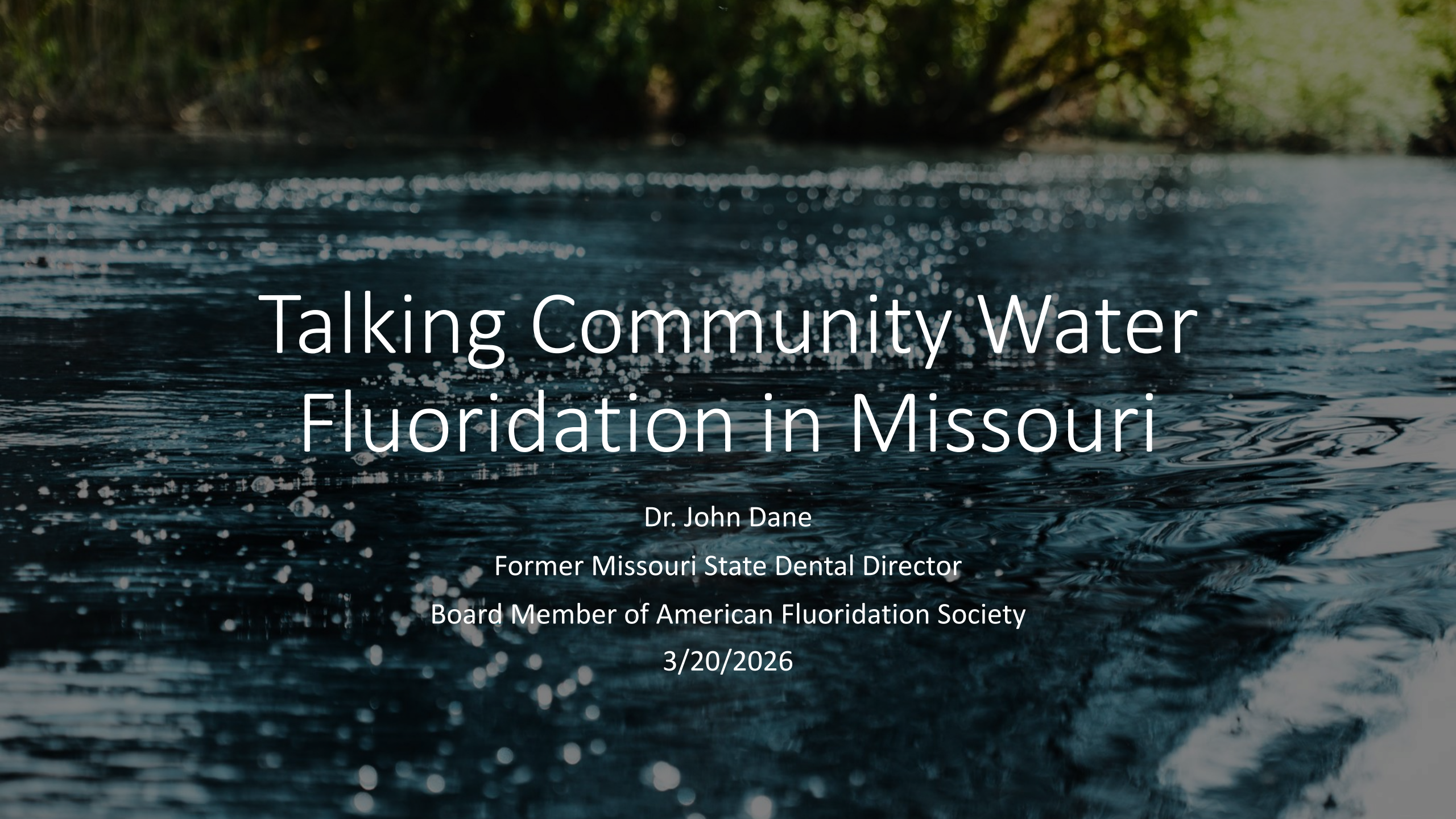




Talking Community Water Fluoridation in Missouri

Dr. John Dane

Former Missouri State Dental Director

Board Member of American Fluoridation Society

3/20/2026

Disclosures

I don't have any financial disclosures to report.

- The American Fluoridation Society's officers and board of directors receive no salary for their work.
- The primary source of AFS's funding is through grants from the Delta Dental Community Care Foundation.



Where is MO Community Water Fluoridation Now

70%+ of the population of Missouri drinks fluoridated water

Currently all control of CWF is local –

local government or water department boards

Almost 100% use FSA to adjust the fluoride in the water

90 day waiting period for any changes

Rollbacks since 2023

6 community rollbacks

1 community (Rolla) decided to keep fluoridation

Basics of Community Water Fluoridation CWF

Fluoride: A naturally occurring mineral



- 13th most abundant mineral in the earth's crust
- **Surface water** (rivers)—typically low concentrations, 0.2 mg/L (ppm) or less
- **Groundwater** (wells)—higher concentrations, 0.1 mg/L to over 5.0 mg/L
- **Ocean** is typically 0.8 to 1.4 mg/L

For more on the history

Timeline for Community Water Fluoridation:



1901

Dentists in the United States and Italy separately observe lower rates of dental decay in populations with distinctively stained teeth. Dr. Frederick S. McKay of Colorado Springs, Colorado, notes that many residents have what locals call "Colorado brown stain" and devotes his career to



Colorado Brown Stain

A fluoride timeline

1874

A German doctor conducts an animal test and finds that fluoride protects tooth enamel.

1901

Dr. Frederick McKay, a dentist, moves to Colorado and learns of a city where many people's teeth have "brown spots" but cavities are rare.

1945

Studies begin to learn whether fluoride cuts the cavity rate. Cavities fall dramatically.

1956

Crest starts selling fluoride toothpaste to the consumer market.

1995

The U.S. Surgeon General calls CWF "the cornerstone" of dental prevention.

1999

CDC names fluoridation one of 10 great public health achievements.

How fluoride works



Systemically – Fluoridated water

- Fluoride helps strengthen the developing permanent teeth *before* they come through the gums.



Topically – Fluoridated water, toothpaste, mouth rinse, and varnish

- Continuous exposure to small amounts of fluoride helps *both* adults and children by remineralizing the tooth enamel.

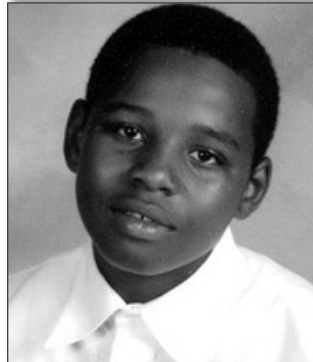
(Source: Achievements in Public Health, 1900-1999: Fluoridation of Drinking Water to Prevent Dental Caries, MMWR, October 22, 1999, 48:41; as this scientific article notes, "Fluoride from topical sources such as fluoridated drinking water is taken up by cariogenic bacteria when they produce acid.")

Why prevent tooth decay

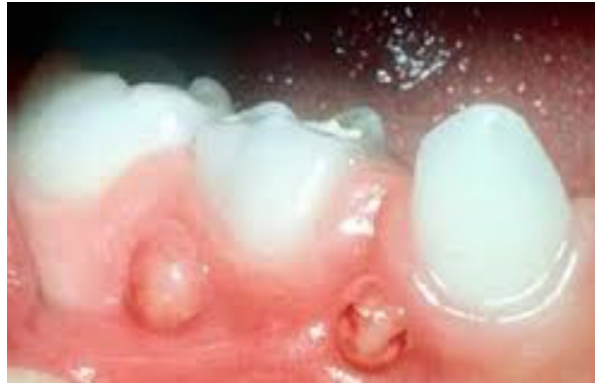
Preventing

Dental cavities are the **most common chronic disease** of adults and children. It's significantly more common than *asthma*, *obesity*, and *diabetes*. **This isn't just a hole in a tooth!**

- Severe pain (toothaches)
- Difficulty in chewing
- Poor weight gain
- Difficulty concentrating
- Predictor of cavities later in life
- Costly to treat
- Deaths



Abscessed teeth - Pus pockets, gum boils



- **Pulp death** from cavities
- **Pus develops**
 - gums
 - jawbone
 - sinus
 - spread via bloodstream
 - invade the fascial spaces of the head and neck
 - All points beyond

Cavities are unevenly distributed



- Cavities affect everyone, regardless of age, SES, race, ethnicity, level of education, or access to dental care.
- Low-income kids are more than **twice** as likely to experience cavities.

(Sources: "Children and Oral Health: Assessing Needs, Coverage, and Access," Kaiser Commission on Medicaid and the Uninsured, June 2012; Florida Population Characteristics, all and children, [accessed](#) June 19, 2025")

How severe decay in children is treated

- A toddler's teeth can begin to suffer cavities (decay) soon after they appear in the mouth. Without fluoridated water and fluoride toothpaste, a child is at greater risk.
- Toddlers and young children with severe decay may not tolerate or cooperate for treatment in a dental office. The only option to safely treat them is under **general anesthesia (GA)** in a hospital.



How severe decay in children is treated

- Although deaths from the use of GA are very rare, they **do** happen. And preschool-age children are the most vulnerable.
- GA-related treatment is also **very expensive**.

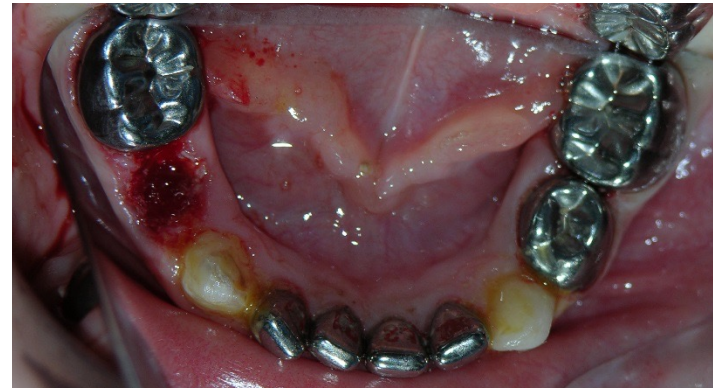
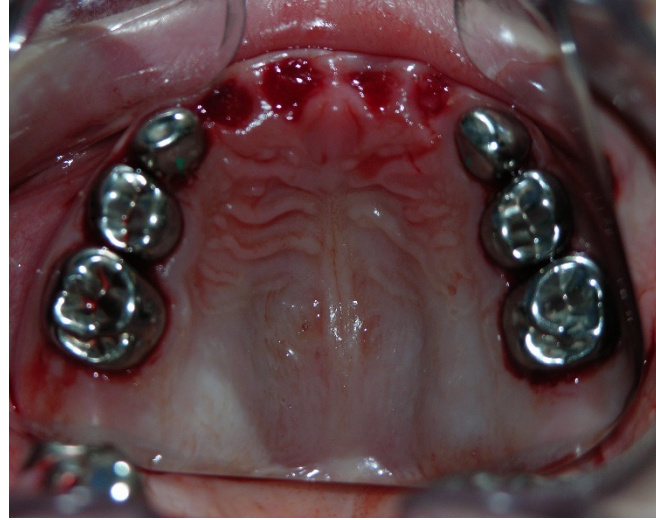


How severe decay in children is treated



- The average cost of hospital treatment with GA ranges from **\$10,000 to \$15,000** *per child*.
- US and international studies show that **water fluoridation helps prevent 2/3rd** of hospital GA dental treatment.

How severe decay in children is treated



(Sources: An alternative marker for the effectiveness of water fluoridation: hospital extraction rates for dental decay, a two-region study, Elmer et al, British Dental Journal 2014; 216: E10; Klivitsky et al., "Hospitalizations for dental infections - Optimally versus non-optimally fluoridated areas in Israel," Journal of the American Dental Association.)

How we know that fluoridation is Effective

A study demonstrates fluoridation's impact

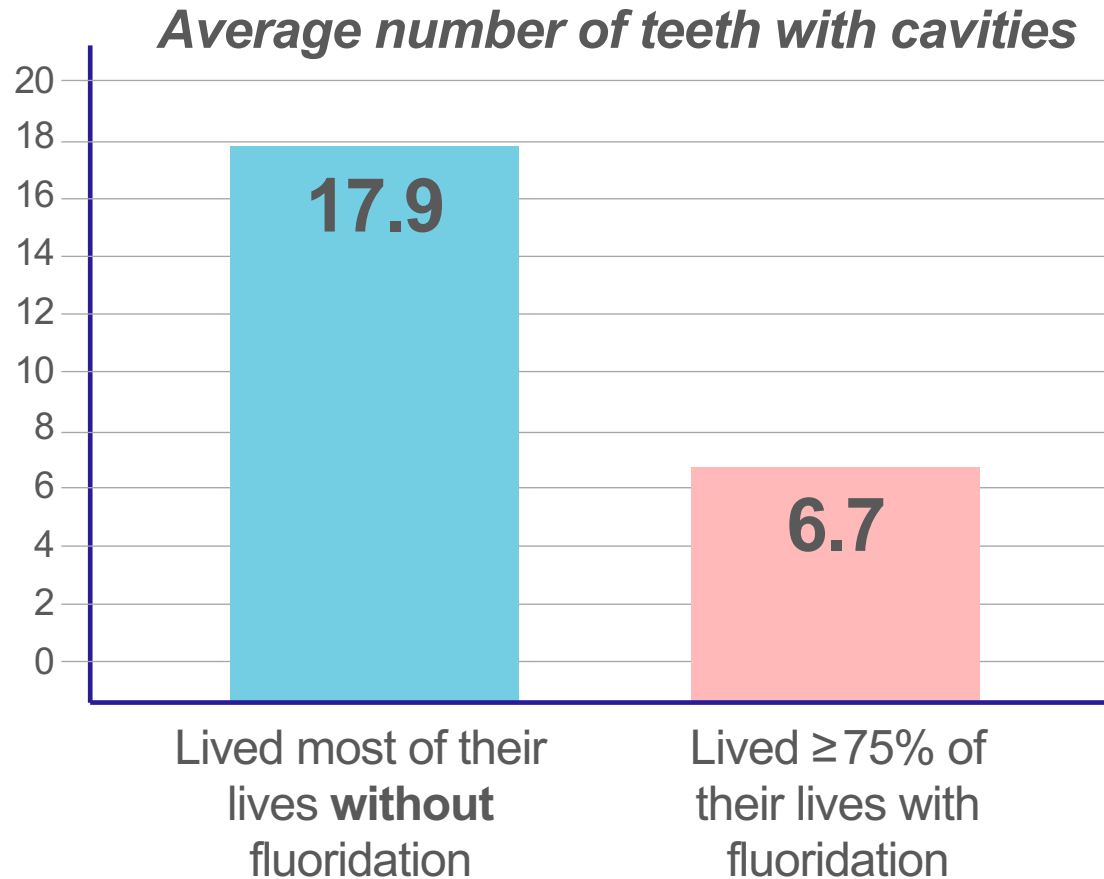


Study of U.S. children (2018)

- Consider a classroom of 30 children in a fluoridated city.
- On average, these children would have **39 fewer tooth surfaces with cavities** in their primary teeth than the same number of students in a non-fluoridated city.

Adults also benefit from fluoridation

A study of adults in Brazil (2016)

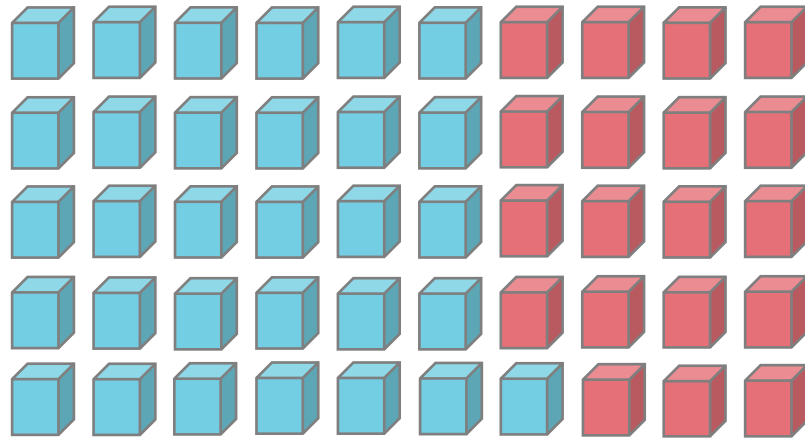


(Source: M.A. Peres, P.R. Barbato, et al. "Access to fluoridated water and adult dental caries: A natural experiment. *Journal of Dental Research*, July 2016, 95:8, pp. 868-874.)

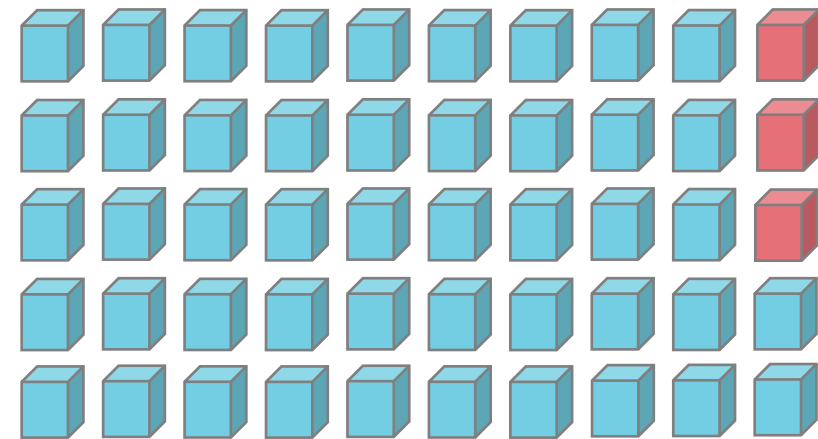
The impact of fluoride in water and toothpaste

Over a 50-year period, a major drop in the share of U.S. adults who had lost all of their teeth (edentulous):

38% of adults (aged 55-64) were edentulous during 1957-1958



Only 6% of adults (aged 55-64) were edentulous during 2009-2012



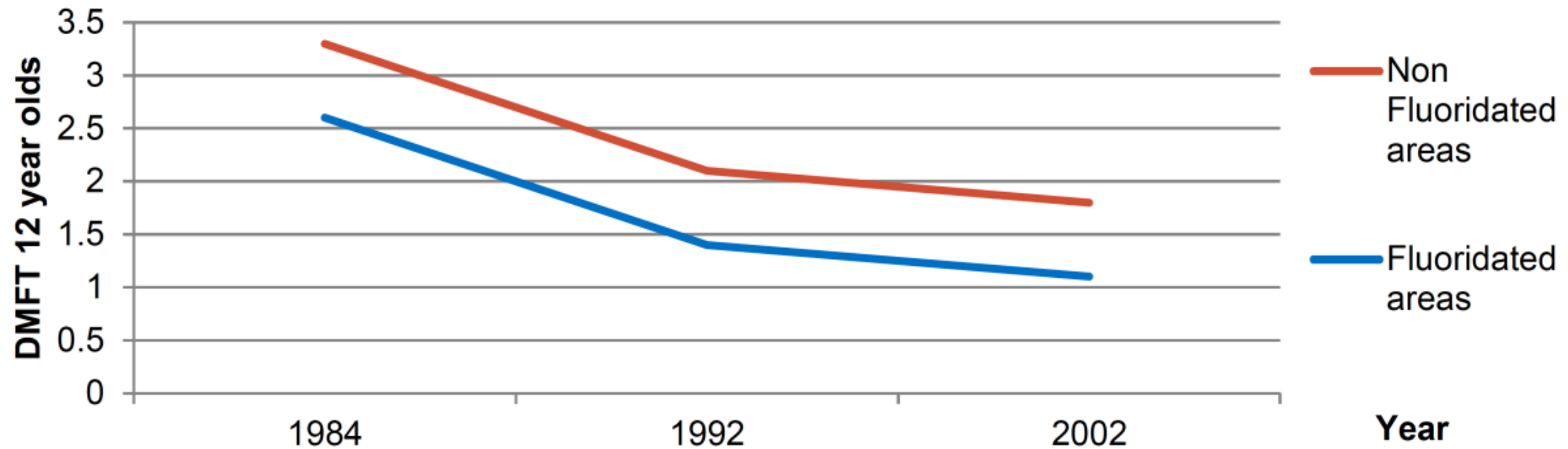
Lost all of their teeth



Retained some or all of their teeth

A clear benefit from fluoridation

A chart like this compares apples to apples. Children in Ireland who live in fluoridated areas have lower rates of cavities.



Both forms of fluoride are needed

“If I’m using fluoride toothpaste, do I still need to drink fluoridated water?”



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Both drinking water and toothpaste with fluoride provide important and complementary benefits. Fluoridated water keeps a low level of fluoride in saliva and dental plaque all day. The much higher concentration of fluoride in toothpaste offers additional benefit. Fluoride slows the activity of bacteria that cause decay and combines with enamel on the tooth surface to make it stronger and better able to resist decay. Together, the two sources offer more protection than using either one alone.

Economic effects of CWF

Fluoridation saves money by reducing dental treatment

Saves at least \$22 of dental treatment for every \$1 spent on CWF

Example:

If CWF is discontinued Missouri Medicaid will lose \$4,905,204 per year on additional dental restorations.

Estimated \$897 million over 5 years

Economics of ceasing CWF

Cost Research

1. Juneau, Alaska

Alaska: Two cities were once fluoridated

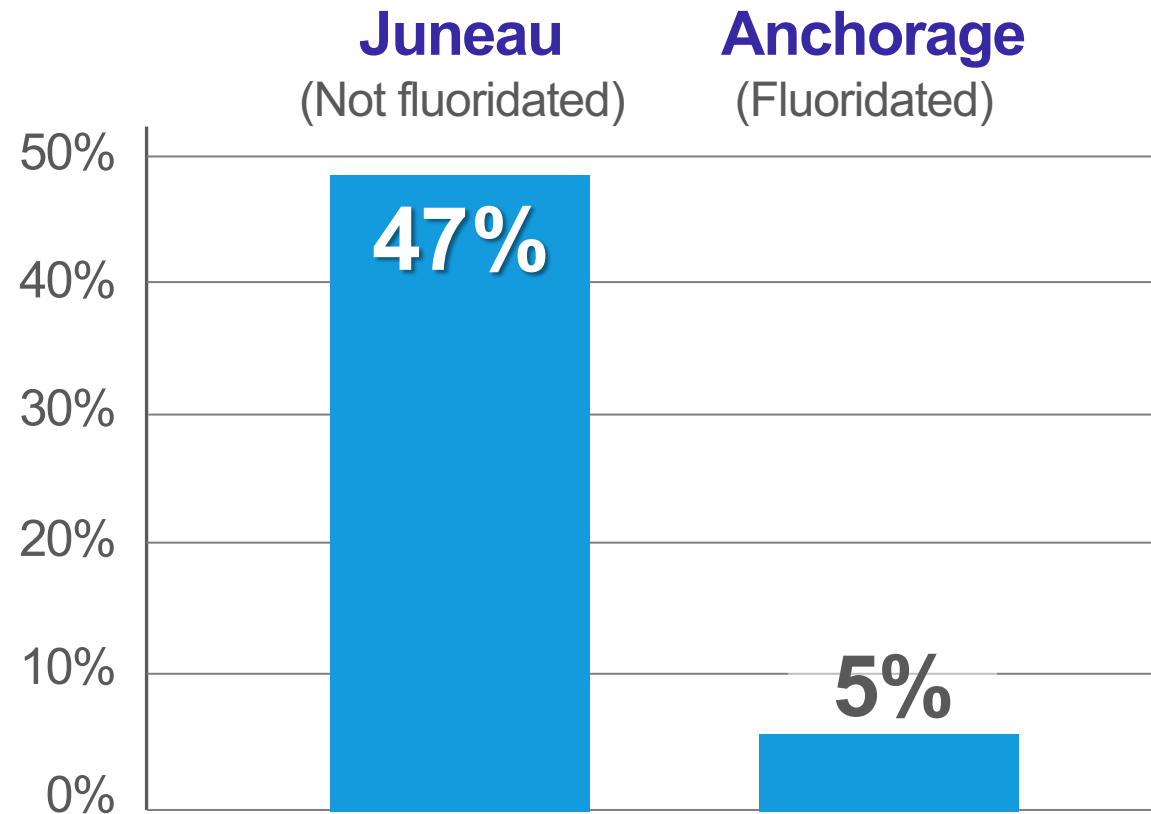
- When both cities were fluoridated, **Juneau** (\$344) and **Anchorage** (\$369) had similar average costs for treating cavities in **low-income children**.
- In 2007, Juneau officials ended water fluoridation. But the city of Anchorage continued fluoridation and still does so.
- Researchers studied what effect this might have had on children's dental health.



(Source: J. Meyer et al., "The Impact of Water Fluoridation on Medicaid-Eligible Children and Adolescents in Alaska," Journal of Primary Prevention, 2022; the costs provided on this slide are for 2003, a year when both cities engaged in water fluoridation.)

Alaska: Dental costs soared in Juneau

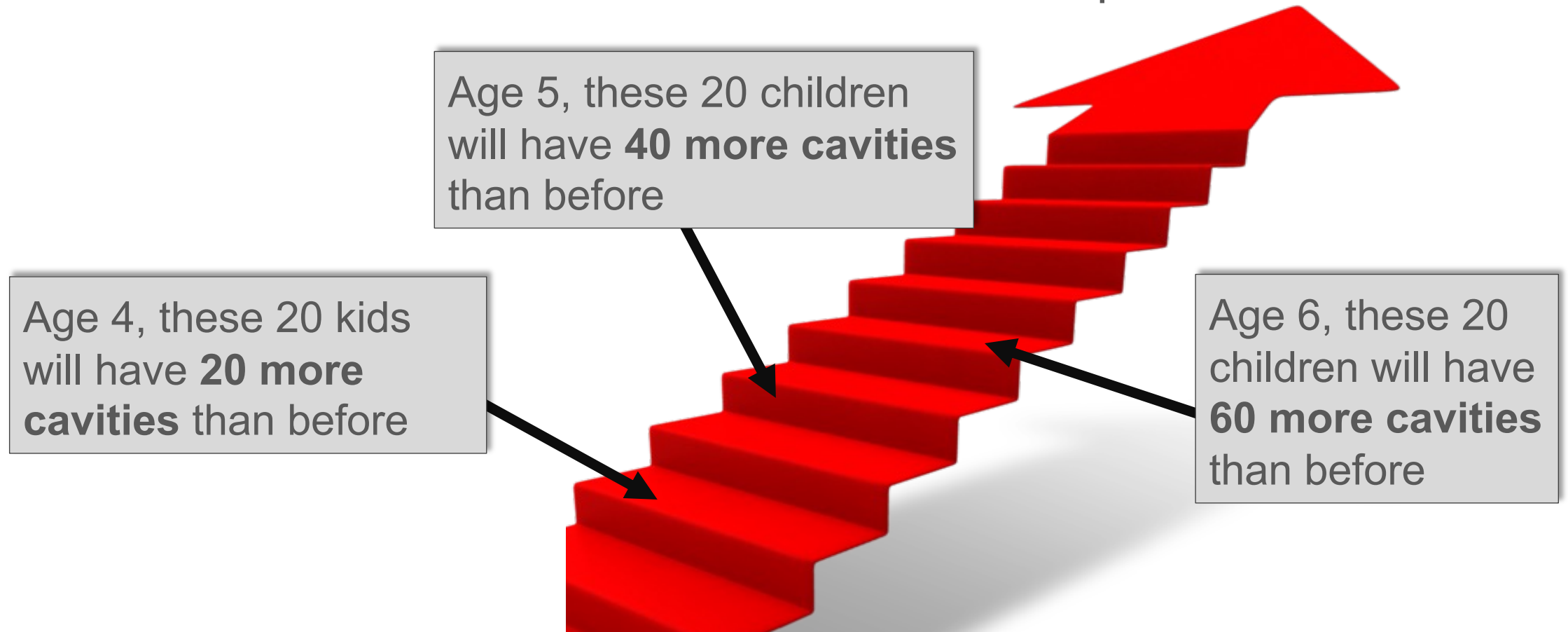
9 years after Juneau ended fluoridation, look at changes in the **average per-child cost for cavity treatments**:



(Source: J. Meyer et al., "The Impact of Water Fluoridation on Medicaid-Eligible Children and Adolescents in Alaska," *Journal of Primary Prevention*, 2022; for this bar graph, the average Medicaid costs were rounded up or down to the nearest whole number.)

What the Alaska study shows

Imagine **20 children** who are in the same Head Start classroom when water fluoridation stops:

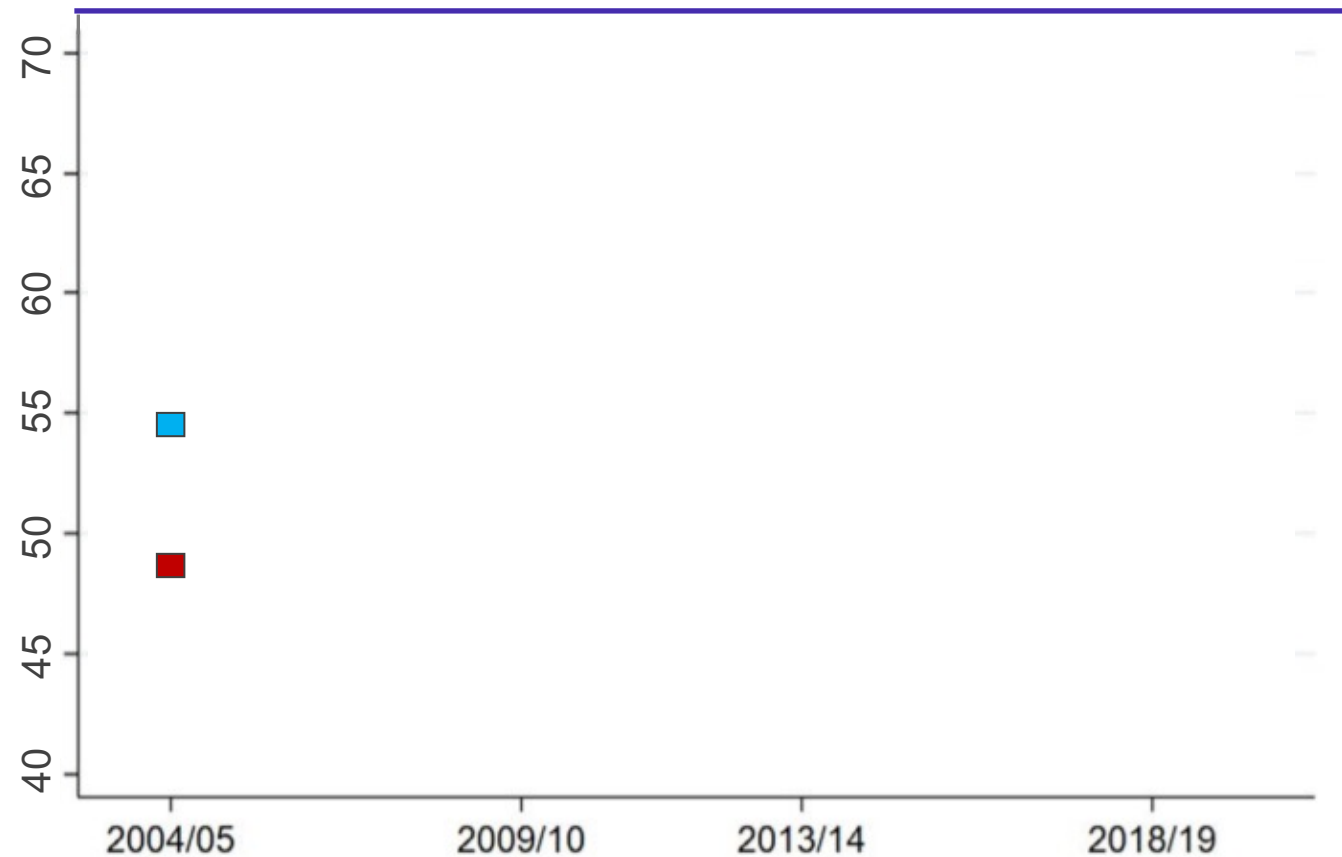
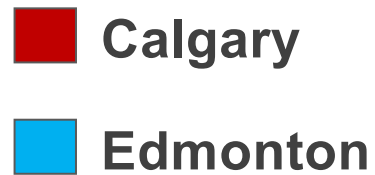


(Source: J. Meyer et al., "Consequences of community water fluoridation cessation for Medicaid-eligible children and adolescents in Juneau, Alaska," BMC Oral Health, 2018, 18:215.)

2. Calgary

Canada: Comparing trends in two cities

The % of 2nd grade children in each city who had experienced at least one cavity

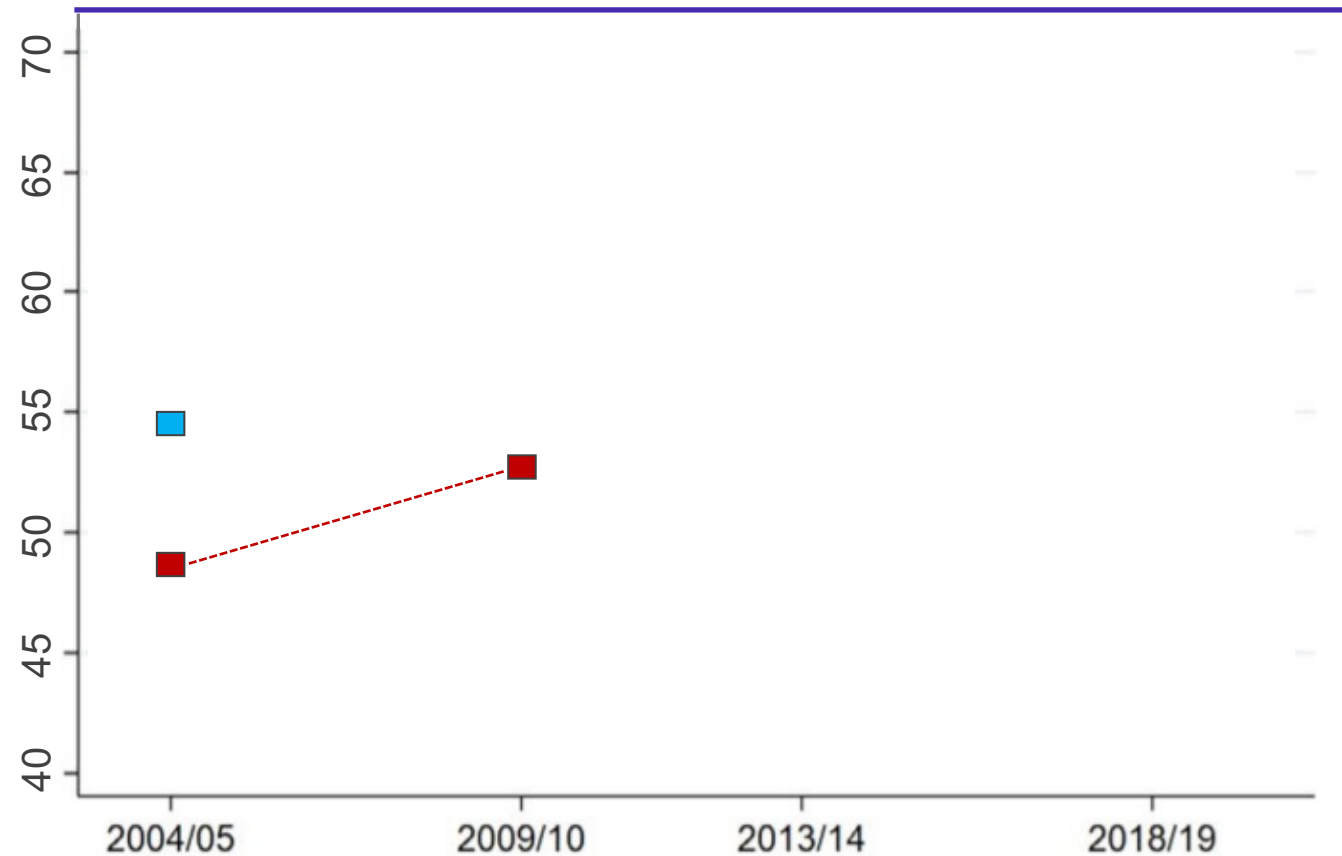


(Sources: McLaren, L., et al., "Measuring the short-term impact of fluoridation cessation on dental caries in Grade 2 children using tooth surface indices", 17 February 2016 <https://doi.org/10.1111/cdoe.12215> ; McLaren et al., "Fluoridation cessation and oral health equity: a 7-year post-cessation study of Grade 2 schoolchildren in Alberta, Canada", Can J Public Health 113, 955–968 (2022), <https://doi.org/10.17269/s41997-022-00654-4>)

Canada: Comparing trends in two cities

The % of 2nd grade children in each city who had experienced at least one cavity

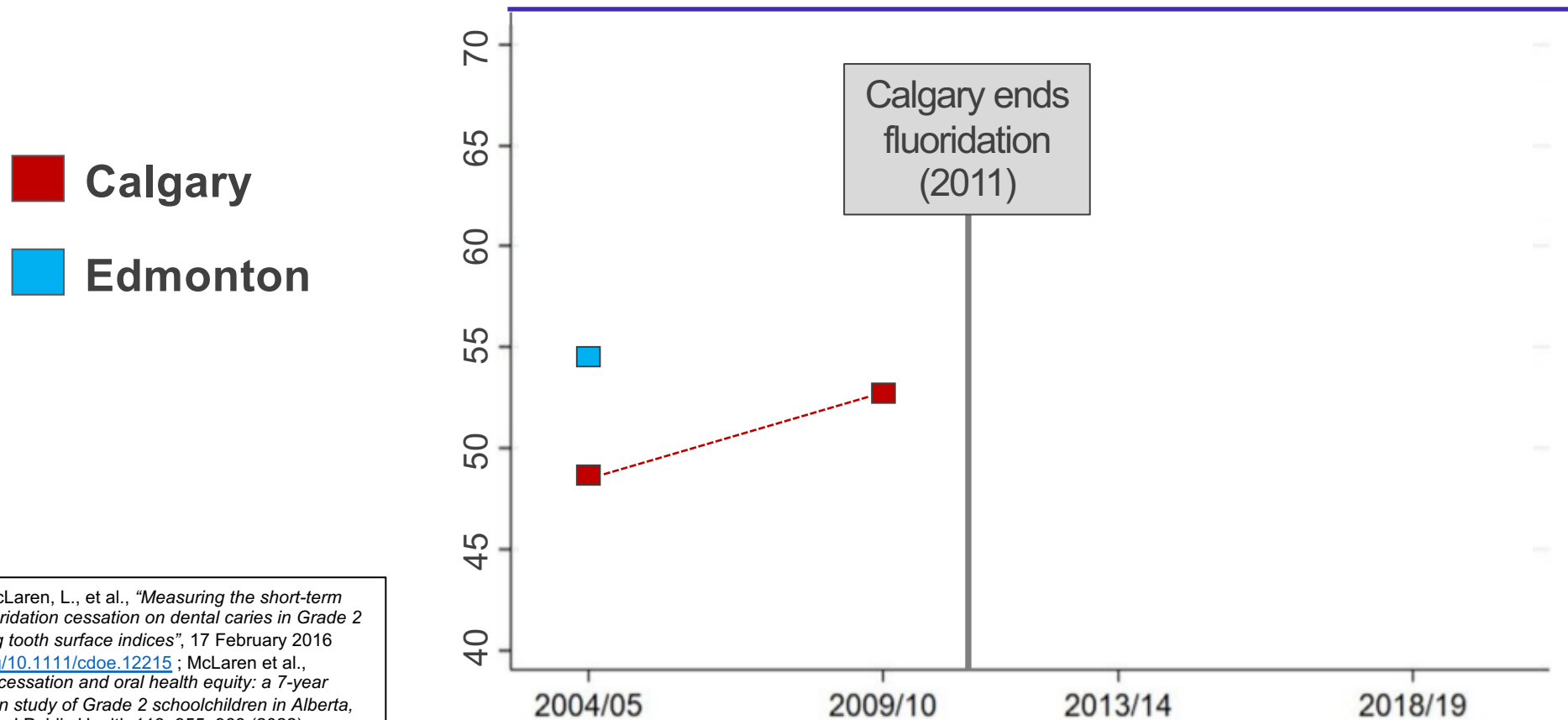
■ Calgary
■ Edmonton



(Sources: McLaren, L., et al., "Measuring the short-term impact of fluoridation cessation on dental caries in Grade 2 children using tooth surface indices", 17 February 2016 <https://doi.org/10.1111/cdoe.12215> ; McLaren et al., "Fluoridation cessation and oral health equity: a 7-year post-cessation study of Grade 2 schoolchildren in Alberta, Canada", Can J Public Health 113, 955–968 (2022), <https://doi.org/10.17269/s41997-022-00654-4>)

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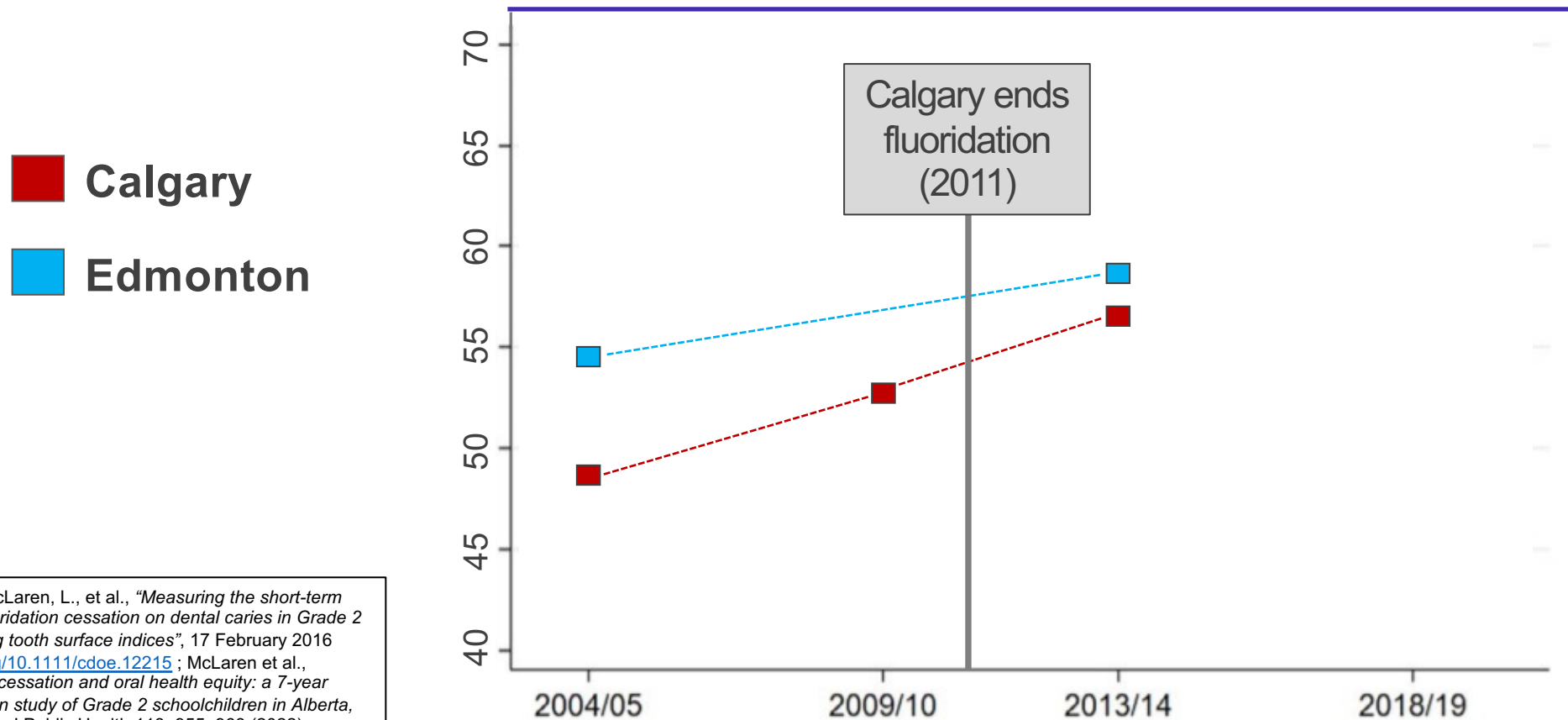
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(Sources: McLaren, L., et al., "Measuring the short-term impact of fluoridation cessation on dental caries in Grade 2 children using tooth surface indices", 17 February 2016 <https://doi.org/10.1111/cdoe.12215> ; McLaren et al., "Fluoridation cessation and oral health equity: a 7-year post-cessation study of Grade 2 schoolchildren in Alberta, Canada", Can J Public Health 113, 955–968 (2022), <https://doi.org/10.17269/s41997-022-00654-4>)

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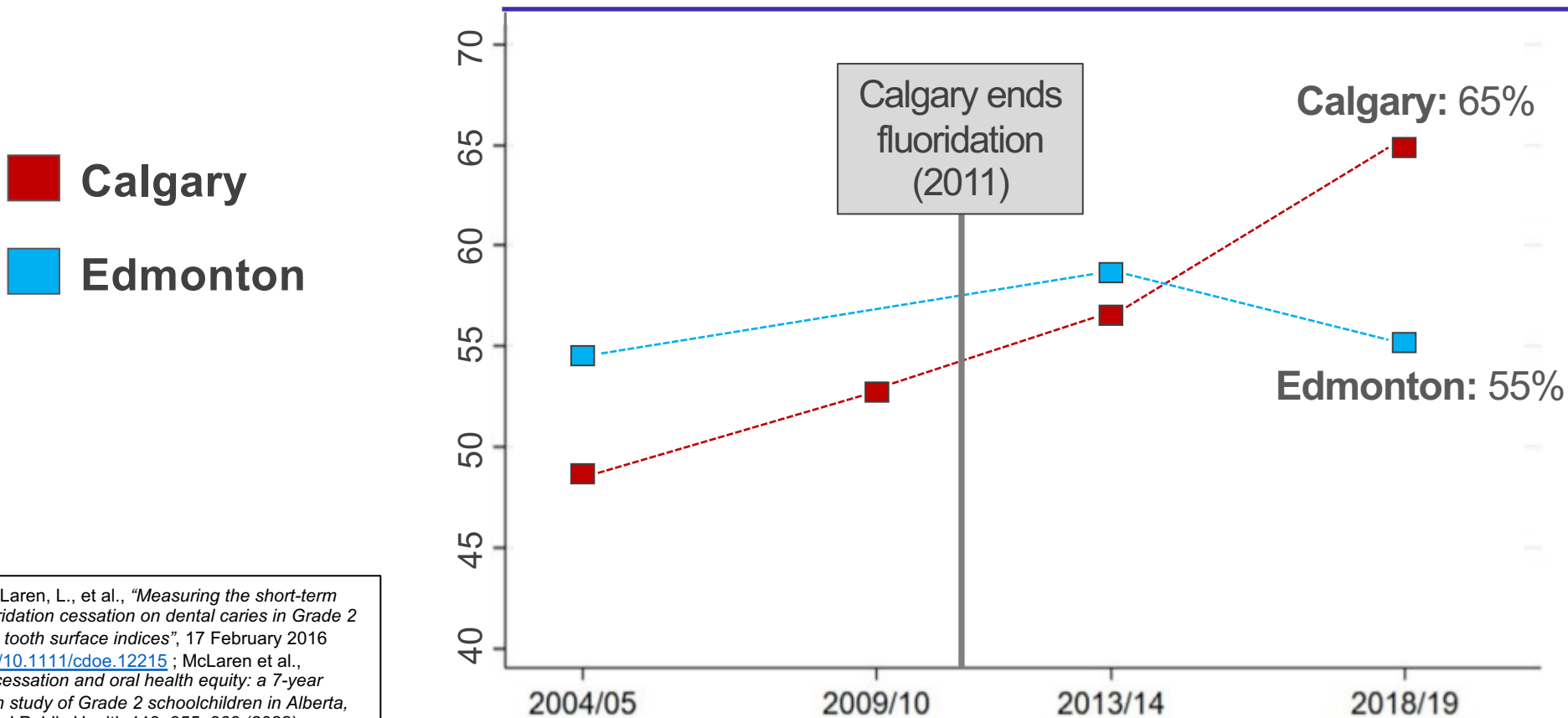
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(Sources: McLaren, L., et al., "Measuring the short-term impact of fluoridation cessation on dental caries in Grade 2 children using tooth surface indices", 17 February 2016 <https://doi.org/10.1111/cdoe.12215> ; McLaren et al., "Fluoridation cessation and oral health equity: a 7-year post-cessation study of Grade 2 schoolchildren in Alberta, Canada", Can J Public Health 113, 955–968 (2022), <https://doi.org/10.17269/s41997-022-00654-4>)

Canada: Comparing trends in two cities

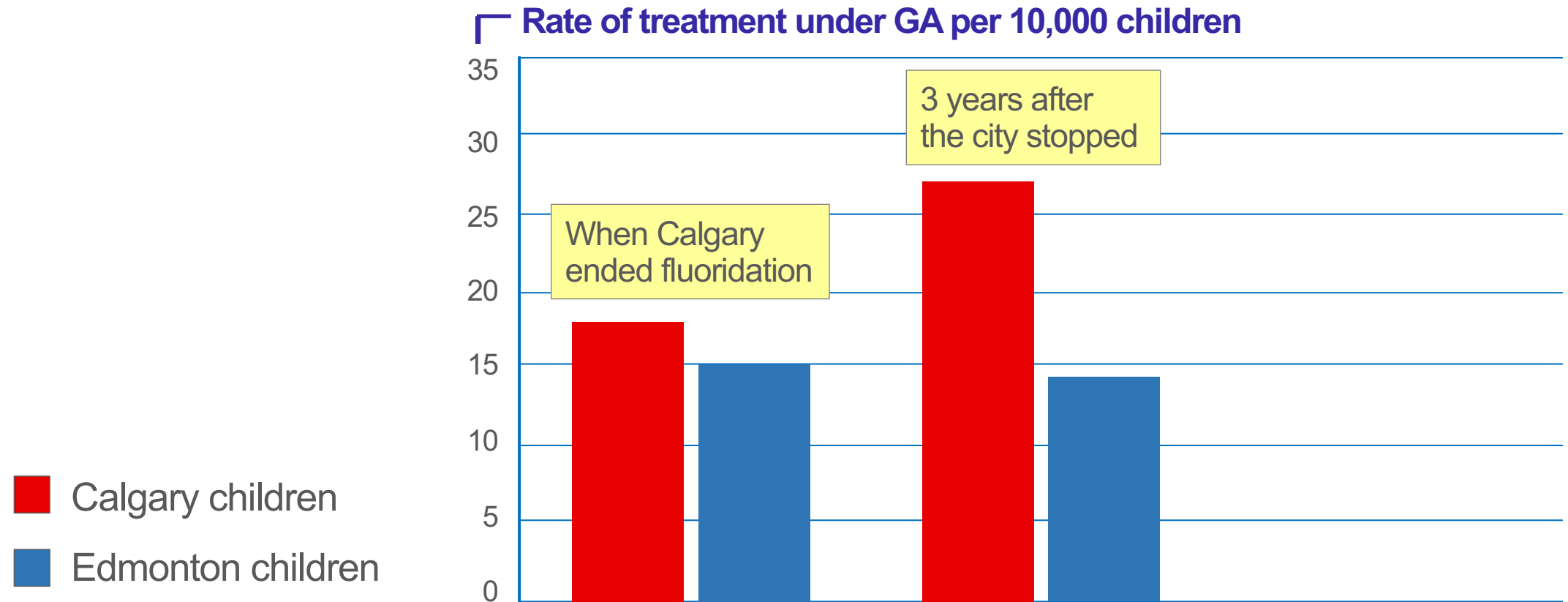
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GA-related treatment rose steadily after cessation

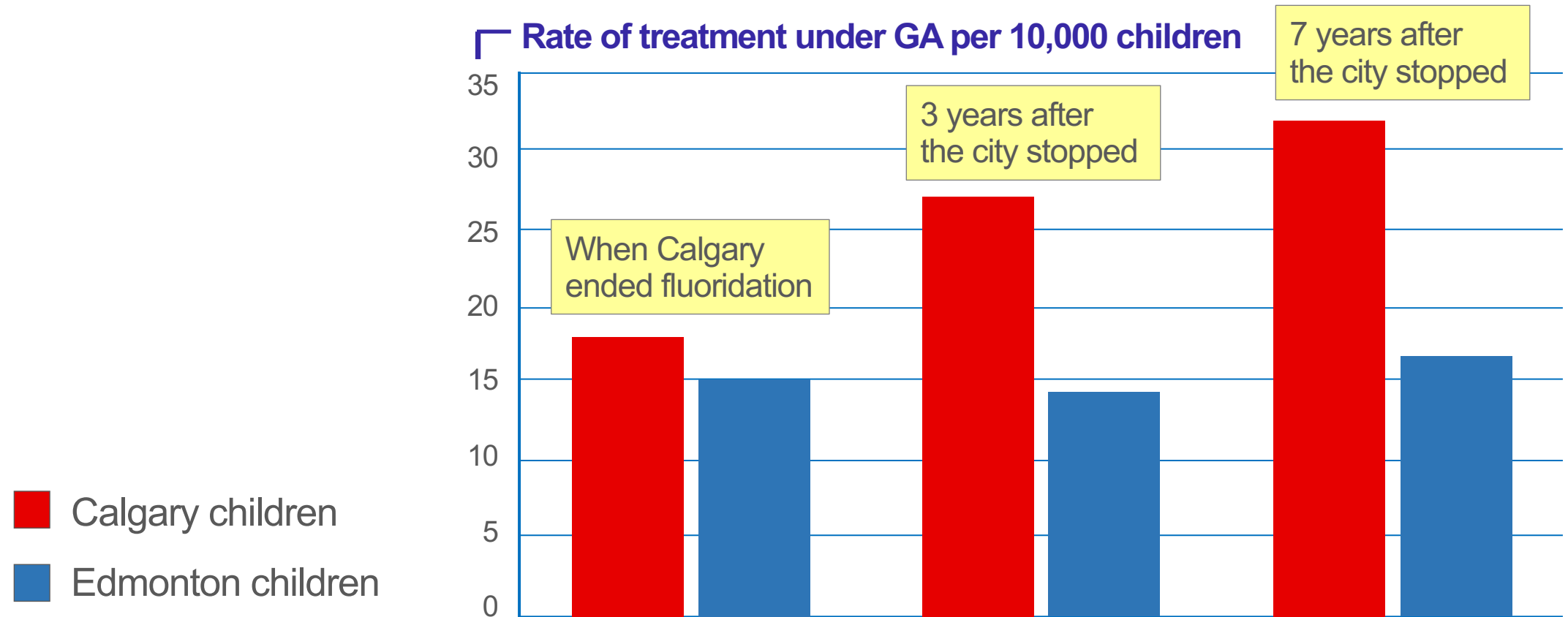
- The Canadian city of **Calgary** ceased water fluoridation in 2011. Afterward, its rate of dental treatment with GA steadily rose.



(Source: Yazdanbakhsh E, et al. Community water fluoride cessation and rate of caries-related pediatric dental treatments under general anesthesia in Alberta, Canada. Canadian Journal of Public Health, 2024 / doi: 10.17269/s41997-024-00858-w.)

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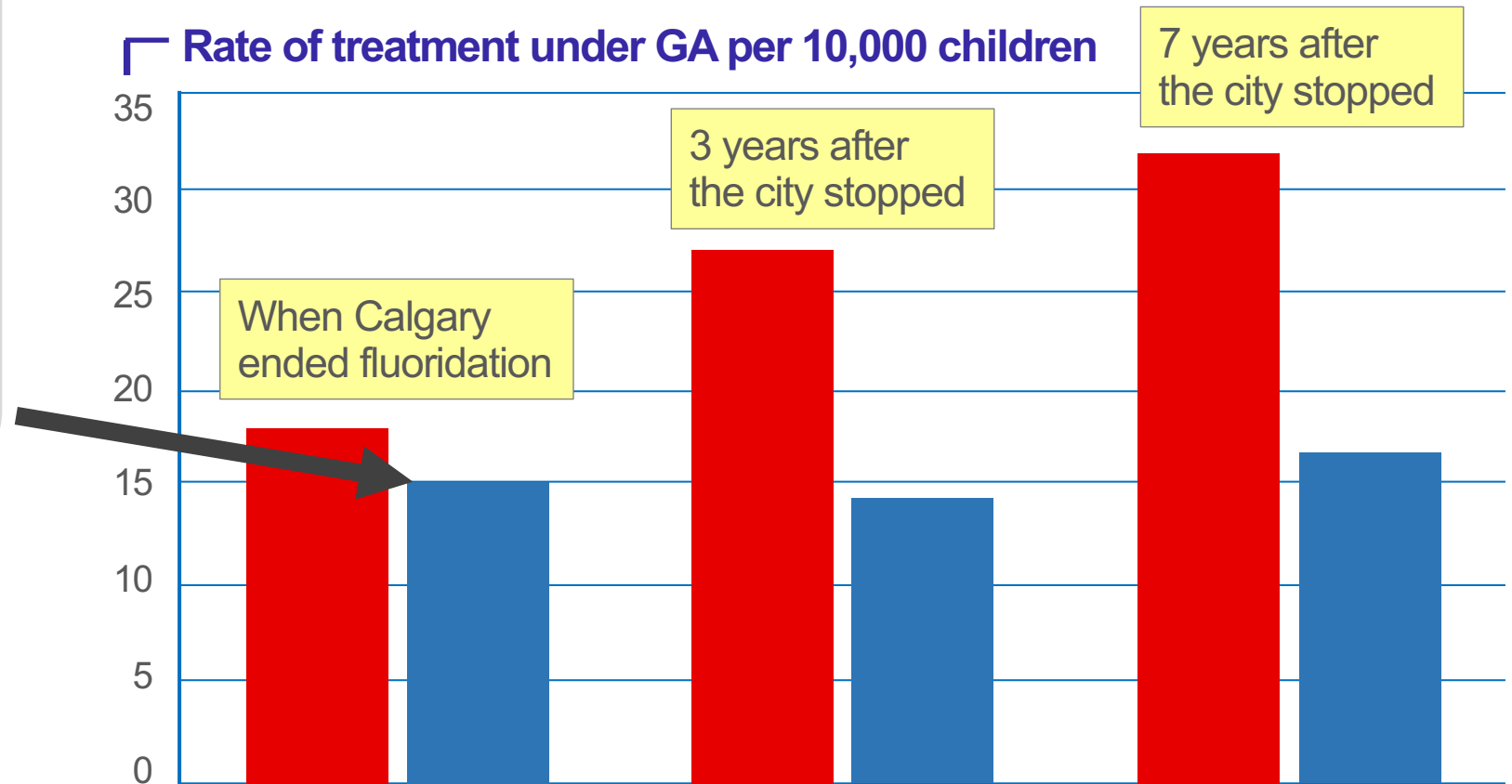
GA-related treatment rose steadily after cessation

- The Canadian city of **Calgary** ceased water fluoridation in 2011. Afterward, its rate of dental treatment with GA steadily rose.

The GA treatment rate in **Calgary** jumped by 78%.

Edmonton's rate rose by only 12%

■ Calgary children
■ Edmonton children



(Source: Yazdanbakhsh E, et al. Community water fluoride cessation and rate of caries-related pediatric dental treatments under general anesthesia in Alberta, Canada. Canadian Journal of Public Health, 2024 / doi: 10.17269/s41997-024-00858-w.)

3. Windsor

The power of surveillance!!!

In Canada, the city of **Windsor** voted to resume fluoridation after their public health unit released data showing a **51% increase** in cavities and emergency dental needs.



(Source: "Oral Health 2018 Report," Executive Summary of a report by the Windsor-Essex County Health Unit, 2018.)

How we know that fluoridated water is safe

“The science is clear and settled” ??



NO!

- Research is continuous and ongoing
- Over **7,000** studies have been published on the NIH National Library of Medicine, PubMed

(Source: National Institutes of Health, PubMed, search term [water fluoridation](#), accessed 8-28-2025)

7,034 results Page 1 of 704

☐ **Water fluoridation for the prevention of dental caries.**

1 Iheozor-Ejiofor Z, Worthington HV, Walsh T, O'Malley L, Clarkson JE, Macey R, Alam R, Tugwell P, Welch V, Glenny AM.

Cite Cochrane Database Syst Rev. 2015 Jun 18;2015(6):CD010856. doi: 10.1002/14651858.CD010856.pub2. Update in: Cochrane Database Syst Rev. 2024 Oct 4;10:CD010856. doi: 10.1002/14651858.CD010856.pub3. PMID: 26092033 Free PMC article.

Given the continued interest in this topic from health professionals, policy makers and the public, it is important to update and maintain a systematic review that reflects contemporary evidence. OBJECTIVES: To evaluate the effects of **water fluoridation** (artificial ...

☐ **Systemic Effects (Risks) of Water Fluoridation.**

2 Cury JA, Ricomini-Filho AP, Berti FLP, Tabchoury CP.

Cite Braz Dent J. 2019 Oct 7;30(5):421-428. doi: 10.1590/0103-6440201903124. eCollection 2019. PMID: 31596325 Free article.

However, the use of fluoride in **water** to control caries has created a controversy due to data associating **water fluoridation** as the cause of some systemic diseases. Therefore, the aim of this descriptive review was to discuss the systemic effects (risks) of ...

☐ **Water fluoridation.**

3 Parnell C, Whelton H, O'Mullane D.

Cite Eur Arch Paediatr Dent. 2009 Sep;10(3):141-8. doi: 10.1007/BF03262675. PMID: 19772843 Review.

AIM: This was to present a summary of the evidence from systematic reviews of the effectiveness and safety of **water fluoridation**. METHODS: A search for relevant systematic reviews was conducted using the terms **Fluoridation** [Mesh] OR "**water fluoridat** ...

☐ **Editorial - Community Water fluoridation.**

4 Vasantavada PV, Hearnshaw S, Do L, Vernazza CR, Zohoori F.

Cite Community Dent Health. 2021 Aug 31;38(3):158-160. doi: 10.1922/CDH_Sept21editorial03. PMID: 34473431

Since the discovery of the caries preventive benefits of fluoride, it has been the cornerstone of preventive programs for children and adults. **Water fluoridation**, the controlled addition of a precise amount of fluoride to community **water** systems to the level ...

Safety is not a yes-or-no question

Almost anything
can be Poison
when consumed
at extraordinarily
high levels

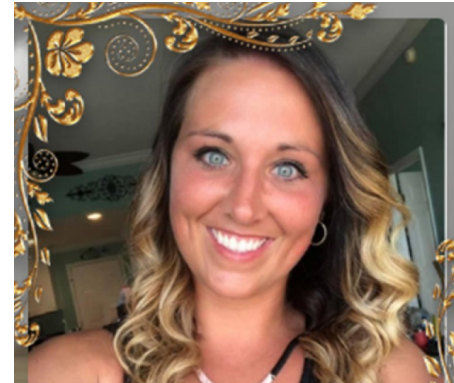
(Source: Alex Fisher, "Indiana mom dies of water toxicity after drinking too much water on vacation: family," NBC-TV, WMAQ-Chicago, August 8, 2023.)



Indiana mom dies of water toxicity after drinking too much water on vacation: family

A 35-year-old Indiana mother died of water toxicity after drinking too much water during a recent vacation, her family said.

The family is now looking to raise awareness and prevent what happened to [Ashley Summers](#) from happening to others. It all happened over the Fourth of July holiday weekend.



"She went boating all weekend and got severely dehydrated," her brother, Devon Miller, posted on [Facebook](#) on July 7. "On Tuesday she drank a lot of water (at one point 4 bottles in less than 30 min-

Scientific panels have confirmed fluoride's safety

Intensive reviews have concluded that the levels of fluoride commonly found in Western countries are safe:

- ✓ Health Research Board (Ireland, [2022](#))
- ✓ Public Health England ([2018](#) / [2022](#))
- ✓ Food Safety Authority of Ireland ([2018](#))
- ✓ National Health & Medical Research Council of Australia ([2017](#))
- ✓ U.S. Public Health Service ([2015](#))
- ✓ Royal Society of New Zealand ([2014](#), [2021](#), [2024](#))
- ✓ CADTH (Canadian Agency for Drugs, Technology, and Health), ([2019](#), [2020](#))



Public Health
England



(Sources: Public Health England produced fluoridation monitoring reports in both of the years indicated; Food Safety Authority of Ireland, report issued 2018; National Health and Medical Research Council of Australia, policy statement issued 2017; U.S. Public Health Service report was published by Public Health Reports in 2015; Royal Society of New Zealand, conclusions released 2014, 2021, 2024; Health Research Board. Impact of community water fluoridation on systemic health excluding oral health: An evidence review, November 2022; Canadian Agency for Drugs, Technology and Health, 2019, 2020)

World Health Organization **recommends** fluoridation

- Adjusting the level of fluoride in drinking water is a *safe, cost-effective public health measure* for the prevention of caries.
- This includes adding fluoride in areas where the natural fluoride levels of drinking water are too low as well as eliminating fluoride from drinking water in areas where natural fluoride concentrations are too high.
- As a population-based health strategy, water fluoridation does not discriminate by social class and provides universal health benefit to all groups within a community, *thereby reducing inequalities*.
- The estimated reduction rates for caries range between 25% and around 60% depending on the study, location and population.

(Source: World Health Organization, Launch of the Global Oral Health Status [Report](#), November 18, 2022; Section 3.3.2, Water Fluoridation)

A long list of false claims by fluoridation opponents

- No toxicological testing has been conducted on fluoride
- The ADA says it shouldn't be used in infant formula
- It reduces IQ
- It causes ADHD
- It causes Alzheimer's
- It harms the kidney, the immune system and other systems
- It's a conspiracy — the phosphate fertilizer industry is disposing of its "hazardous waste"
- Cavities have fallen in all nations, so fluoridation must not matter
- Some people are allergic to fluoridated water
- It causes thyroid problems
- The only way fluoride works is by topical application
- This is "forced medication"
- The Cochrane Group says there's no evidence behind fluoridation
- Water systems should use a pharmaceutical grade of fluoride

What about the thyroid gland?

This 2017 Canadian study showed **no link** between fluoridated water and thyroid problems.

“There was no evidence of a relationship between fluoride exposure (from urine and tap water) and the diagnosis of a thyroid condition.”

What about the thyroid gland?



Janet Silverstein, MD

Dr. Janet Silverstein currently serves as Program Director for the Pediatric Endocrine Fellowship at Shands at UF and Division Chief of Pediatric Endocrinology at UF.

August 27, 2013

To Whom It May Concern:

As a practicing endocrinologist, I was appalled at the claims that fluoridated drinking water causes clinically significant harm to the endocrine system.

Clinically, in more than 30 years of seeing patients, I have never seen any fractures or thyroid problems associated with fluoridated water. Early puberty is more associated with obesity than anything else, though there are many endocrine disruptors that have estrogenic effect. Fluoride has not been implicated, though lavender, tea tree oil and HCG, substances found commonly in hair products, have been.

What about bone fractures?



- This issue was studied in Sweden, analyzing a large sample of 473,000+ people.
- After analyzing the data, the researchers “found **no association** between chronic fluoride exposure and the occurrence of hip fracture.”

(Source: Näsman P, Ekstrand J, Granath F, Ekbom A, Fored CM. Estimated drinking water fluoride exposure and risk of hip fracture: a cohort study. *Journal of Dental Research*, 2013, 92:11.)

What about allergies?

- Fluoride is already a part of your body!
- In the 1970s, the American Academy of Allergy, Asthma & Immunology was asked to investigate whether fluoride added to tap water could cause allergic reactions.
- After reviewing clinical reports of allergy, the Academy voted unanimously that there is “**no evidence of allergy** or intolerance to fluorides” as used in fluoridation.
- In 1996, a study by a British researcher did not find “any confirmed reports of allergic reactions” due to fluoridation.

(Sources: American Academy of Allergy, A Statement on the Question of Allergy to Fluoride as Used in the Fluoridation of Community Water Supplies, Feb. 18, 1971; Challacombe SJ. Does fluoridation harm immune function? Community Dental Health, 1996, 13 Suppl 2:69-71.)

What about claims that fluoride lowers IQs?

Analyses from several nations show no IQ link

Research in various countries have shown **no association** between IQ scores and fluoride at levels used for water fluoridation:

- Australia
- Denmark
- New Zealand
- Spain
- Sweden



(Sources: Do LG, et al., Early Childhood Exposures to Fluorides and Child Behavioral Development and Executive Function: A Population-Based Longitudinal Study, Journal of Dental Research, 2023; Kyhl HB, et al., The Odense Child Cohort: aims, design, and cohort profile. Paediatric and Perinatal Epidemiology, 2015; Broadbent JM, et al., Community Water Fluoridation and Intelligence: Prospective Study in New Zealand. American Journal of Public Health, 2015; Ibarluzea J, et al., Prenatal exposure to fluoride and neuropsychological development in early childhood: 1-to 4 years old children, Environmental Research, 2022; Aggeborn, L. & Ohman, M, The Effects of Fluoride in Drinking Water, Journal of Political Economy, 2021.)

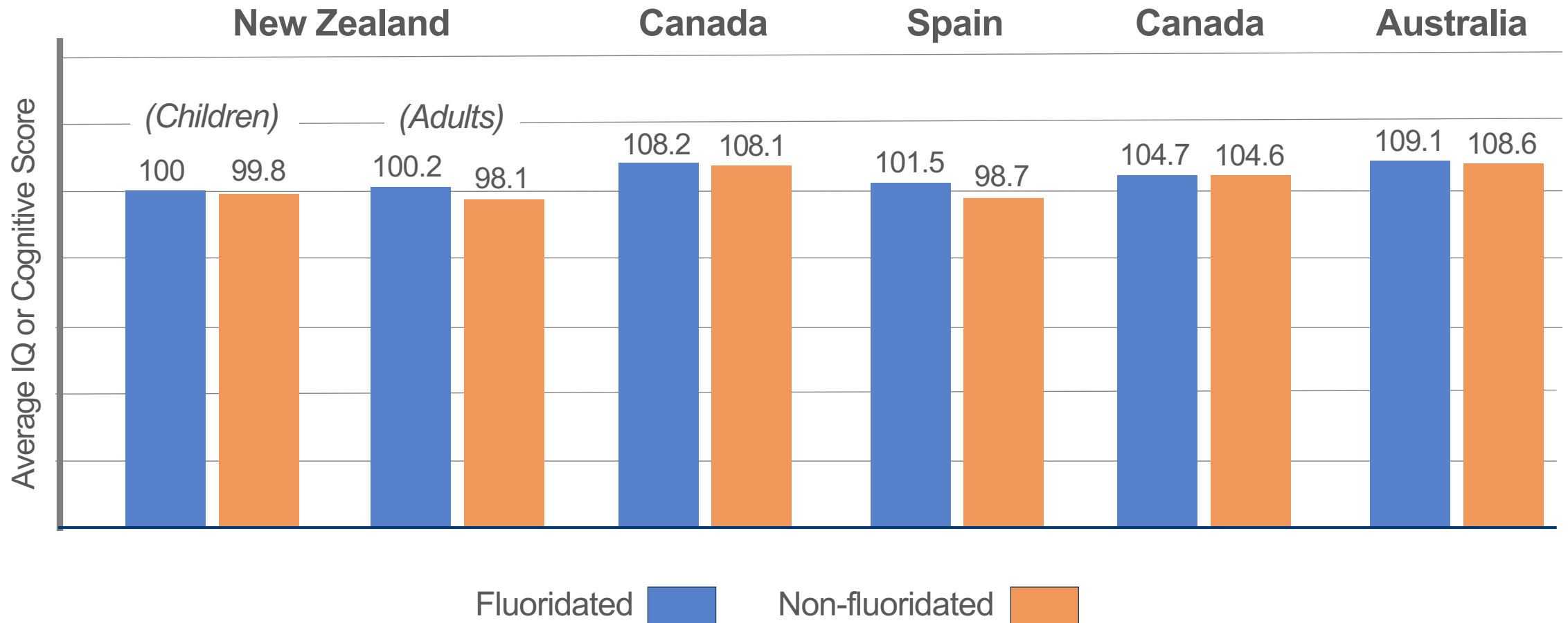
High-quality studies have shown no fluoride-IQ link

The only published study that tested IQs several times over a 30-year period.

Country/Study	A link between fluoride and IQs?	
Australia studies	Yes ☐	No ☒
Denmark study	Yes ☐	No ☒
New Zealand study	Yes ☐	No ☒
Spain study	Yes ☐	No ☒
Sweden study	Yes ☐	No ☒

(Sources: Do, L.G., et al. Early Childhood Exposures to Fluorides and Child Behavioral Development and Executive Function: A Population-Based Longitudinal Study, Journal of Dental Research, 2022; Grandjean P, et al., Dose dependence of prenatal fluoride exposure associations with cognitive performance at school age in three prospective studies, European Journal of Public Health, 2024; Broadbent, J.M., Community Water Fluoridation and Intelligence: Prospective Study in New Zealand, American Journal of Public Health, 2015; Ibarluzea, J., et al. Prenatal exposure to fluoride and neuropsychological development in early childhood: 1-to 4 years old children, Environmental Research, 2021; Aggeborn, J., et al., The Effects of Fluoride in Drinking Water, Journal of Political Economy, 2021.)

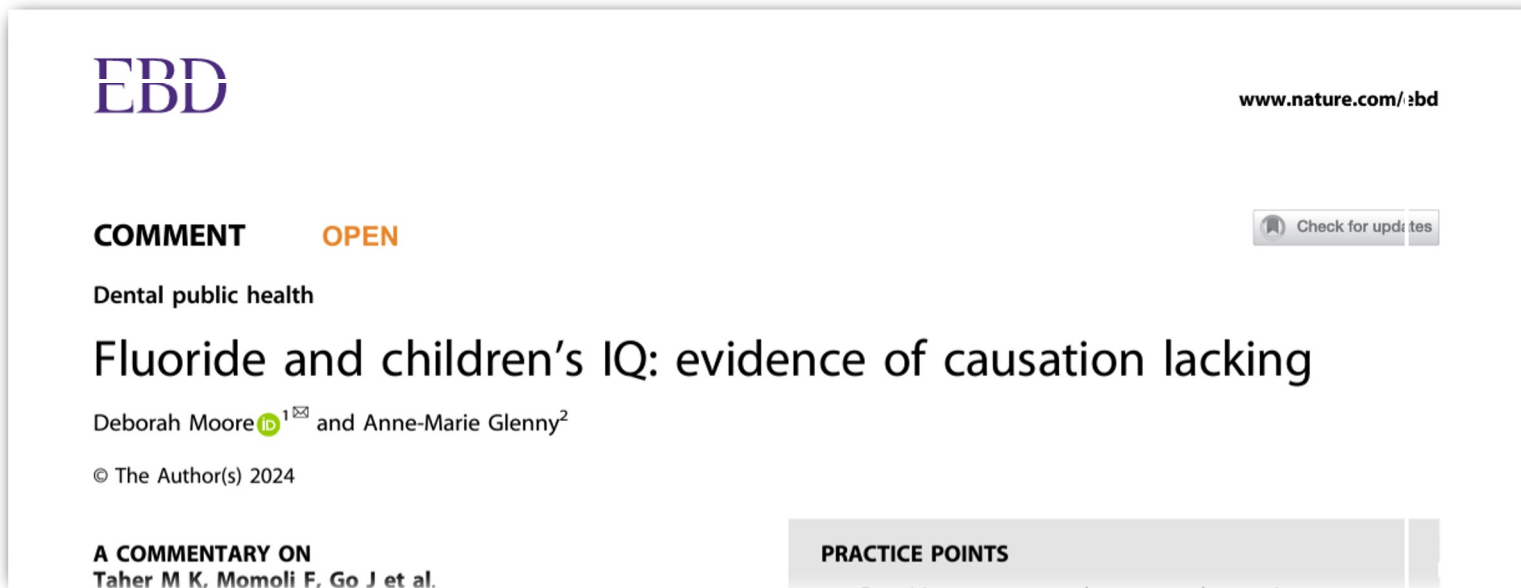
These studies show nearly identical IQ scores



(Sources: Broadbent et al., American Journal of Public Health, 2015; Green et al., JAMA Pediatrics, 2019; Ibarluzea et al., Environmental Research, 2022; Dewey et al., Science of the Total Environment, 2023; Do, et al., Journal of Dental Research, 2023; these are unadjusted scores for full-scale IQs, which are rounded to the nearest decimal point; in some studies, cognitive or executive function tests were used as proxies for IQ.)

Fluoride and children's IQ: evidence of causation lacking

- Main area of concern – **risk of bias assessment and its application**
- “Human evidence of Taher review overlaps with the draft of NTP review and neurological and health effects of fluoride in water, including recent Irish gov review and Canadian gov review”

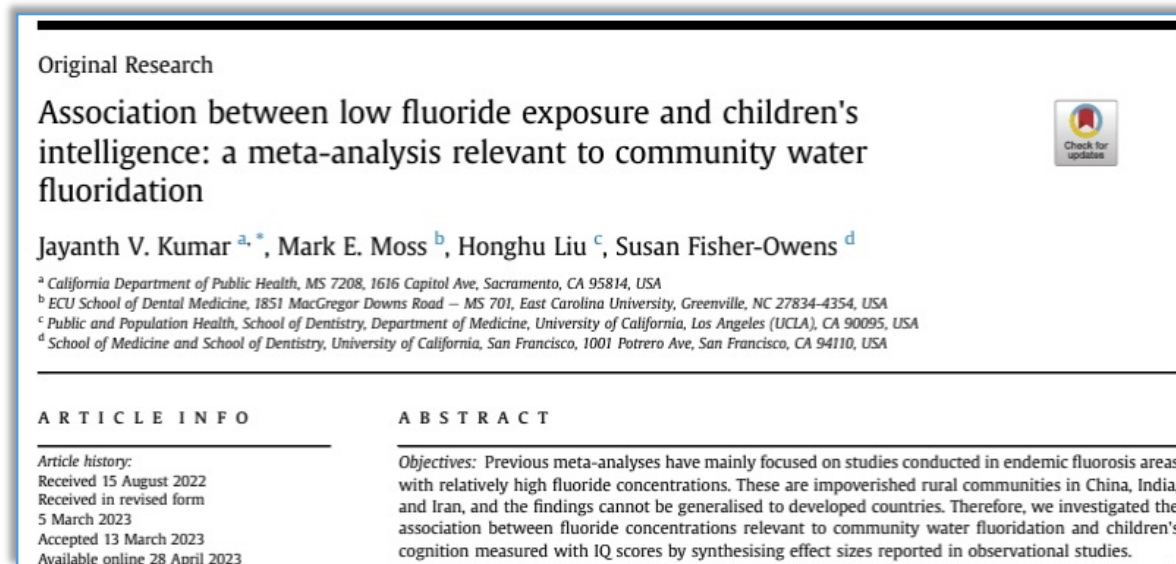


- Taher/NTP assessed studies as “*high quality/low risk of bias*”:
 - **Till et al. (2020)**
- Irish and Canadian reviews assessed studies as “**Low quality/high risk of bias**”
- **MIREC – not designed to evaluate fluoride (i.e. Till et al.)**

(Sources: Moore, D and Glenny, A-M), “Fluoride and children's IQ: Evidence of causation lacking”, Evidence-Based Dentistry (2024), 25:95-97, a Comment on Taher et al., Systematic review of epidemiological and toxicological evidence on health effects of fluoride in drinking water, 2024)

Important meta-analysis of IQ studies (2023)

- A recent, high-quality meta-analysis that separately looked at fluoride and IQ scores.
- This meta-analysis compared IQ scores for children whose drinking water had < 1.5 ppm of fluoride with those whose water had > 1.5 ppm of fluoride

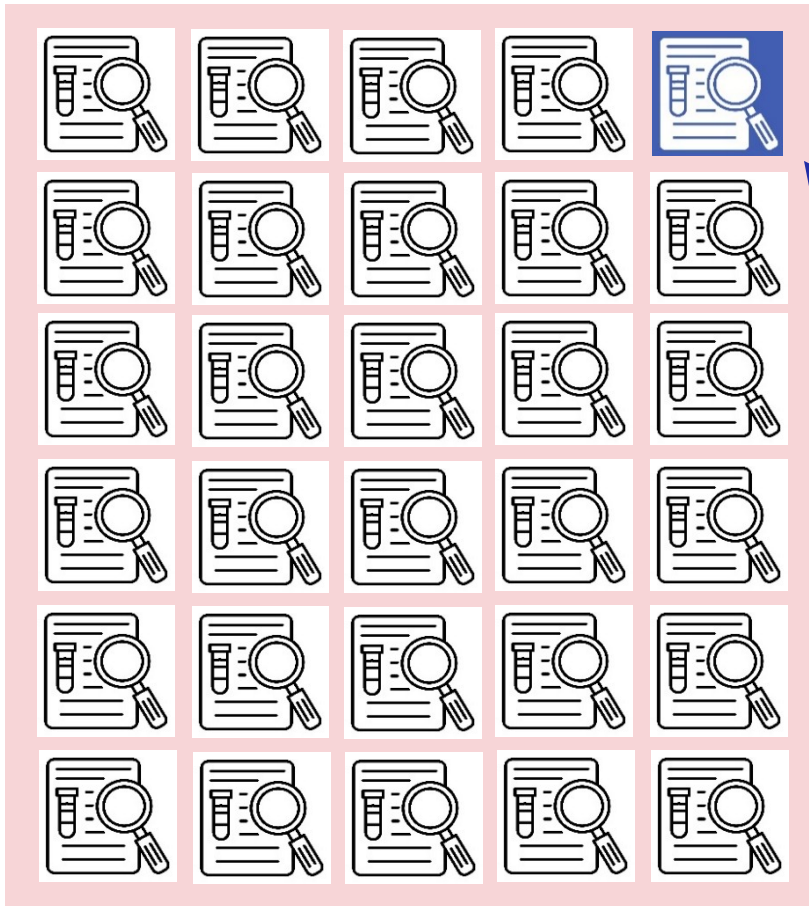


- The authors found **no evidence** of a fluoride-IQ association below the level of 1.5 ppm.
- Fluoridated water is at 0.7 ppm.

(Sources Kumar et al., Association between low fluoride exposure and children's intelligence: a meta-analysis relevant to community water fluoridation, Public Health, 2023)

Most IQ studies are not high-quality research

Researchers analyzed 30 studies about fluoride and IQ scores.



29 of these studies were found to have a **moderate or high risk of bias**.

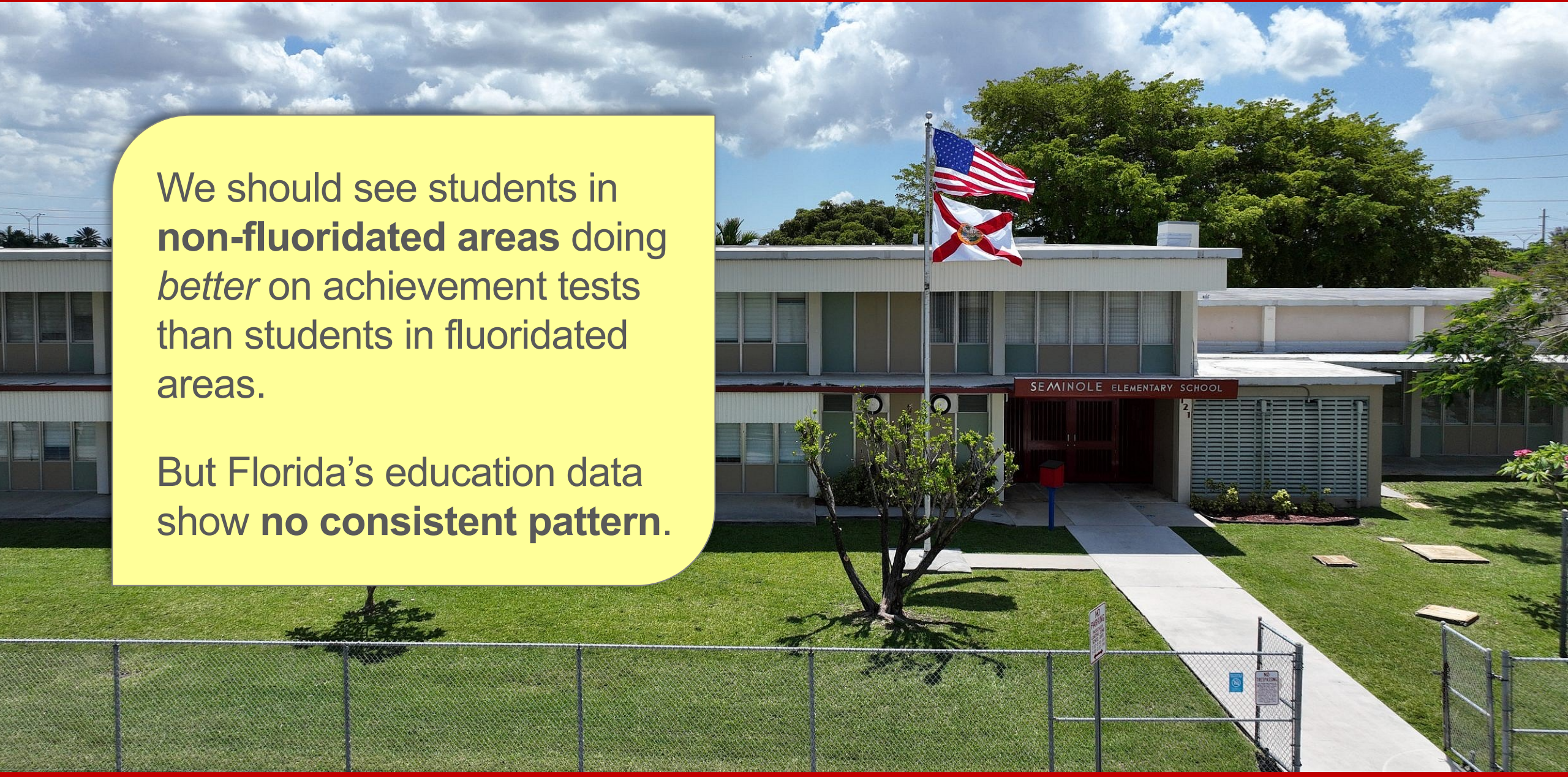
Only 1 study was found to have a **low risk of bias**. This study found no link between fluoride exposure and IQ scores.

**What about standardized
tests of students and
“IQ differences”?**

If fluoride lowers IQs, we should see a clear pattern

We should see students in **non-fluoridated areas** doing *better* on achievement tests than students in fluoridated areas.

But Florida's education data show **no consistent pattern**.



Composite ACT scores in low fluoride vs high fluoride

Missouri Average 2024 Composite ACT Scores = 19.8

- Composite ACT scores in schools having naturally fluoridated water <0.6 ppm (low fluoride) vs >0.6 ppm (high fluoride) evaluated statewide
- *No difference* in scores from low to high fluoride levels
- *No pattern* shown in standardized scores
- Claims of IQ deficits from studies using the Canadian MIREC biobank ***are not supported***

Fluoride range	Fluoride in ppm	Composite ACT Average
Low	0.00 – 0.39 ppm	19.6
High	0.68 – 2.5 ppm	19.69

(Source: Missouri Dept of Elementary and Secondary Education, accessed Mar 17, 2025)

Research confirms fluoridation's safety

Opponents: *“Fluoride additives are not pharmaceutical grade.”*



What the CDC says:

“Some have suggested that pharmaceutical grade fluoride additives should be used for water fluoridation. **Pharmaceutical grading standards used in formulating prescription drugs are not appropriate for water fluoridation additives.** If applied, those standards could actually exceed the amount of impurities allowed by AWWA and NSF/ANSI in drinking water.”

Some potential impurities have **no restrictions** by the USP, including **arsenic, some heavy metals regulated by the U.S. EPA, and radionuclides**

(Source: Centers for Disease Control and Prevention, “Fluoridation,” [accessed](#) June 1, 2025)

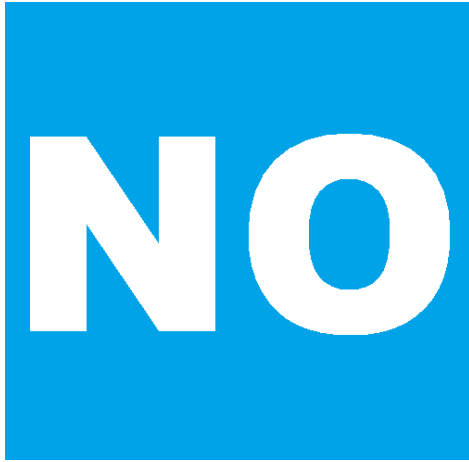
Leading health & scientific groups that **SUPPORT** fluoridation

1. American Water Works Association – over [51,000](#) active members
2. American Academy of Pediatrics – approximately [67,000](#) active members⁺
3. American Dental Association – over [159,000](#) active members
4. Centers for Disease Control and Prevention
5. American Academy of Family Practitioners – over [129,000](#) active members
6. American Nurses Association – [4 million](#) active members
7. American Medical Association – over [270,000](#) active members
8. American Dental Hygienists Association – over [226,000](#) active members
9. Department of Defense – [Memo](#) regarding fluoridation of military bases around the world
10. World Health Organization*

Leading health & scientific groups that **OPPOSE** fluoridation

0

Are there good alternatives to fluoridation?



NO

- Fluoridation is the single most cost-effective way to prevent cavities for adults and children
- Fluoride toothpaste is **not** a replacement for fluoridation. Both are needed
- Fluoride supplements: Compliance is a problem
- Supplements and school-based dental programs do not serve adults, whose oral health needs continue as they age

“The science is clear and settled”

Fluoridation is

1. safe,
2. effective and
3. economical

Talking about fluoride?

Understanding the science and improving how we communicate with our patients that our office supports CWF



What to say about Community Water Fluoridation

Short Message to let someone know the basics.

Safe Effective Economical. SEE

Does your practice or office let people know you support CWF?

Does your staff agree?

Learn more than today's talk

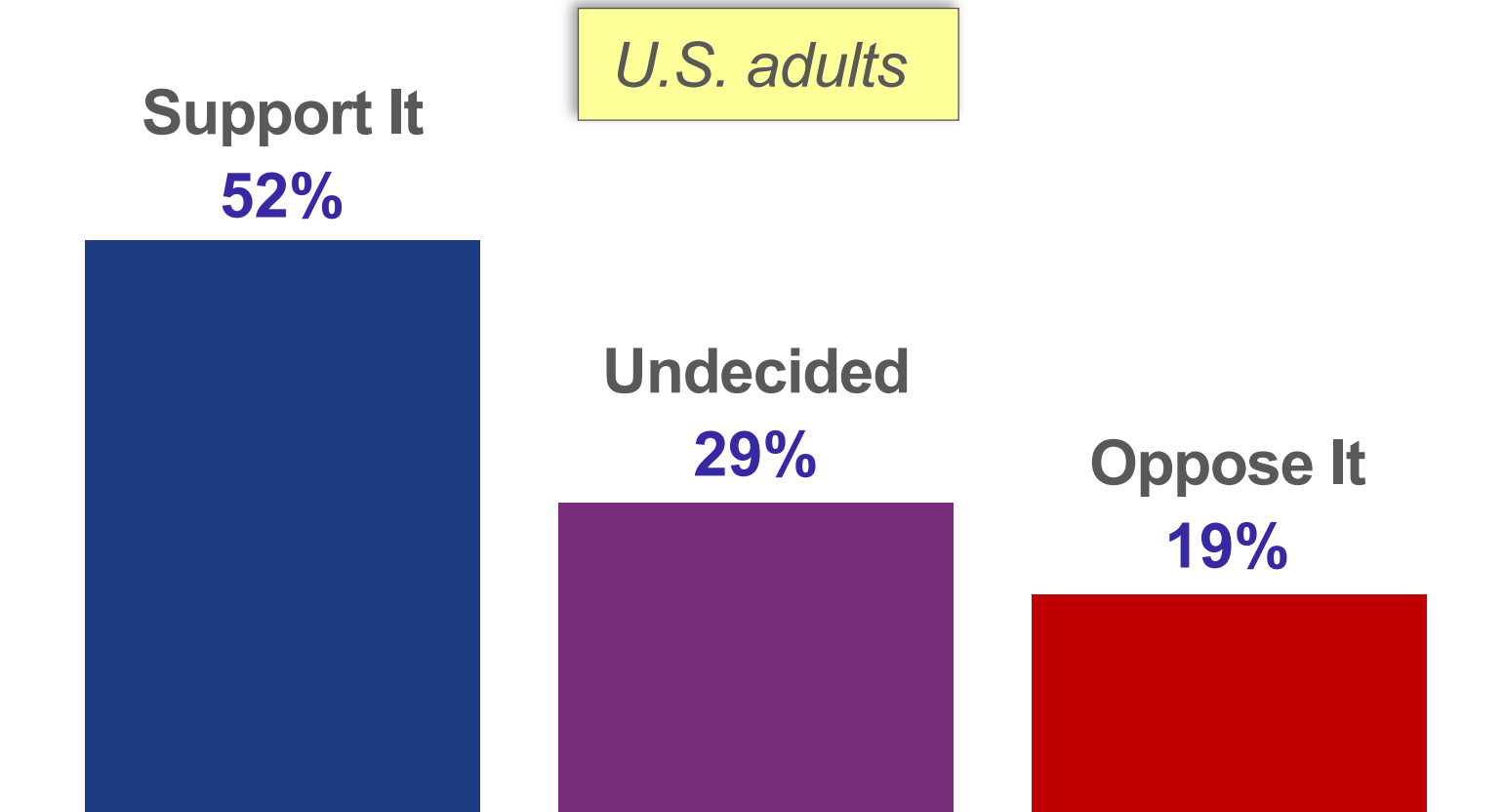
Research into public attitudes about fluoride

Public perceptions: what research shows

- A majority of adults support water fluoridation.
- Nearly 3 in 10 Americans are undecided, so it is important to educate them with accurate information.



(Source: The quantitative instrument an online survey of 1,114 U.S. adults with quotas to ensure it was representative of the nation's demographics. This survey was conducted in early July 7–9, 2025 and had a margin of error of +/- 3% due to sampling.)



Public perceptions: what research shows

Is water fluoridation a partisan issue?

No, consider these findings:

Republicans



Support It
48%

Undecided
28%

Oppose It
24%

(Source: The quantitative instrument an online survey of 1,114 U.S. adults with quotas to ensure it was representative of the nation's demographics. This survey was conducted in early July 7–9, 2025 and had a margin of error of +/- 3% due to sampling.)

Be aware of other public perceptions

- 1 Most people view “**natural**” products as safer and healthier. Anything seen as artificial is considered risky.
- 2 **Freedom of choice** is important to many people. They want health providers to recognize that whether to use fluoride is *their* choice.
- 3 Some people are unaware that fluoride is **beneficial for adults** and not only for children.



(Sources: A series of focus groups, created through online bulletin board interactions, were conducted by Marketing For Change, a social marketing firm with offices in Florida and Virginia. These focus groups began in 2013, resumed in 2017 and were most recently conducted in the summer of 2025. Discussions and interviews with Resource Media staff also informed the drafting of this list of public perceptions, as did the analysis of FrameWorks Institute, based in Washington, D.C.)

Identify fluoride as a mineral

1

Most people view “natural” products as safer and healthier. Anything seen as artificial is considered risky.



“ Fluoride is **a mineral** found naturally in lakes, rivers and groundwater. It comes from nature. We learned many years ago that it helps to protect teeth from cavities. ”

Communicate in ways that respect this value

2

Freedom of choice is important to many people. They want health providers to recognize that whether to use fluoride is *their* choice.

“ I want to share some information about fluoride that can help you make the best decision (for yourself or your family). ”

“ Fluoride is a proven way to prevent decay. Strengthening the tooth enamel means **freedom** from pain, **freedom** from expensive dental bills, and **freedom** to smile with confidence. ”



Communicate in ways that respect this value

- 2 **Freedom of choice** is important to many people. They want health providers to recognize that whether to use fluoride is *their* choice.

▼ **This language could antagonize a parent**

“Now, I’d like to apply fluoride varnish to your daughter’s teeth, OK? It’s the smart thing to do at her age.”

▼ **Misses a chance to offer your guidance**

“Do you want your daughter to get a fluoride treatment today?”

▼ **Offers your guidance and respects parents**

“I recommend applying fluoride varnish on your daughter’s teeth. Do you have any questions or concerns?”

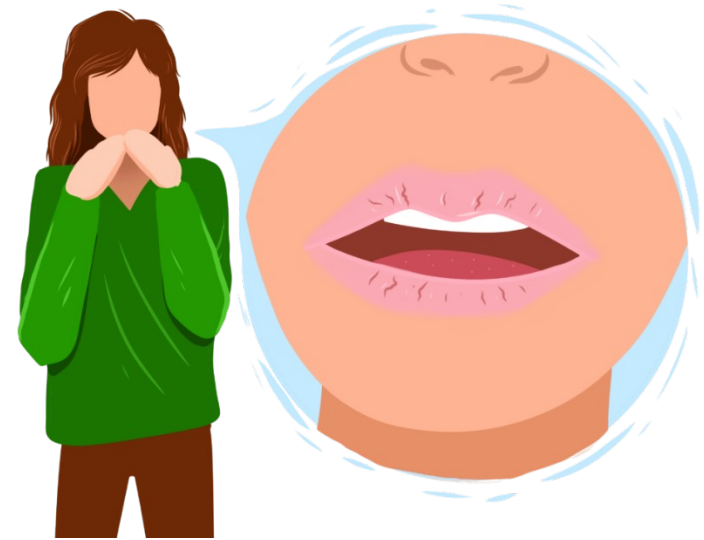
Let them know fluoride is beneficial at all ages

3

Some adults are unaware that fluoride is beneficial *for them* and not only for children.

“Some medications cause “dry mouth” by reducing the amount of saliva. There isn’t enough saliva to buffer against the acids that damage teeth. This makes fluoride a very important tool for adults.”

“It’s common for gums to recede as we age. This exposes the roots of your teeth and raises the risk of cavities. Fluoride is a mineral that helps to protect your teeth against root decay.”



Active listening is key

Engage in active listening:

- Most patients do not hold a strong “love it” or “fear it” attitude about fluoride. Don’t assume a patient with doubts is anti-fluoride.
- Maintain eye contact.
- Allow patients to complete their statements without interrupting.
- A patient’s questions or comments provide cues for how you should respond.
- It may take multiple conversations before a patient may follow your guidance.



Avoid conflict

If a patient starts to sound agitated or has voiced strong anti-fluoride views, wrap up with a conciliatory message:

- *“I hear you. It sounds like you’ve made up your mind about fluoride. I’ll respect your decision. Let me know if you want to talk more about this during a future check-up.”*
- *“We seem to disagree on fluoride, so let’s talk about some other ways to keep your teeth and gums healthy.”*



Final thoughts

Regardless of where your practice/clinic is located:

- Do not describe topical fluorides as an “**alternative**” or “**replacement**” for fluoridated water. Research shows that topical modes **do not fill all of the gap** in decay prevention that is left when fluoridation ends.



If you practice in a previously fluoridated area:

- Remind your patients that the local water supply no longer has enough fluoride to prevent decay.
- Cite this as a reason why it's more important than ever for people to brush twice daily with a toothpaste *that contains fluoride*, consider recommending fluoridated mouthwash

Resources

1. American Dental Association–**Fluoridation Facts, 2025 E-book Page i**
2. American Academy of Pediatrics – I like my teeth
3. Missouri Department of Health and Senior Services – Office of Dental Health Webpage
4. Missouri Coalition for Oral Health Website
5. American Fluoridation Society
6. CDC- FLO

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