



**Rhode Island Department of Health**  
**A Statement on Community Water Fluoridation Safety and Efficacy**

**October 2017**

*The Rhode Island Department of Health (RIDOH) has taken into account the extensive research done on community water fluoridation since its inception and has formulated the following statement in response to claims of the practice being harmful to the public. This document provides a brief overview of the safety and efficacy of community water fluoridation as a public health practice to reduce the incidence of dental decay. It must be pointed out that this document is intended to be brief in nature and does not encompass the entire body of scholarly work on water fluoridation that overwhelmingly supports both the effectiveness and safety of community water fluoridation as a proven public health practice.*

Water safety is defined and determined by federal, state, and local regulations. The main federal law that ensures the quality of Americans' drinking water is the Safe Drinking Water Act (SDWA). Under SDWA, the U.S. Environmental Protection Agency (EPA) sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. Our understanding about the safety of fluoridation is guided by federal regulations, comprehensive reviews conducted by expert panels, and individual studies. Some of those reviews and studies have been conducted by:

National Health and Medical Research Council, Australian Government (2007)<sup>1</sup>  
National Research Council, U.S.A. (1993, 2006)<sup>2,3</sup>  
World Health Organization (1994, 1996, 2006)<sup>4-6</sup>  
Agency for Toxic Substances and Disease Registry, U.S. Public Health Service (2003)<sup>7</sup>  
International Programme on Chemical Safety, W.H.O. (2002)<sup>8</sup>  
Forum on Fluoridation, Ireland (2002)<sup>9</sup>  
Medical Research Council, U.K. (2002)<sup>10</sup>  
University of York, U.K. (2000)<sup>11</sup>  
Institute of Medicine, U.S.A. (1999)<sup>12</sup>  
Health Canada (1999)<sup>13</sup>  
Lewis and Banting, Canada (1994)<sup>14</sup>  
U.S. Public Health Service (1991,2015 )<sup>15</sup>

The effectiveness of water fluoridation has been documented in scientific literature for over 50 years. Since the introduction of fluoridation in 1945, numerous studies have been published making it one of the most widely studied public health measures in history. Studies prove water fluoridation continues to be effective in reducing tooth decay by 20-40%, even in an era with widespread availability of fluoride from other sources, such as fluoride toothpaste.

In August 2002, the U.S. Task Force on Community Preventive Services (Task Force) concluded that the evidence for the effectiveness of fluoridation is strong based on the number and quality of studies that have been done, the magnitude of observed benefits and the consistency of the

findings. The Task Force issued a strong recommendation that water fluoridation be included as part of a comprehensive population-based strategy to prevent or control tooth decay in communities.<sup>16</sup> Additional documentation of this recommendation is listed below.

- Centers for Disease Control and Prevention. Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. MMWR 2001;50(No. RR-14).<http://www.cdc.gov/mmwr/preview/mmwrhtml/r5014a1.htm>
- US Department of Health and Human Services. Oral health in America: a report of the Surgeon General. Rockville, MD: US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000.  
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwj9kNG5y9fWAhVK0YMKHVfCqUQFggoMAA&url=https%3A%2F%2Fwww.nidcr.nih.gov%2Fdata/statistics%2Fsurgeongeneral%2Freport%2Fexecutivesummary.htm&usg=AOvVaw1L-awVXQ09P4B1GybFsTWu>
- Horowitz HS. The effectiveness of community water fluoridation in the United States. J Public Health Dent 1996;56(5 Spec No):253-8.  
[https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwje4\\_zey9fWAhUB2IMKHc7EC3kQFggoMAA&url=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2Fpubmed%2F9034970&usg=AOvVaw3JpaNQsogkCPivrY-s9N\\_m](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwje4_zey9fWAhUB2IMKHc7EC3kQFggoMAA&url=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2Fpubmed%2F9034970&usg=AOvVaw3JpaNQsogkCPivrY-s9N_m)
- Yeung CA. A systematic review of the efficacy and safety of fluoridation. Evid Based Dent 2008;9:39-43.<http://www.nature.com/ebd/journal/v9/n2/full/6400578a.html>
- Australian National Health and Medical Research Council. NHMRC public statement: the efficacy and safety of fluoridation 2007.  
[https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjH6aGDzNfWAhUH\\_IMKHZJ0AtsQFggoMAA&url=https%3A%2F%2Fwww.nhmrc.gov.au%2F\\_file\\_s\\_nhmrc%2Fpublications%2Fattachments%2Feh41\\_statement\\_efficacy\\_safety\\_fluoride.pdf&usg=AOvVaw0gO8yDMZ5PeRf33r5alNmr](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjH6aGDzNfWAhUH_IMKHZJ0AtsQFggoMAA&url=https%3A%2F%2Fwww.nhmrc.gov.au%2F_file_s_nhmrc%2Fpublications%2Fattachments%2Feh41_statement_efficacy_safety_fluoride.pdf&usg=AOvVaw0gO8yDMZ5PeRf33r5alNmr)
- Ripa LW. A half-century of community water fluoridation in the United States: review and commentary. J Public Health Dent 1993;53(1):17-44. <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEWjWwO7eytfWAhWJ5IMKHTELAHwQFggoMAA&url=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2Fpubmed%2F8474047&usg=AOvVaw13VhuHdKZfZ2k9WeSSs2-G>
- The Centers for Disease Control and Prevention (CDC) has proclaimed community water fluoridation as one of 10 great public health achievements of the 20<sup>th</sup> century. <http://www.cdc.gov/about/history/tengpha.htm>

In addition to the listed documentation above, below are seventeen (17) scholarly articles (with links to the original article) that echo the fact that properly implemented community water fluoridation is safe and effective. Again, this is only a portion of the large amount of research supporting the safety and efficacy of this public health practice:

1. Australian Government. National health and medical research council. A Systematic Review of the Efficacy And Safety Of Fluoridation. 2007. Available at [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjRu\\_iKy9fWAhUq\\_IMKHUdWD0AQFggoMAA&url=https%3A%2F%2Fwww.nhmrc.gov.au%2Fguidelines-publications%2Feh41&usq=AOvVaw0nrjt3yiOi-K0YMoLmzR31](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjRu_iKy9fWAhUq_IMKHUdWD0AQFggoMAA&url=https%3A%2F%2Fwww.nhmrc.gov.au%2Fguidelines-publications%2Feh41&usq=AOvVaw0nrjt3yiOi-K0YMoLmzR31)
2. National Research Council. Health effects of ingested fluoride. Washington, DC: National Academy Press, 1993. Available at [http://www.nap.edu/catalog.php?record\\_id=2204](http://www.nap.edu/catalog.php?record_id=2204)
3. National Research Council. Committee on Fluoride in Drinking Water, Board on Environmental Studies and Toxicology, Division on Earth and Life Studies. Fluoride in Drinking Water: A Scientific Review Of EPA's Standards. THE NATIONAL ACADEMIES PRESS. Washington, D.C. Available at [http://www.nap.edu/catalog.php?record\\_id=11571](http://www.nap.edu/catalog.php?record_id=11571)
4. World Health Organization. WHO technical report series #846: Report of a WHO expert committee on oral health status and fluoride use. Geneva, Switzerland: World Health Organization. 1994 [http://apps.who.int/iris/bitstream/10665/39746/1/WHO\\_TRS\\_846.pdf](http://apps.who.int/iris/bitstream/10665/39746/1/WHO_TRS_846.pdf)
5. Guidelines for Drinking-Water Quality, 2nd edition. Volume 2 - Health criteria and other supporting information. WHO, Geneva, 1996.
6. J. Fawell, K. Bailey, J. Chilton, E. Dahi, L. Fewtrell and Y. Magara. Fluoride in Drinking-water. World Health Organization (WHO) 2006. Available at [http://whqlibdoc.who.int/publications/2006/9241563192\\_eng.pdf](http://whqlibdoc.who.int/publications/2006/9241563192_eng.pdf)
7. U.S. Department Of Health And Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry. Toxicological Profile for Fluorides, Hydrogen Fluoride, and Fluorine. September 2003. Available at <http://www.atsdr.cdc.gov/toxprofiles/tp11.html>
8. International Programme on Chemical Safety (IPCS) Environmental health criteria, No. 227. Fluorides. Geneva : World Health Organization, 2002 Available at <http://www.inchem.org/documents/ehc/ehc/ehc227.htm>
9. Forum on Water Fluoridation in Ireland. 2002. Available at <http://health.gov.ie/blog/publications/report-of-the-forum-on-fluoridation/>
10. Medical Research Council. Medical Research Council working group report: Water fluoridation and health. September 2002. Available at <https://www.mrc.ac.uk/publications/browse/water-fluoridation-and-health/>
11. NHS Centre for Reviews and Dissemination, University of York. A systematic review of public water fluoridation. York, UK: York Publishing Services Ltd. 2000. Available at <http://www.york.ac.uk/inst/crd/fluores.htm>
12. Standing Committee on the Scientific Evaluation of Dietary Reference Intakes, Food and Nutrition Board, Institute of Medicine (1999). Dietary reference intakes for calcium, phosphorus, magnesium, vitamin D, and fluoride. Washington, D.C.: National Academy Press. Available at <http://books.nap.edu/books/0309063507/html/288.html#pagetop>

13. Locker, D. Benefits and risks of water fluoridation. An update of the 1996 federal-provincial sub-committee report. Prepared under contract for the Public Health Branch, Ontario Ministry of Health, First Nations Inuit Health Branch, Health Canada. University of Toronto: Community of Dental Health Services Research Unit, Faculty of Dentistry, 1999. Available at [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwi82Lao0dfWAhWE7YMKHcjQDGkQFggoMAA&url=http%3A%2F%2Fwww.simcoemuskokahealth.org%2Fdocs%2Fdefault-source%2Fjfy-health-care-professionals%2FPosition\\_Statement\\_fluoride&usg=AOvVaw225mSF\\_OrqzQoLUi8muL13](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwi82Lao0dfWAhWE7YMKHcjQDGkQFggoMAA&url=http%3A%2F%2Fwww.simcoemuskokahealth.org%2Fdocs%2Fdefault-source%2Fjfy-health-care-professionals%2FPosition_Statement_fluoride&usg=AOvVaw225mSF_OrqzQoLUi8muL13)
14. Lewis DW, Banting DW. Water fluoridation: current effectiveness and dental fluorosis. *Community Dent Oral Epidemiol.* 1994 Jun;22(3):153-8. <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwignpre0dfWAhVi9IMKHS7WA00QFggoMAA&url=https%3A%2F%2Fwww.ncbi.nlm.nih.gov%2Fpubmed%2F8070242&usg=AOvVaw1ukoKjMiNXyaH5oAl-GYu9>
15. Report of the subcommittee on fluoride of the Committee to Coordinate Environmental Health and Related Programs, USPHS. Review of fluoride: Benefits and Risks. Public Health Service: Department of Health and Human Services. 1991. [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwiBteb00dfWAhWl8oMKHeXTDesQFggoMAA&url=https%3A%2F%2Fwww.dentalwatch.org%2Ffl%2Fpfs\\_1991.pdf&usg=AOvVaw0jqIWPvr45zGim2ruUwLe1](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwiBteb00dfWAhWl8oMKHeXTDesQFggoMAA&url=https%3A%2F%2Fwww.dentalwatch.org%2Ffl%2Fpfs_1991.pdf&usg=AOvVaw0jqIWPvr45zGim2ruUwLe1)
16. U.S Public Health Service Recommendation for Fluoride Concentration in Drinking Water for the Prevention of Dental Caries, USPHS. U.S Department of Health and Human Services Federal Panel on Community Water Fluoridation. 2015. Available at: [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwi1soOLINfWAhUZ24MKHfauCxxQFggtMAE&url=http%3A%2F%2Fwww.ada.org%2F~%2Fmedia%2FEBD%2Ffiles%2FPHS\\_2015\\_Fluoride\\_Guidelines.pdf%3Fla%3Den&usg=AOvVaw2Ex\\_i3nE\\_b0JMSp27BMkdf](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwi1soOLINfWAhUZ24MKHfauCxxQFggtMAE&url=http%3A%2F%2Fwww.ada.org%2F~%2Fmedia%2FEBD%2Ffiles%2FPHS_2015_Fluoride_Guidelines.pdf%3Fla%3Den&usg=AOvVaw2Ex_i3nE_b0JMSp27BMkdf)
17. Centers for Disease Control and Prevention. Promoting oral health: interventions for preventing dental caries, oral and pharyngeal cancers, and sport-related craniofacial injuries: a report on recommendations of the Task Force on Community Preventive Services. *MMWR* 2001;50(No. RR-21):1-12. Available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5021a1.htm>

Recent opponents of water fluoridation have cited the *Lancet Journal*'s published article in which two authors claim that fluoride might cause neurodevelopmental harm, a claim based on a single study (Choi, AL, Sun, G, Zhang, Y and Grandjean, P. Developmental fluoride neurotoxicity, a systematic review and meta-analysis. *Environ Health Prospect*, 2012;120:1362-1368). RIDOH would refer these individuals to a response letter from two oral health professionals that was also published in the *Lancet Journal* and available at the following web-link:

[http://www.thelancet.com/journals/lan eur/article/PIIS1474-4422\(14\)70119-X/fulltext?hc\\_location=ufi](http://www.thelancet.com/journals/lan eur/article/PIIS1474-4422(14)70119-X/fulltext?hc_location=ufi) . Their response addresses the various confounding variables that

were not taken into account in the original meta-analysis and points to many various flaws in the study design that regularly leads to misuse and misinterpretation of the paper.

To help illustrate the national consensus on community water fluoridation being a benefit for communities, RIDOH recommends viewing the American Dental Association's "National and International Organizations That Recognize the Public Health Benefits of Community Water Fluoridation for Preventing Dental Decay" List which is too long to include the body of this letter, however, is available at the following web-link: <http://www.ada.org/en/public-programs/advocating-for-the-public/fluoride-and-fluoridation/fluoridation-facts/fluoridation-facts-compendium> . This list shows over one hundred (100) national and/or international organizations that have recognized community water fluoridation as beneficial to the oral health of a population.

**In conclusion, the large weight of scientific evidence shows that community water fluoridation is a safe and cost-effective public health intervention that yields substantial impacts in reducing early childhood caries (cavities).**

That being said, community water fluoridation is not mandated by the State of Rhode Island or the Federal government, but is rather decided at the local level, with each municipality making their own decision on enacting community water fluoridation. Many Rhode Island municipalities have chosen to make this part of their drinking water supply; however none have been mandated or forced to fluoridate their water by the State or Federal government.

RIDOH continues to support communities that have enacted community water fluoridation as a public health practice and would encourage any communities lacking this proven preventive measure to begin adjusting their water fluoride levels to help prevent dental decay. For further documentation supporting this practice, please direct inquiries to the Oral Health Program's current Sealant & Fluoridation Coordinator, Veronica Rosa-DaFonseca ([v.rosadafonseca@health.ri.gov](mailto:v.rosadafonseca@health.ri.gov)), or to the Dental Director, Sam Zwetchkenbaum, DDS, MPH ([Samuel.Zwetchkenbaum@health.ri.gov](mailto:Samuel.Zwetchkenbaum@health.ri.gov))