

CALCULATIONS

Calculations # 1: A 12 oz. glass of water fluoridated at 0.7 mg/l, the amount proposed for Portland, would contain 0.248 mg of fluoride:

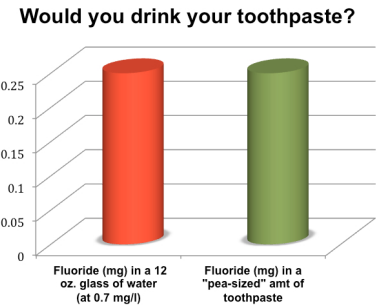
Conversions/assumptions:

1 glass = 12 ounces of water = 0.3548 liters

Proposed fluoride concentration in Portland: 0.7 mg/l¹

Calculation:

0.7 mg/l of fluoridated water x [0.3548 liters/1 glass of water (12 oz)] = **0.248 mg of fluoride per 1 glass (12 oz.)**



Calculation #2: A "pea-sized" (0.25 gram) amount of toothpaste contains approximately the same amount of fluoride as a 12 ounce glass of water.

Conversions/assumptions and citations:

0.25 grams = Amount of toothpaste in a "pea-sized dab" recommended for children under 6.²

Typical U.S. toothpaste fluoride concentration: 1000 parts per million³

1000 parts per million = 1,000 parts of fluoride per 1,000,000 parts of toothpaste

1 gram (g) = 1000 milligrams (mg)

Calculation:

0.25 grams of toothpaste x (1000 grams of fluoride/1,000,000 grams toothpaste) = 0.00025 grams
= **0.25 milligrams**

Calculations based on Healthy Kids Healthy Portland PAC's assumption an 8 oz. glass of water and 1100 ppm toothpaste

Because Healthy Kids Healthy Portland said their numbers (for which they don't show any calculations) were based on an 8 ounce glass of water and a fluoridated toothpaste concentration of 1100 parts per million we thought it would be useful to see how many of their 8 oz. glasses of water would it take to equal the fluoride in a pea-sized amount of toothpaste. **The answer: 1.66 glasses**

Conversions/Assumptions: 8 ounce glass of water = 0.2365 liters

0.7 mg/l of fluoride x [0.2365 liters/1 glass of water (12 oz.)] = **0.165 mg of fluoride per glass (8 oz.)**

0.25 grams of toothpaste x [1100 grams of fluoride/1,000,000 grams toothpaste] = 0.000275 grams
= **0.275 milligrams (mg) in a pea-sized dab of toothpaste at 1100 ppm**

of 8 oz. glasses needed to equal 0.275 mg = 0.275 mg/ 0.165 mg/glass = **1.66 glasses (8 oz)**

¹ City of Portland Water Bureau, Cost to Implement Fluoridation, June 8, 2012.

² DenBesten P, et. al "Fluoride levels in whole saliva of preschool children after brushing with 0.25 g (pea-sized) as compared to 1.0 g (full-brush) of a fluoride dentifrice," Pediatric Dentistry, 1996 Jul-Aug;18(4): 277-80. (<http://www.ncbi.nlm.nih.gov/pubmed/8857654>)

University of Washington oral health webpage² providing toothpaste recommended doses for children and stating, "a 'pea-size' (.25 grams) is recommended for children 3 to 5 years"

<http://www.washington.edu/earlychildhood/faqs/childrens-oral-health-faqs>

³ Colgate Oral and Dental Health Resource Center stating: "Toothpaste delivers about 1,000 parts per million of fluoride" <http://www.colgate.com/app/CP/US/EN/OC/Information/Articles/Oral-and-Dental-Health-at-Any-Age/Adults/Adult-Maintenance-and-Care/article/Can-Fluoride-Help-Adults.cvsp>

