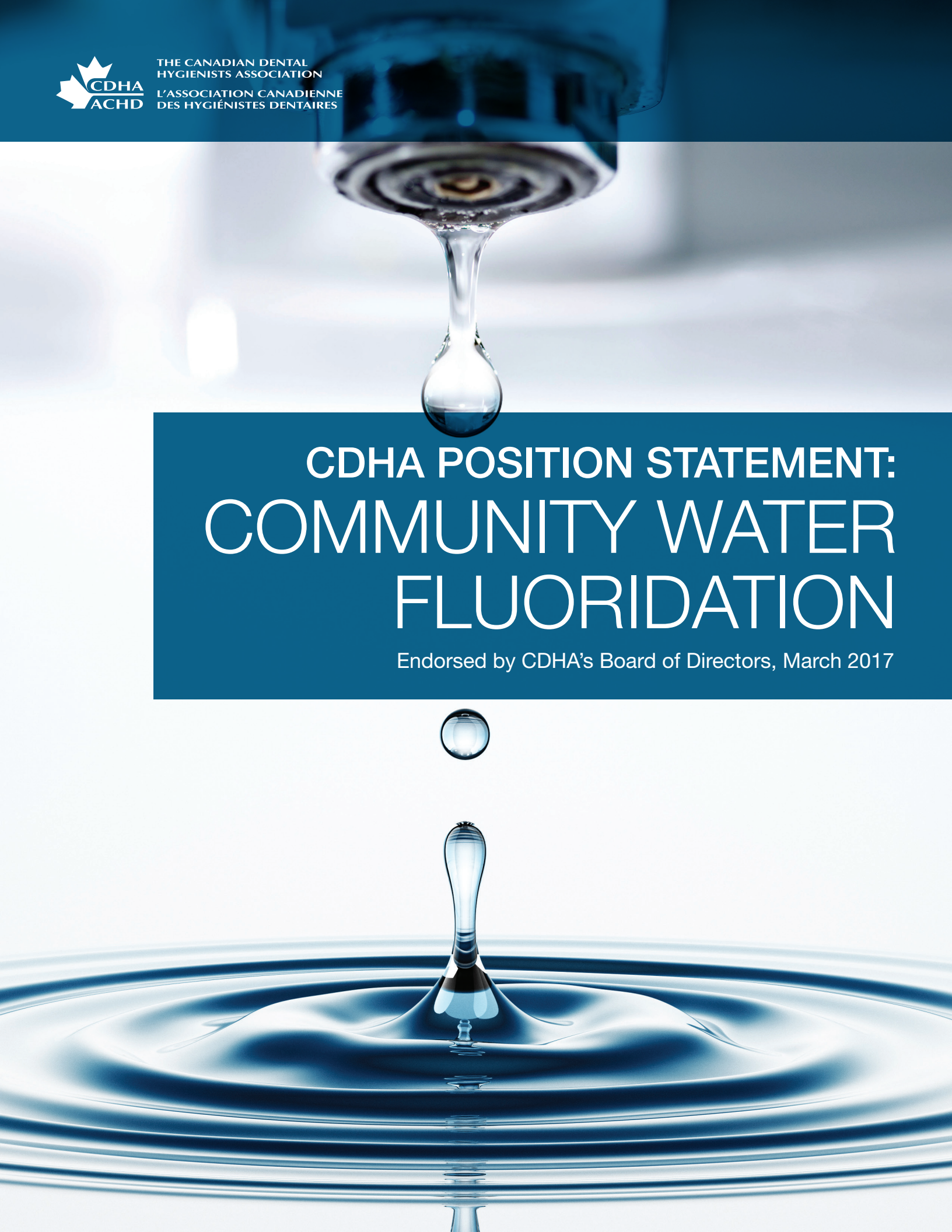
THE CANADIAN DENTAL HYGIENISTS ASSOCIATION
L'ASSOCIATION CANADIENNE DES HYGIÉNISTES DENTAIRES



CDHA POSITION STATEMENT:
COMMUNITY WATER FLUORIDATION

Endorsed by CDHA's Board of Directors, March 2017

Canadian Dental Hygienists Association Position Statement

The Canadian Dental Hygienists Association (CDHA) supports community water fluoridation (CWF) as an effective and equitable approach to helping prevent dental decay. The evidence clearly demonstrates that CWF protects the oral and overall health of communities. All levels of government must take steps to ensure that all Canadians benefit from CWF. Municipal governments should provide fluoridated water for residents. Provincial/territorial governments should amend pertinent legislation and regulations to require CWF for all municipal drinking water systems when source-water levels are below the optimal concentration range. Finally, the federal government must take a leadership role in developing a national community water fluoridation strategy, including investments in education about the science and evidence to support this vital preventive public health initiative.

Introduction

Oral health affects overall health, self-confidence, and quality of life. While many of us enjoy the benefits of good oral health, dental decay (cavities) is still a significant problem for Canadians.[1] For example, it is the leading cause of day surgery among children under the age of six, and children from disadvantaged communities have day surgery rates much higher than other Canadian children.[2] Dental decay can lead to pain and difficulty eating, and can put one at a significant educational and professional disadvantage because of lost school and work days due to illness. Community water fluoridation (CWF) has been used around the world as an equitable and cost-effective means of reducing cavities in all population groups.

The Importance of Fluoride for Oral Health

Fluoride is a mineral that exists naturally in the environment and in virtually all water supplies. Many communities adjust the level of naturally occurring fluoride in drinking water to protect against dental decay. This process is commonly known as CWF. The fluoride in drinking water helps to protect teeth in two ways. First, for Canadians of all ages, the fluoride mixes with saliva to help counteract acids in the mouth created by bacteria and sugar. These acids are responsible for dental decay. CWF provides teeth with consistent, low-level exposure to fluoride throughout the day and across a lifetime. Second, during children's tooth-forming years, the fluoride helps to strengthen the enamel of developing teeth, making them more resistant to decay and setting the foundation for good oral health. In 2013, CWF was identified as one of the US Centers for Disease Control and Prevention's ten greatest public health achievements of the 20th century.[3]

Safety, Effectiveness, and Equity

The safety and effectiveness of water fluoridation have been frequently studied and continue to be supported by scientific evidence. The ability of fluoridated water to prevent dental cavities in people of all ages has been well documented in the literature.[2-7] Canadians have benefitted from CWF for over 70 years, which means that we have more than seven decades of evidence to show that this practice is an important, safe, and effective way to reduce dental decay across populations. Leading national and international health bodies, including Health Canada and the Public Health Agency of Canada, the Canadian Association of Public Health Dentistry, the World Health Organization, and the US Centers for Disease Control and Prevention, all strongly support CWF.

In addition to protecting against dental decay, CWF has been proven safe for overall health and for the environment.[4,8] High-quality evidence does not support a link between exposure to fluoride in drinking water at the optimal concentration to protect dental health in Canada and adverse health effects, such as cancer risk, bone fracture, toxicity, and lowered IQ. Fluorosis is a change in the appearance of tooth enamel. It does not affect the health or function of the teeth. It is important to note that the prevalence of moderate to severe dental fluorosis was considered too low to report in the most recent oral health component of the Canadian Health Measures Survey.[1]

One of the significant advantages of CWF is that it not only helps to reduce the scale and severity of dental decay, but it benefits residents in a community, regardless of age, socioeconomic status, education, employment or dental insurance status.[7,9,10] This is particularly important because lower income Canadians are almost twice as likely to suffer from poor oral health than higher income Canadians.[1] Residents of a community with fluoridated drinking water can enjoy fluoride's protective benefits just by turning on the tap.

In addition, CWF is the most economical method of reducing the burden of dental disease in a population.[11-13] The cost to adjust fluoride levels in municipal drinking water supplies is much lower than the costs of restorative dentistry for children living without fluoridated water, and is also lower than the cost of providing other potential sources of fluoride to residents.[10]

The benefits of CWF extend beyond cost savings. Dental problems may lead to frequent absences from school and lost parental working days,[14,15] which could have a significant impact on learning, productivity, and the larger economy. By reducing the risk of dental cavities in communities, CWF prevents needless pain, discomfort, stress, and quality of life burdens in people of all ages and circumstances.

The Regulation of Community Water Fluoridation in Canada

The responsibility of providing safe drinking water and CWF is shared by the federal, provincial/territorial, and municipal governments. Health Canada works in collaboration with the provinces and territories to maintain and improve drinking water quality by providing the scientific rationale and technical expertise to establish guidelines for fluoride in drinking water. Currently, the optimal concentration of fluoride to protect dental health in Canada is 0.7 mg/L or 0.7 parts per million, which takes into consideration all sources of fluoride.[16]

The primary enabling legislation for community water fluoridation is enacted at the provincial level, as the provincial and territorial governments regulate the quality of drinking water in their jurisdiction. However, the fluoridation of drinking water supplies is a decision that is made by each municipality.

In the United States, many states now require municipalities and counties to introduce and/or maintain CWF through mandates and legislation.[17,18] These laws often specify the minimum population threshold to which these mandates are applicable. For example, Connecticut's law applies to community water systems serving at least 20,000 residents, while in other states the threshold may be 5,000 residents. The 2013–2018 Canadian oral health framework recommends that provincial and territorial governments adopt a similar approach by mandating the practice of CWF through legislation.[19]

Unequal Access to this Public Health Approach

Although CWF is supported locally, nationally, and internationally by governments and health organizations, there is still a small but vocal minority opposed to its use. As a result, some municipalities in Canada have discontinued CWF in recent years,[20] which is concerning because research on CWF cessation and dental decay points increasingly to a rise in cavities post-cessation.[1] Although some communities in Canada have discontinued water fluoridation, there is reason for hope. Many other communities have been successful in maintaining or initiating this practice thanks to the efforts of oral health practitioners, public health professionals, members of the academic and research community, and concerned community representatives. Canadians are hearing their voices and starting to recognize oral health as an important public good.

Even in an era of widespread availability of fluoride from other sources, evidence continues to reaffirm that CWF, at the optimal concentration level, is a safe, effective, and socially equitable approach to reducing dental decay and does not pose risks for adverse health outcomes. Researchers from around the world conclude that community water fluoridation delivers a return on investment; it saves money as well as teeth!

Community water fluoridation remains an important, safe, effective, and equitable means of reducing dental decay in Canadian communities!

References

1. Health Canada. *Summary report on the findings of the oral health component of the Canadian Health Measures Survey, 2007-2009.* Ottawa (ON): Health Canada; 2010 [cited 2017 Feb 27].
2. Canadian Institute for Health Information. *Treatment of preventable dental cavities in preschoolers: A focus on day surgery under general anesthesia.* Ottawa (ON): CIHI; 2013.
3. Centers for Disease Control and Prevention. Ten great public health achievements of the 20th century [Internet]. Atlanta (GA): CDC; 2013 [cited 2017 Feb 27]. Available from: www.cdc.gov/about/history/tengpha.htm
4. US Community Preventive Services Task Force. *Preventing dental caries: Community water fluoridation.* Atlanta (GA): Centers for Disease Control and Prevention; 2013.
5. Peres MA, Peres KG, Barbato PR, Höfelmann DA. Access to fluoridated water and adult dental caries: A natural experiment. *J Dent Res.* 2016 Jul;95(8):868-74.
6. Slade GD, Sanders AE, Do L, Roberts-Thomson K, Spencer AJ. Effects of fluoridated water on dental caries in Australian adults. *J Dent Res.* 2013;92(4):376-82.
7. Neidell M, Herzog K, Glied S. The association between community water fluoridation and adult tooth loss. *Am J Public Health.* 2010 Oct;100(10):1980-85.
8. Pollick HF. Water fluoridation and the environment: Current perspective in the United States. *Int J Occup Environ Health.* 2004;10(3):343-50.
9. McLaren L, Emery JC. Drinking water fluoridation and oral health inequities in Canadian children. *Can J Public Health.* 2012;103:7.
10. McDonagh M, Whiting P, Bradley M, Cooper J, Sutton A, Chestnutt I, et al. *A systematic review of public water fluoridation.* York (UK): NHS Centre for Reviews and Dissemination, University of York; 2000.
11. Ran T, Chattopadhyay SK. Economic evaluation of community water fluoridation: A community guide systematic review. *Am J Prev Med.* 2016;50(6):790–96.
12. Kumar JV, Adekugbe O, Melnik TA. Geographic variation in Medicaid claims for dental procedures in New York State: Role of fluoridation under contemporary conditions. *Public Health Rep.* 2010;125(5):647-54.
13. Public Health Services, City of Hamilton. Assessment of fluoridation of water and other methods of delivering fluoride: BOH08024(a) (City Wide). Hamilton (ON): Public Health Services; 2008.
14. Jackson SL, Vann WF Jr, Kotch JB, Pahel BT, Lee JY. Impact of poor oral health on children's school attendance and performance. *Am J Public Health.* 2011;101(10):1900-1906.
15. Hayes A, Azarpazhooh A, Dempster L, Ravaghi V, Quiñonez C. Time loss due to dental problems and treatment in the Canadian population: Analysis of a nationwide cross-sectional survey. *BMC Oral Health.* 2013;13:17.
16. Health Canada. *Guidelines for Canadian drinking water quality: Guideline technical document—fluoride.* (Catalogue No. H128-1/11-647E-PDF). Ottawa (ON): Water, Air and Climate Change Bureau, Healthy Environments and Consumer Safety Branch, Health Canada; 2010.
17. Children's Dental Health Project. *State standards vary for community water fluoridation: What state laws and regulations require.* Washington (DC): CDHP; 2014.
18. Reeves T. Mandatory state laws on fluoridation (December 2000). Juneau Fluoride Study Commission, Exhibit C, pp. 97-101, July 11, 2006.
19. Federal, Provincial and Territorial Dental Working Group. *Reducing dental disease: Canadian oral health framework 2013-18.* Ottawa (ON): FPTDWG; 2013.
20. McLaren L, Singhal S. Does cessation of community water fluoridation lead to an increase in tooth decay? A systematic review of published studies. *J Epidemiol Community Health.* 2016;70:934–40.

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