



# TOWN OF ROCKPORT BOARD OF HEALTH

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The Rockport Board of Health is responsible for the protection and promotion of public health, the control of disease, and the promotion of sanitary living conditions for the community. We have been gathering scientific data and examining current research related to water fluoridation and its safety for nearly 1 year. Early childhood tooth decay is the most common chronic disease among children (Bell, H, Rozier, HG, Preisser, JS. 2014. Effects of early dental office visits on dental caries experience. *American Journal of Public Health*, 104: 10, 1979-1985). **We unanimously support community water fluoridation in Rockport.**

## FLUORIDE FACTS

### 1) Fluoride occurs naturally in water.

- a) Fluoride is a naturally occurring element in minerals and water.
- b) In Rockport, we add fluoride to our drinking water to reach the recommended level that prevents dental cavities. (CDC. 2013. *Community Water Fluoridation*. <http://www.cdc.gov/fluoridation/faqs/>)

### 2) Water fluoridation has played a dominant role in the prevention of dental cavities in two ways:

- a) Fluoride works topically on tooth surfaces joining the enamel crystals on tooth surfaces, keeping the surfaces strong and solid, strengthening and protecting teeth from decay. (CDC. 2013. *Community Water Fluoridation*. <http://www.cdc.gov/fluoridation/faqs/>; Featherstone, J. 1999. Prevention and the reversal of dental caries. *Community Dentistry and Oral Epidemiology*, 17: 31-40)
- b) In young children fluoride works systemically by combining with calcium and phosphate of the developing teeth making them more resistant to decay for longer periods than topically applied fluoride (Hellwig, E, Lennon, AM. 2004. Systemic versus topical fluoride. *Caries Research*, 38: 258-26; Singh, KA, Spencer, AJ, Armfield, JM. 2003. Relative effects of pre- and post- eruption water fluoride on caries. *Journal of Public Health Dentistry*, 63: 11-19; Rozier, RG, et. Al. 2010. Evidence-based clinical recommendations on the prescription of dietary fluoride for caries prevention. *Journal of the American Dental Association*, 141: 1480-1489).

### 3) Fluoride is a proven way to strengthen teeth for people of all ages.

- a) Among 4 to 17 year olds water fluoridation reduces dental caries by 30% to 50% of what could be expected for those not consuming fluoridated water (Truman, BI, Goochh, BF, Sulama, I, Gift, HC, et. al. 2002. Reviews of evidence on intervention to prevent dental caries, oral and pharyngeal cancers and sportsrelated craniofacial injuries. *American Journal of Preventive Medicine*, 23: 21-54)
- b) Adults who had lived all their lives in fluoridated community had, on average, 34.7% fewer decayed, missing and filled teeth than those who had lived all their lives in non-fluoridated communities. (Griffin, SO, Regnier E, Griffin PM, Huntley, V. 2007. Effectiveness of fluoride in preventing caries in adults. *Journal of Dental Research*, 86:410-415)
- c) A Nevada study found that youth living in a community without water fluoridation and not having had dental sealants had a significant higher probability of being in the high decayed, missing, filled teeth group. (Ditmyer, M, Dounis, G, Mobley, C, Schwarz, E. 2010. A case-controlled study of determinants for high and low dental caries prevalence in Nevada youth. *BMC Oral Health*, 10:24-31)

#### **4) Scientific studies support the benefits of water fluoridation – both past and recent studies.**

- a. Epidemiological studies on dental cavities and the benefits of community water fluoridation have been conducted since the 1940s and investigators document the benefits of fluoride in drinking water (McDonagh, et.al. 2000. A systematic review of water fluoridation. *Br Medical Journal*, 321: 855-9; Rozier, RG, et. Al. 2010. Evidence-based clinical recommendations on the prescription of dietary fluoride for caries prevention. *Journal of the American Dental Association*, 141: 1480-1489)
- b. Every surgeon general since 1952 has supported water fluoridation as a means to improve the public's health and decrease dental cavities.
- c. April 25, 2013: U.S. Surgeon General Regina Benjamin, MD, officially endorsed community water fluoridation as "one of the most effective choices communities can make to prevent health problems while actually improving the oral health of their citizens." She noted "Fluoridation's effectiveness in preventing tooth decay is not limited to children, but extends throughout life, resulting in fewer and less severe cavities. In fact, each generation born since the implementation of water fluoridation has enjoyed better dental health than the generation that preceded it."

#### **5) Water fluoridation is safe**

- a. Fluoride in the context of community water fluoridation is not neurotoxic. (Broadbent, JM, Thomson, WM, Ramrakha, S., Moffitt, TE, et. al. 2014. Community Water Fluoridation and Intelligence. *American Journal of Public Health*.)
- b. Water fluoridation has no impact, beneficial or deleterious, on the risk of hip fractures. (Suarez-Almazor, ME, Flowerdew, LD, Saunders, LD, Soskoin, CL, Russell, AS. 1993. The fluoridation of drinking water and hip fractures. *American Journal of Public Health*. 83: 689-693)
- c. The National Cancer Institute has reviewed studies over the past 25 years and concludes that none of the data demonstrate an association between fluoridated drinking water and cancer. (National Cancer Institute, 2011, Fluoridated Water. <http://www.cancer.gov/cancertopics/factsheet/Risk/fluoridated-water>)
- d. The Town of Rockport Public Works Department adheres to Massachusetts Regulation: 310 CMR 22.04(8)  
*No supplier of water shall add, install or use any chemicals, drinking water additives or treatment devices or equipment that come into direct contact with drinking water unless such devices or equipment have received the prior written approval of the Department... and conforms to the applicable American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 60 or 61... was approved by the Environmental Protection Agency (EPA) prior to April 1990 and conforms to the Standards of the American Water Works Association (AWWA).*

#### **6) What is Fluorosis**

- a. Dental fluorosis is caused by a disruption in enamel formation which occurs during tooth development in early childhood related to higher than optimal intake of fluoride (American Dental Association, 2005)
- b. The type of fluorosis seen in the US today is largely the very mild and mild categories which has no effect on tooth function and may make tooth enamel more resistant to decay (American Dental Association, 2005; USDHHS, 1/13/2011; Lewis, C. 2014. Fluoride and Dental Caries Prevention in Children. *Pediatrics in Review*, 35:3-15)
- c. More severe dental fluorosis is unusual in the US. (Lewis, C. 2014. Fluoride and Dental Caries Prevention in Children. *Pediatrics in Review*, 35:3-15)

#### **7) Water Fluoridation saves the community money.**

- a. Medicare expenses for dental care are reduced. A New York study shows that approximately \$24 per person, per year was saved in Medicaid expenditures because of the cavities that were prevented by drinking fluoridated water. (Kumar, JV, Adekugbe, O, Melnik, TA. 2010. Geographic Variation In Medicaid Claims for Dental Procedures in NY State: Role of Fluoridation Under Contemporary Conditions, *Public Health reports*, 125: 647-654)
- b. Alternatives to water fluoridation are costly fluoride varnishes or gels. In Massachusetts, 25% of residents had no dental insurance coverage, while the accessibility of dentists participating in MassHealth remains low and cannot meet the needs of eligible children. (Massachusetts Department of Public Health, Office of Oral Health. *The Status of Oral Disease in Massachusetts: A Great Unmet Need 2009*. Boston, Massachusetts Department of Public Health, 2009)
- c. Note: The Town of Rockport does NOT fund any school fluoride varnish, gel or wash programs.

- c. Community water fluoridation is considered among the 10 greatest US public health achievements of the 20<sup>th</sup> century. (CDC. 1999. *Achievements in Public Health, 1900-1999: Fluoridation of Drinking Water to Prevent Dental Caries* .<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4841a1.htm>)
- d. *Healthy People 2020* supports community water fluoridation as the most effective way to deliver the benefits of fluoride to a community. Studies show that it prevents tooth decay by 18 to 40 percent <http://www.healthypeople.gov/2020/topics-objectives/topic/oral-health?topicid=32>

**8) Water fluoridation is good for the citizens of Rockport**

- a. It decreases the gap in tooth decay rates between upper and lower income people and is an effective method of reducing the socio-economic-status disparity in the burden of dental cavities. (Burt, BA. 2002. Fluoridation and Social Equity. *Journal of Public Health Dentistry*, 62; 195-200)
- b. Leading health and medical organizations agree that fluoridated water is safe and effective.

Rockport Board of Health

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