbia River (hypothetically), it would not change the fluoride concentration enough to be detectable – but would remain within the natural variability of fluoride in the river\(^xx\). Of course, the actual waterway impact of fluoridated Bull Run water would be far less.

Is water fluoridation the most cost effective solution? Yes. The cost of implementation pales in comparison to the cost of the dental health crisis. Water fluoridation significantly reduces dental costs, and results in dramatic taxpayer cost savings. Three recent studies have shown that water fluoridation cuts Medicaid dental costs in half\(^xvi \, xxi \, xxii \, xxiii\). Water fluoridation is estimated to cost Portland residents less than $1 per person, per year\(^xxiv\). The CDC estimated that about $38 is saved for every $1 invested in fluoridation\(^xxv\). Given these estimates, it is expected that the Portland area would save at least $20 million per year in dental costs\(^xxvi \, xxvii\).

Is water fluoridation okay for small children? Getting enough fluoride in childhood will determine the strength of our teeth over our entire lifetime. All the major trusted health organizations agree (including the American Academy of Pediatrics) that it’s effective in preventing decay and important for children. In fact, the American Academy of Family Physicians recommends that parents consider using fluoride supplements for children at risk of tooth decay if their water isn’t fluoridated\(^xxviii\).
What's the relationship between water fluoridation and IQ? There is no credible evidence of any effect on intelligence or behavior, positive or negative, from optimally fluoridated water. The flawed IQ studies being cited by anti-fluoride groups were in fact not about municipal water fluoridation but were poorly designed studies about foreign water systems with extremely high levels of naturally occurring fluoride; up to 1500% higher than optimally fluoridated water. These studies didn't look at confounding factors like parent IQ, but nevertheless showed no decrease in IQ at optimal levels.

Is Europe fluoridated? Europe understands the importance of fluoride and has used a variety of programs to provide fluoride to its residents, including water fluoridation, which reaches 12 million Europeans, mostly in Great Britain, Ireland and Spain. Technical challenges are a major reason why fluoridated water isn’t widespread in parts of Europe, such as in France and Switzerland where its logistically difficult because there are tens of thousands of separate sources for drinking water. This is why Western Europe relies more on salt fluoridation, which reaches more than 70 million people and is used in conjunction with fluoridated milk programs in Eastern Europe, fluoridated bottled drinking water, and universal dental care.

Is the fluoride used in cities across the US a naturally occurring mineral or toxic chemical? Like calcium and potassium, fluoride is a naturally occurring mineral already found at some level in most water supplies including Bull Run (just not enough). There is no such thing as synthetic fluoride - all fluoride comes originally from a natural source - phosphate rocks. Fluoride is naturally occurring in Bull Run at 0.1ppm but needs to be at 0.7ppm for optimal health benefit. Beer, wine, and grape juice all have high levels of naturally occurring fluoride. Some opponents say it’s a “toxic waste byproduct” which creates the false impression that it’s synthetic. Politifact.com reviewed this and found it to be false: http://www.politifact.com/texas/statements/2011/apr/19/mike-ford/austin-resident-says-flouride-compound-added-local/

How is water fluoridation a leading social justice issue facing Portland? We are facing a dental health crisis that especially impacts the poor and uninsured in Oregon who are 3 times as likely to have rampant decay, and end up in the emergency room with dental-related problems. Studies show that the lower your income, the higher your rates of rampant decay. Fluoridating the water is important for everyone, but particularly helps those who are already struggling to make ends meet.

Who supports water fluoridation? Every trusted major health organization recommends fluoridating the water because it works, including the Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics, the Surgeon General and the World Health Organization. Locally more than 80 local organizations have endorsed Portland’s proposal to fluoridate the water. These include health, social justice, education, research institutions, businesses and health systems. To see the complete list visit: http://healthykidshealthyportland.org/supporters/

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2 Ibid
19 The change in the fluoride concentration of the Columbia River was calculated with the formula described in the paper Osterman, AJPH 1980. This formula uses a very conservative assumption that all the fluoride added to the water supply would end up in the river. The average value for the flow rate of the municipal water (101 mgd) was obtained from the Portland Water Bureau. The median flow rate of the Columbia (127 971) and the median fluoride concentration in the Columbia (0.12 ppm) were obtained from the United States Geological Survey: [http://pubs.usgs.gov/wri/2004/1255/results/ea4/wt/wt.xml](http://pubs.usgs.gov/wri/2004/1255/results/ea4/wt/wt.xml). The data was collected at Warnendale, Oregon, slightly up river from Portland and before the Willamette River flow is added to the Columbia. This provides a conservative (i.e. lowest) estimate for the flow rate and fluoride concentration. The median fluoride concentration of the Bull Run water supply was assumed to be 0.1 ppm based on Water Bureau tests, and the optimal fluoride rate was assumed to be 0.7 ppm. Using this data and equation, the change in fluoride concentration in the Columbia due to fluoridation of the Bull Run water supply was estimated as 0.00047 ppm.
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