



AMERICA'S PEDIATRIC DENTISTS
THE BIG AUTHORITY on little teeth™

American Academy
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

Under Pressure: Providing Pediatric Oral Health Care in an Increasingly Fluoride-Skeptic World

This AAPD and AAP webinar will cover fluoride treatment options for pediatric patients, regulatory updates, and tools for shared decision-making with caregivers.

September 12 | 12 PM CST | Via Zoom



**research
& policy**
center

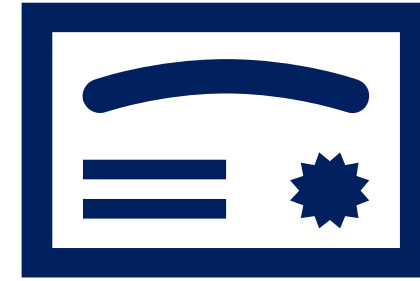
Continuing Education

Continuing dental education is available to those listening in live today who complete the entirety of the CE evaluation.

The evaluation link will be posted at the end of the webinar and provided in a follow-up email.

The evaluation must be completed no later than Monday 9/22. Certificates will be distributed via email by Monday 9/29.

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Q&A

Please use the Q&A box to ask questions of the speakers.

We also have your questions entered during registration. Thank you for thinking ahead and providing these!

We will address questions at the end of the webinar.



Learning Objectives

1. Describe indications for fluoride supplementation
2. List tools and options that are available for caries prevention
3. Practice conversations with parents and caregivers that utilize shared decision-making for optimal oral health



Under Pressure: Providing Pediatric Oral Health Care in an Increasingly Fluoride-Skeptic World



Dr. Tim Wright
Pediatric Dentist
North Carolina



Dr. Susan Fisher-Owens
Pediatrician
California



Dr. Cameron Randall
Clinical Psychologist
Washington



Dr. Mario Ramos
Pediatric Dentist
New Jersey

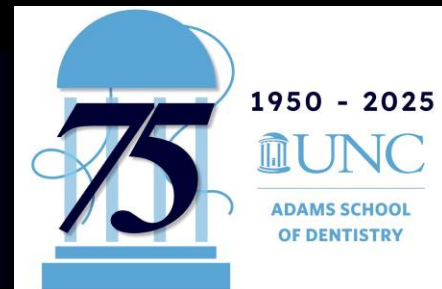
Disclosure

References to specific brands are for educational purposes only and do not imply endorsement.

Fluoride: The Convergence of Evidence

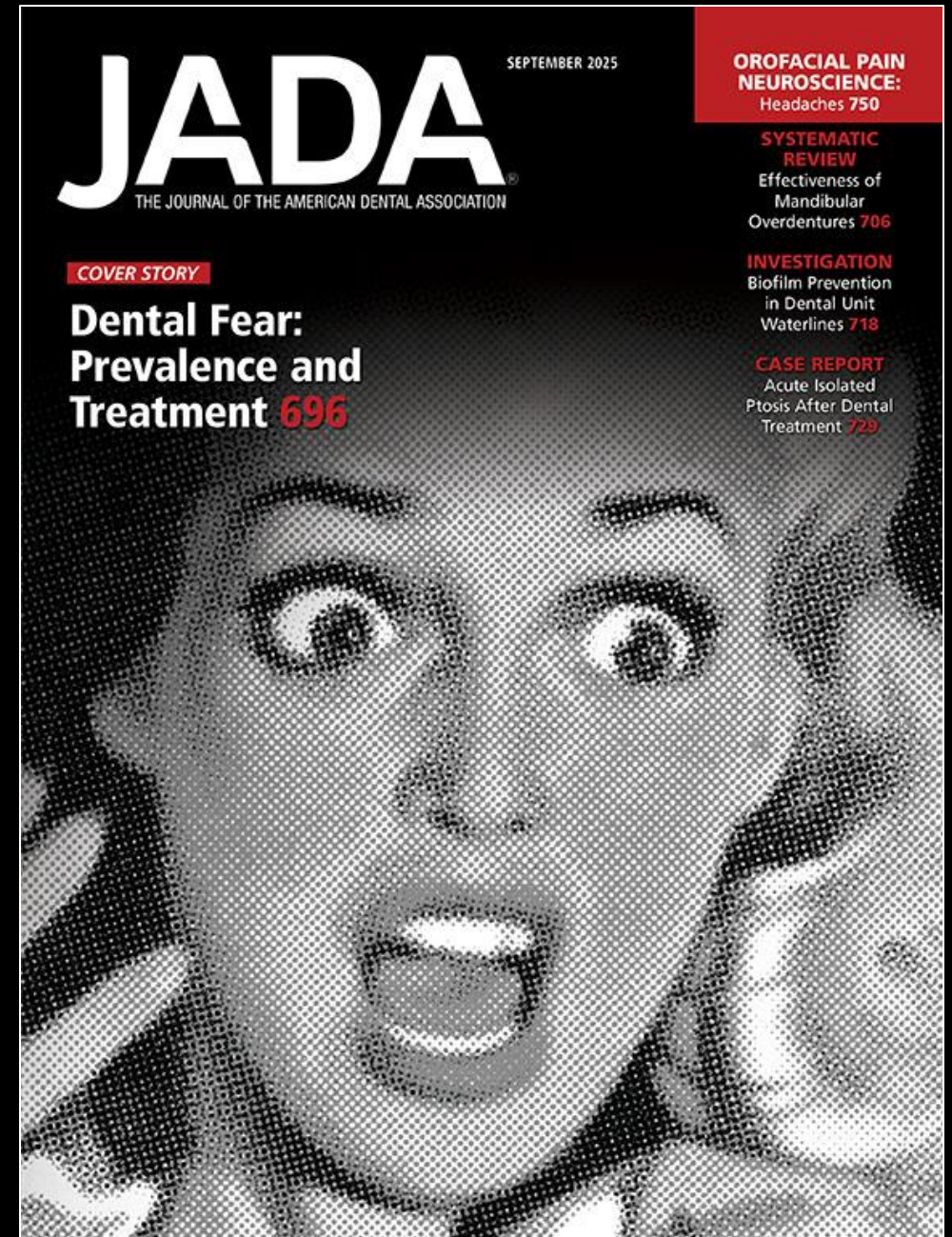


Tim Wright, DDS, MS
Pediatric Dentistry & Dental Public Health



Conflict of Interest

Neither my immediate family nor I have any financial interests that would create a conflict of interest or restrict my independent judgment concerning the content of this course.



Fluorine

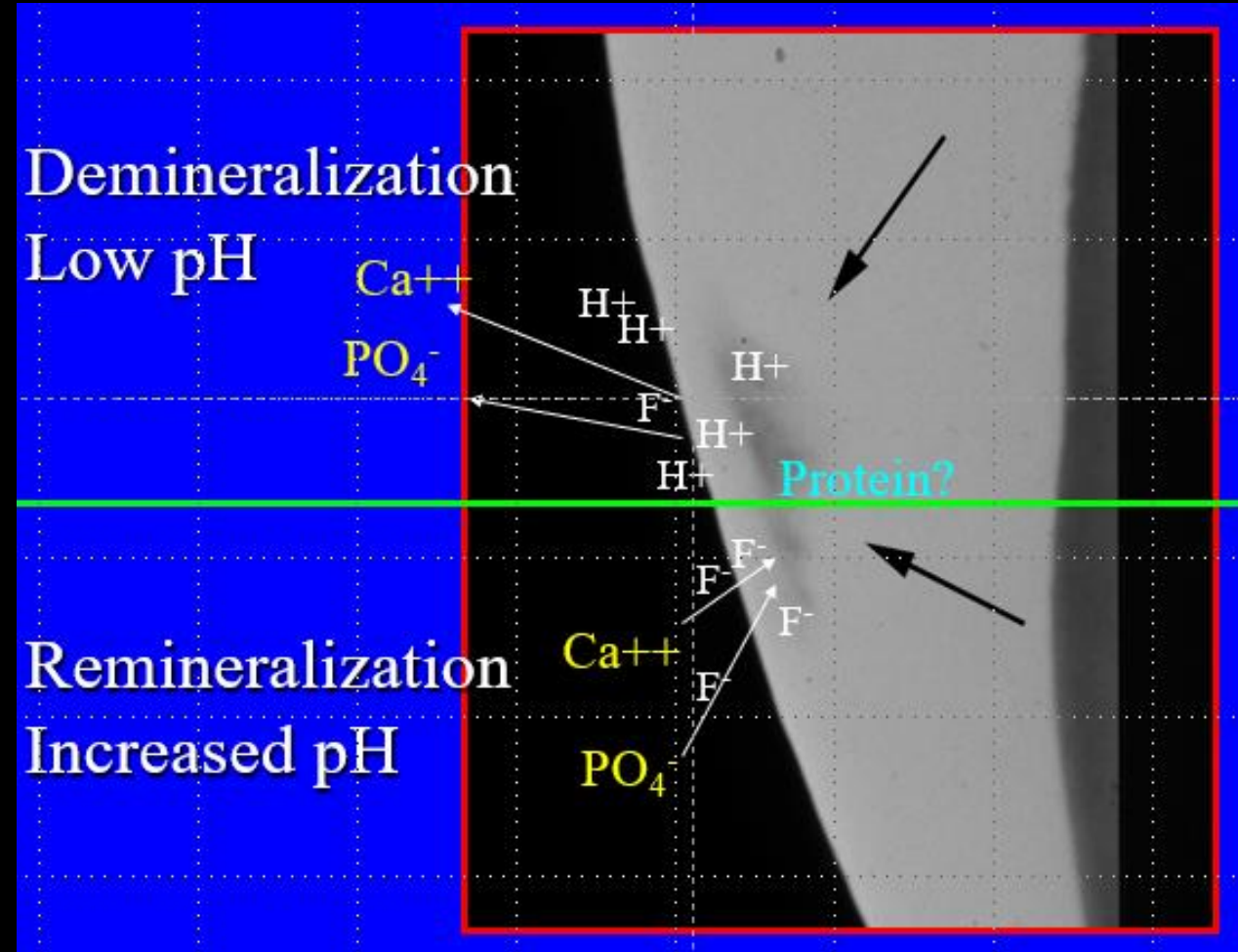
Periodic Table of Elements																		He
H																	He	
Li	Be											B	C	N	O	F	Ne	
Na	Mg											Al	Si	P	S	Cl	Ar	
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	
Cs	Ba		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	
Fr	Ra		Rf	Db	Sg	Bh	Hs	Mt	Uun	Uuu	Uub							
		La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu		
		Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr		

- 13th most abundant compound in earth's crust
- Most reactive element
- Atomic number 9
- Halogen
- Discovered 1771 and isolated in 1886

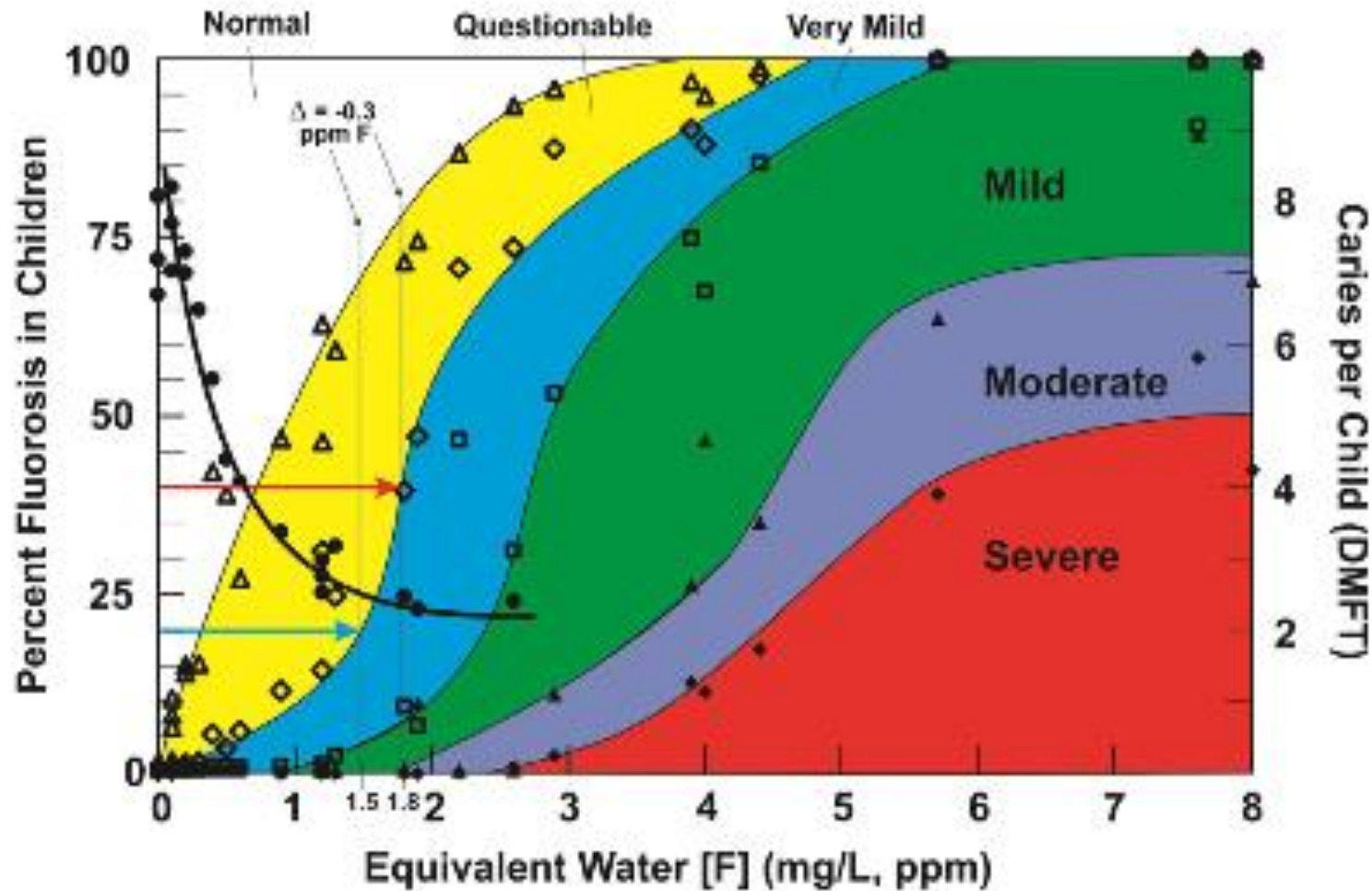
46.6% Oxygen (O)
27.7% Silicon (Si)
8.1% Aluminum (Al)
5.0% Iron (Fe)
3.6% Calcium (Ca)
2.8% Sodium (Na)
2.6% Potassium (K)
2.1% Magnesium (Mg)

Fluoride and Remineralization

- Remineralization considered most important caries prevention mechanism
- Systemic fluoride effect
- Highly reactive fluoride ion attracted to demineralized crystallites
- Interacts with Ca and P ions to initiate remineralization



Fluoride – Caries - Fluorosis



Natures medication

Systemic vs Topical

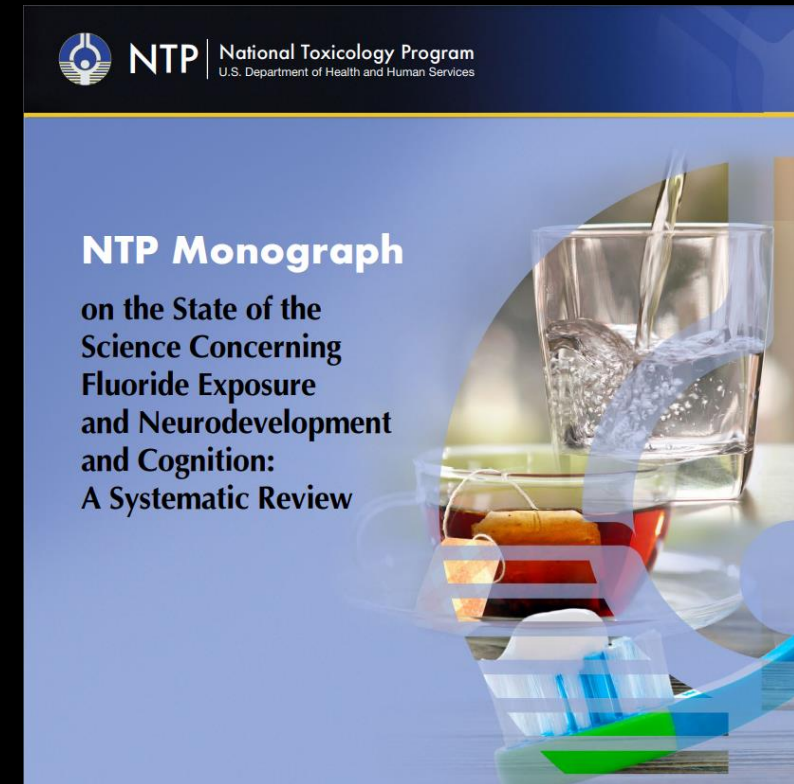
Why the heightened interest in water fluoridation?

- Controversy around fluorides is not new
- National Toxicology Program – published 1/6/2025 JAMA Pediatrics
- Cochrane Report – Water fluoridation and caries 10/2024
- Politics: Robert Kennedy Jr. fluoride causes arthritis, bone cancer, thyroid damage, IQ loss, ...
- FDA hearing F Supplements 7/25
- Media – NY Times, CBS News, Journals, Social Media, etc.



National Toxicology Program Report Aug 2024

- There were limited data and uncertainty in the dose-response association between fluoride exposure and children's IQ when fluoride exposure was estimated by drinking water alone at concentrations less than 1.5 mg/L.



59 total studies included in meta-analysis

Country			
China	41	-0.42 (-0.51 to -0.33)	<.001
India	8	-1.09 (-2.23 to 0.06)	<.001
Iran	4	-0.68 (-0.99 to -0.38)	.08
Canada	2	0.01 (-0.14 to 0.16)	NA
Pakistan	2	0.10 (-0.57 to 0.77)	.01
New Zealand	1	0.01 (-0.19 to 0.22)	NA
Taiwan	1	0.10 (-0.10 to 0.29)	NA



Original Research

Association between low fluoride exposure and children's intelligence: a meta-analysis relevant to community water fluoridation

Jayanth V. Kumar ^{a, *}, Mark E. Moss ^b, Honghu Liu ^c, Susan Fisher-Owens ^d


No IQ difference in children with means of 0.9 vs 0.3 ppm F drinking water
Meta analysis of 8 studies.

The association observed at higher fluoride levels (mean 3.7 high fluoride vs 0.7 ppm F) in endemic areas requires further investigation.



Article

The Impact of Exposure to Iodine and Fluorine in Drinking Water on Thyroid Health and Intelligence in School-Age Children: A Cross-Sectional Investigation

Siyu Liu ¹ , Xiaomeng Yu ^{1,2}, Zhilei Xing ¹, Peisen Ding ¹, Yushan Cui ^{3,*} and Hongliang Liu ^{1,*}

High Iodine/ high fluoride associated reduced IQ and thyroid function: Low levels no association

Is there a mechanism to explain an IQ change from fluoride exposure?

Fluoride exposure and indicators of thyroid functioning in the Canadian population: implications for community water fluoridation

Amanda M Barberio, ^{1,2} F Shaun Hosein, ³ Carlos Quiñonez, ⁴ Lindsay McLaren ²

No evidence of a relationship between fluoride exposure (from urine and tap water) and the diagnosis of a thyroid condition



California Federal Judge Ruled Sept 24, 2024

Ruled there was the potential for harm from community water fluoridation and the EPA would need to respond.

Water Fluoridation

- ~ 80-year history of community water fluoridation in US.
- Caries reduction is approximately 5-25% in primary/permanent dentitions



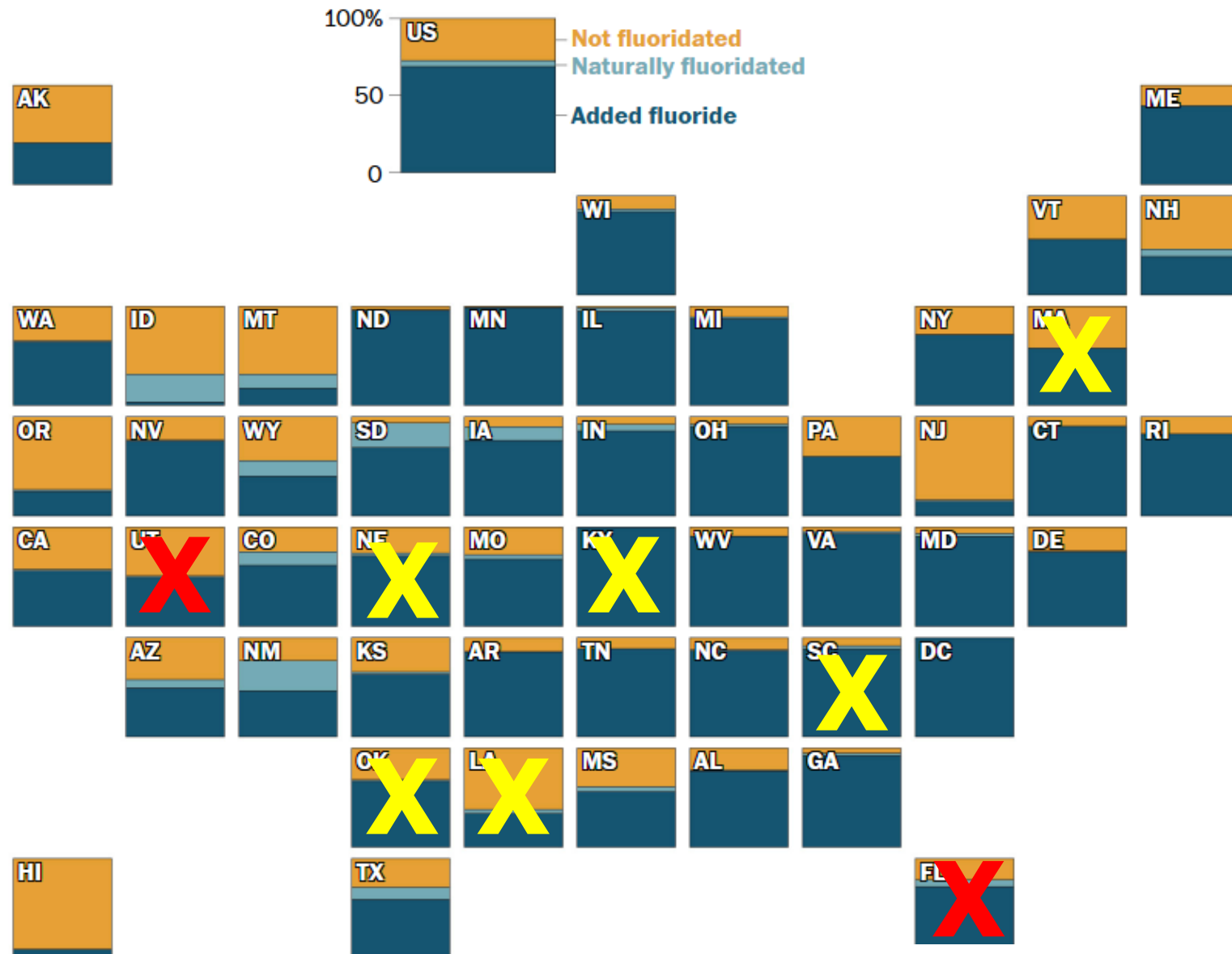
Community Water Fluoridation

- EPA - National Primary Drinking Water Regulation
 - Fluoride regulated as an inorganic contaminant
 - 2 ppm F community water system must notify consumers
 - 4 ppm F upper limit for potable water
- CDC- HHS Recommendation for optimal fluoridation
 - 0.7 ppm F
- 13 States have fluoride regulations
- Multiple states banning community water F



Most Americans drink fluoridated water, but not in all states

Percent of people by fluoridation source



People receiving drinking water from non-community systems such as private wells are not included

Source: Centers for Disease Control and Prevention

The Washington Post
Democracy Dies in Darkness

- ~ 72% of US population drinking fluoridated water
- ~ 10% is natural fluoridation
- (CDC data 2022)



Considering F Ban



Passed F Ban

With a reduction in access to community water fluoridation – fluoride supplements are increasingly becoming important as a caries prevention therapeutic.

However

FDA NEWS RELEASE

**FDA Begins Action To Remove Ingestible Fluoride
Prescription Drug Products for Children from the
Market**

05/13/2025



**U.S. FOOD & DRUG
ADMINISTRATION**

Fluoride supplement hearing July 23, 3035

Vitamins with Fluoride



Drops – children under 4 yrs



Tablets – children 4 years +

Multivitamins with Fluoride

21 different brands

Tablets and drops

Dosage – 0.25 or 0.5 mg

Table. DIETARY FLUORIDE SUPPLEMENTATION SCHEDULE			
Age	<0.3 ppm F	0.3 to 0.6 ppm F	>0.6 ppm F
Birth to 6 months	0	0	0
6 months to 3 years	0.25 mg	0	0
3 to 6 years	0.50 mg	0.25 mg	0
6 to at least 16 years	1.00 mg	0.50 mg	0

Effectiveness of Different Caries Prevention Therapies

- Casein phosphoproteins + Amorphous Calcium Phosphate
- Curodont
- Silver Nitrate
- Nanohydroxyapatite Toothpaste
- Nanohydroxyapatite Varnish

Fluoride





AMERICA'S PEDIATRIC DENTISTS
THE BIG AUTHORITY on little teeth®



Fluoride makes tooth mineral resistant to acid attack, so that teeth are more resistant to dental caries.



Exposure to fluoride supplements does not cause unhealthy changes in the oral or gut microbiome in children.

Consuming fluoride supplements does not cause negative neurobehavioral or other health concerns in children.

Removing fluoride supplements from the market will cause an increase in dental caries and the associated morbidities.

Thank You



Fluoridation Facts

- ◆ Effectiveness and Benefits
- ◆ Safety
- ◆ Fluoridation Practice
- ◆ Public Policy



ADA American Dental Association®

Fluoride: The Pediatrician's Perspective

Susan Fisher-Owens, MD, MPH, FAAP

Professor of Pediatrics, UCSF SOM

Professor of Preventive and Restorative Dental Sciences, UCSF SOD

Fluoride Consultant, California Office of Oral Health

9/12/25





**Nothing to disclose
Except strong desire to help you understand
the science!**

And, I serve on a Data Monitoring Safety Board for a non-fluoride study being sponsored by Colgate

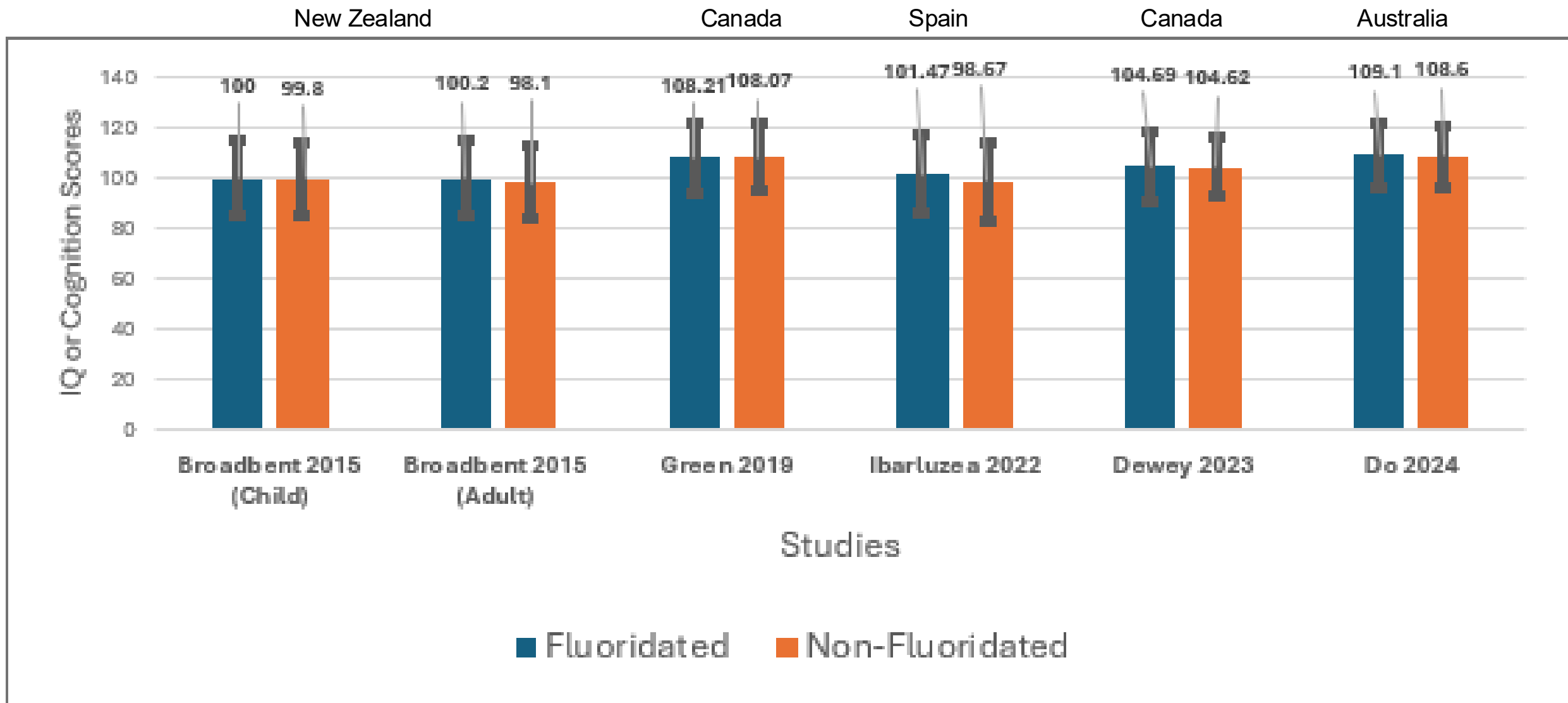
Objectives

- Two comments on the science—what are the comparisons?
- Why options are important
- Practical pediatrician perspective—some conversations

Objectives

- **Two comments on the science—what are the comparisons?**
- Why options are important
- Practical pediatrician perspective—some conversations

Cohort Studies with Comparable CWF and IQ



The Weight of Science



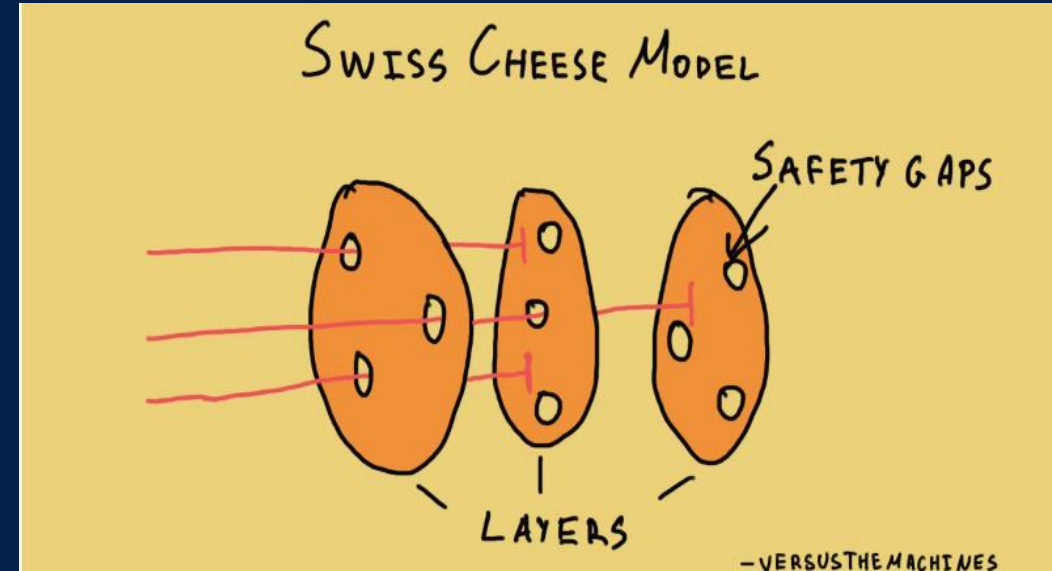
life is better
WITH TEETH

Objectives


- A comment on the science
- **Why options are important**
- Practical pediatrician perspective—some conversations

Fluoride in Water and Toothpaste, AND Varnish??

- Water only
- Toothpaste only
- Varnish only
- Calgary: caries rates rose even though 94 and 95% of population reported using fluoridated toothpaste (McDonagh)



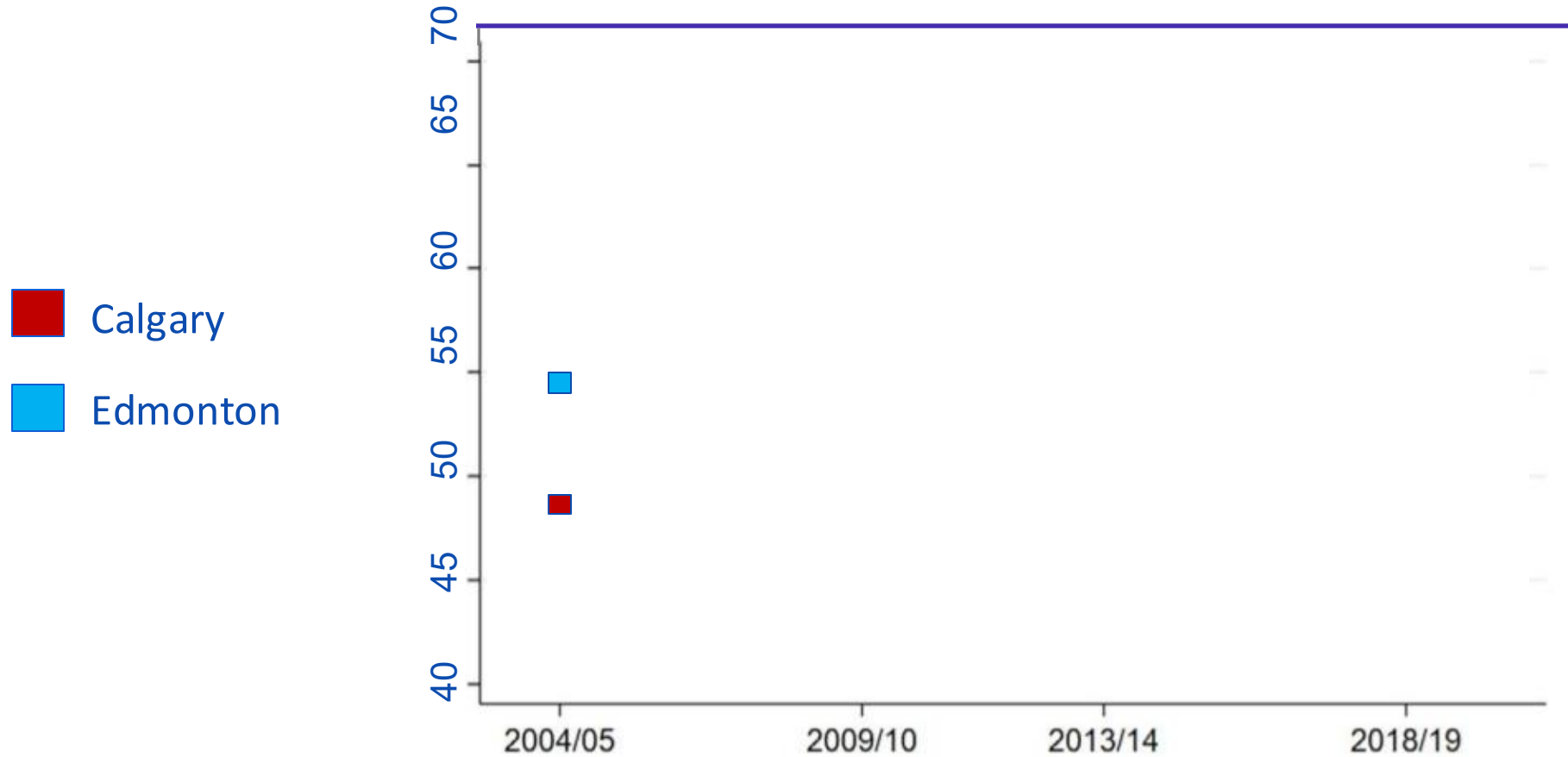
Researchers compare trends in two cities

A map of the province of Alberta, Canada, showing the locations of Edmonton and Calgary. The map is oriented with North at the top. A red dotted line runs diagonally from the northwest to the southeast, likely representing a major river or boundary. The word "ALBERTA" is written in the upper left. The cities "Edmonton" and "Calgary" are marked with small circles and labeled. Two yellow text boxes are overlaid on the map, providing information about water fluoridation in these cities.

Edmonton's drinking water remained fluoridated throughout the study period

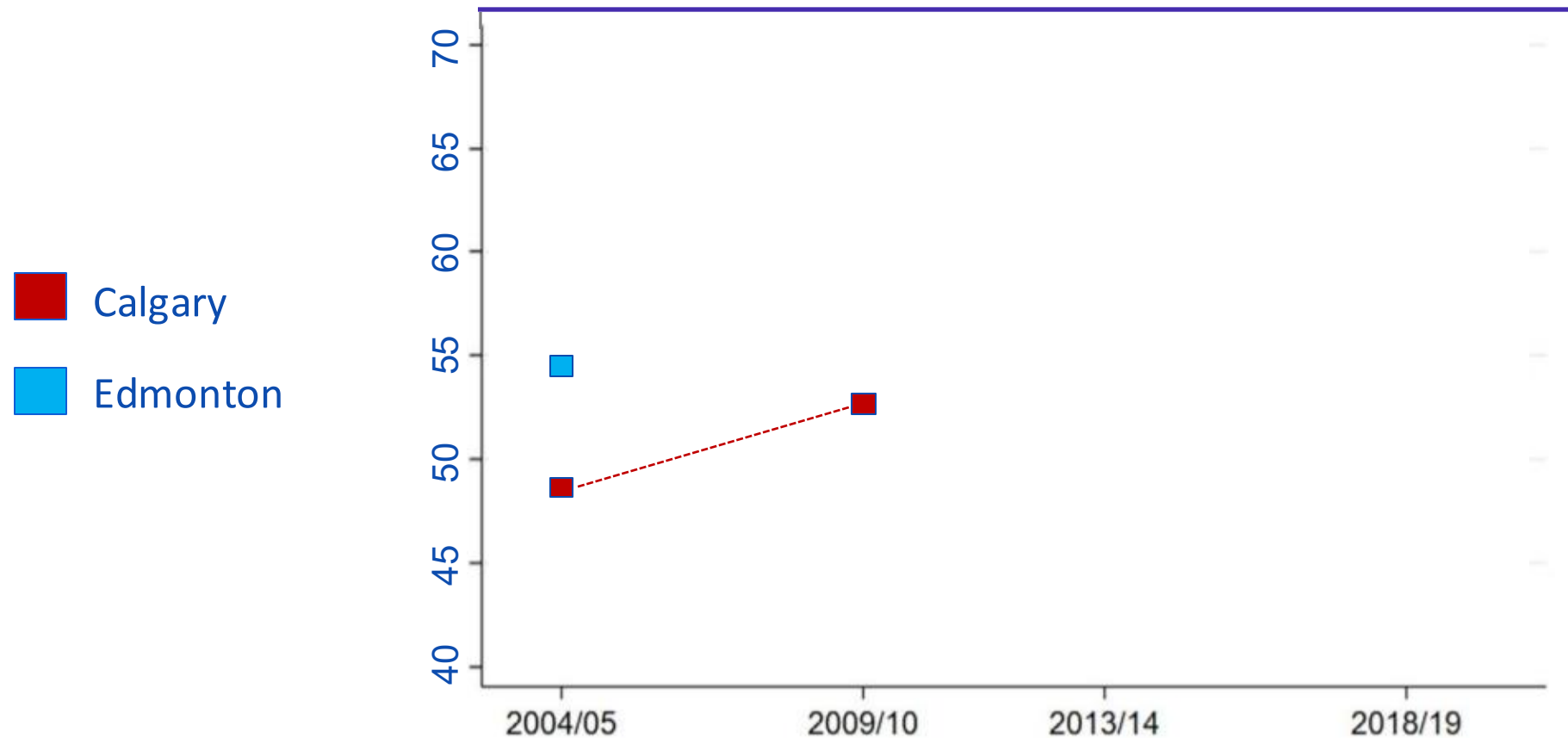
When the research began, **Calgary** fluoridated its drinking water but later decided to end this practice

Initially, Calgary had a lower childhood decay rate



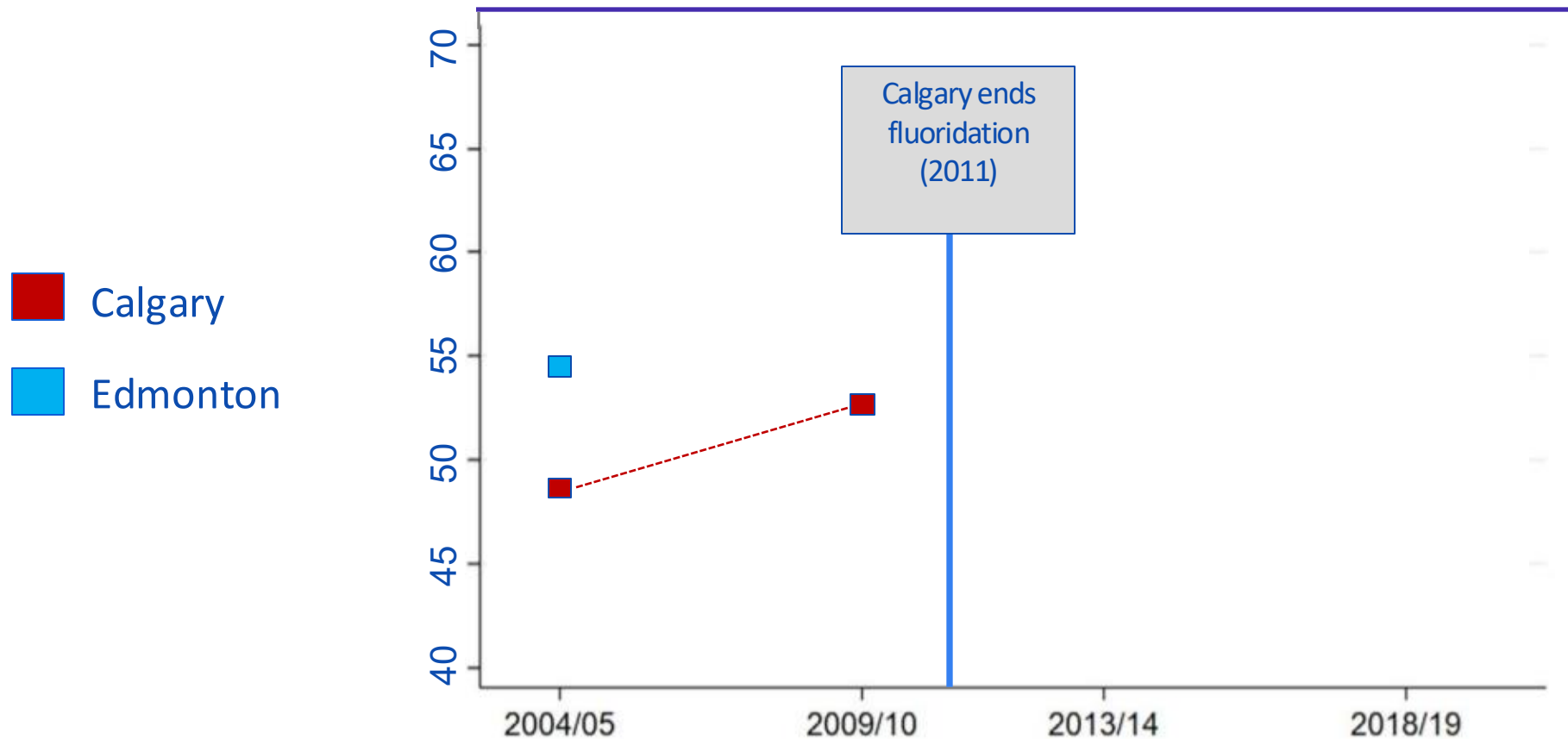
(Source: McLaren L, et al., [Fluoridation cessation and children's dental caries: A 7-year follow-up evaluation of Grade 2 schoolchildren in Calgary and Edmonton, Canada. Community Dentistry & Oral Epidemiology. 2022;50\(5\):391-403.](#))

The decay gap between the cities began to close



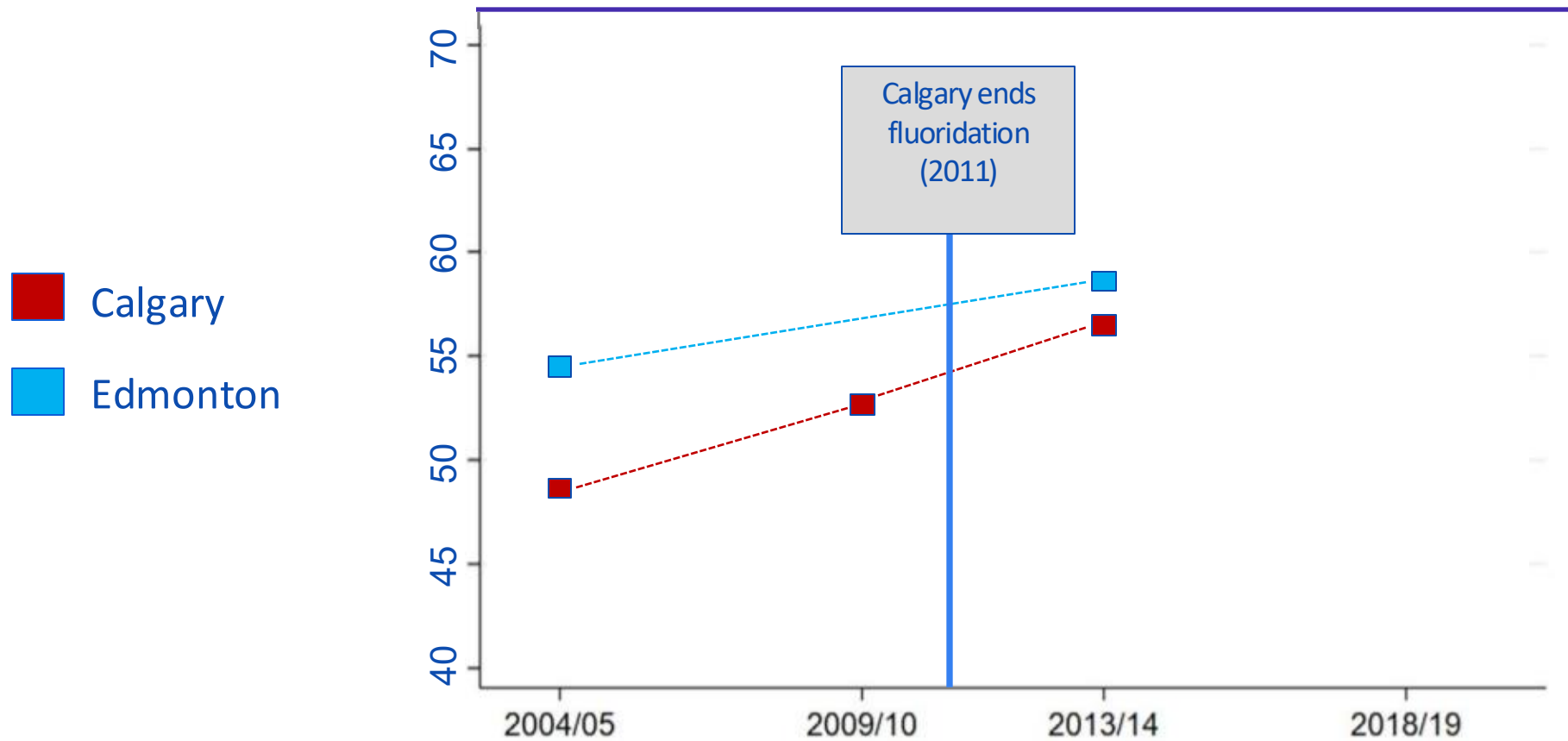
(Source: McLaren L, et al., Fluoridation cessation and children's dental caries: A 7-year follow-up evaluation of Grade 2 schoolchildren in Calgary and Edmonton, Canada. *Community Dentistry & Oral Epidemiology*, 2022;50(5):391-403.)

In 2011, Calgary decided to end water fluoridation



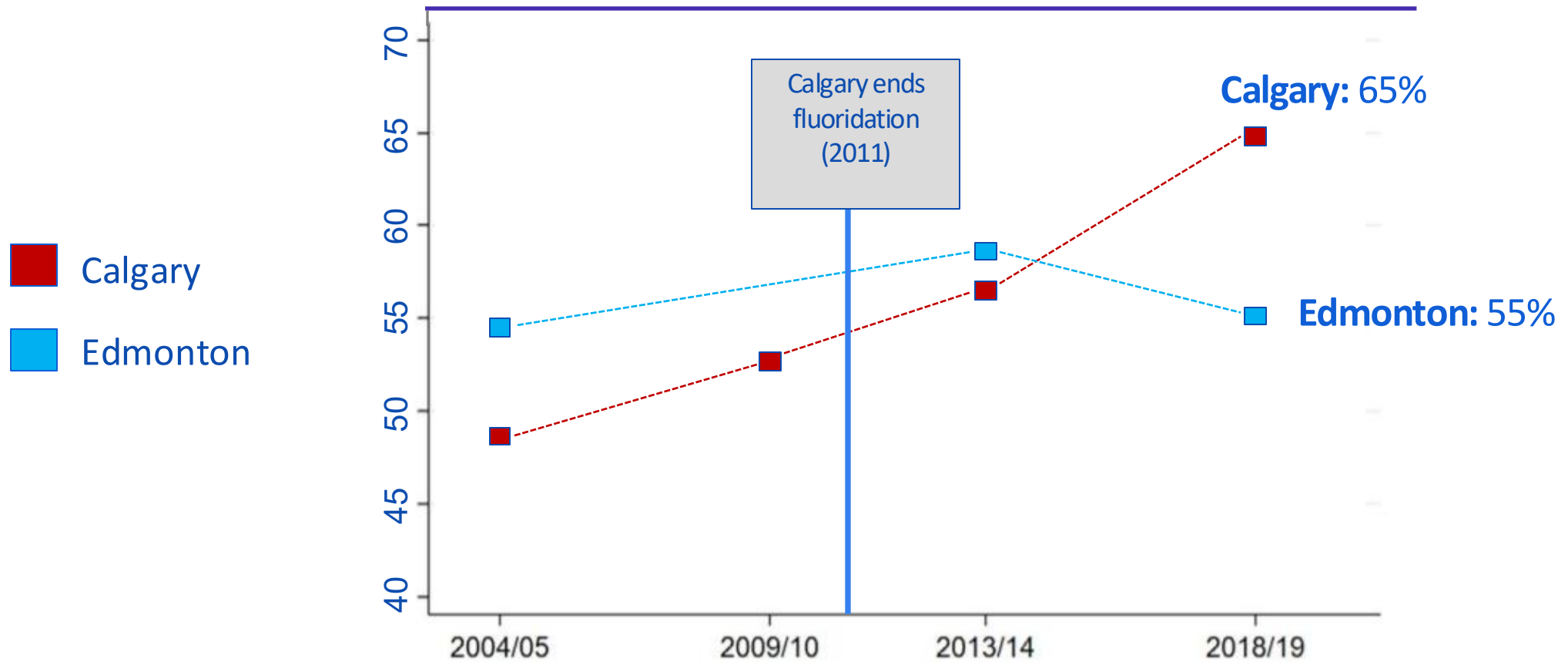
(Source: McLaren L, et al., [Fluoridation cessation and children's dental caries: A 7-year follow-up evaluation of Grade 2 schoolchildren in Calgary and Edmonton, Canada. Community Dentistry & Oral Epidemiology, 2022;50\(5\):391-403.](#))

Afterward, Calgary's decay rate steadily rose



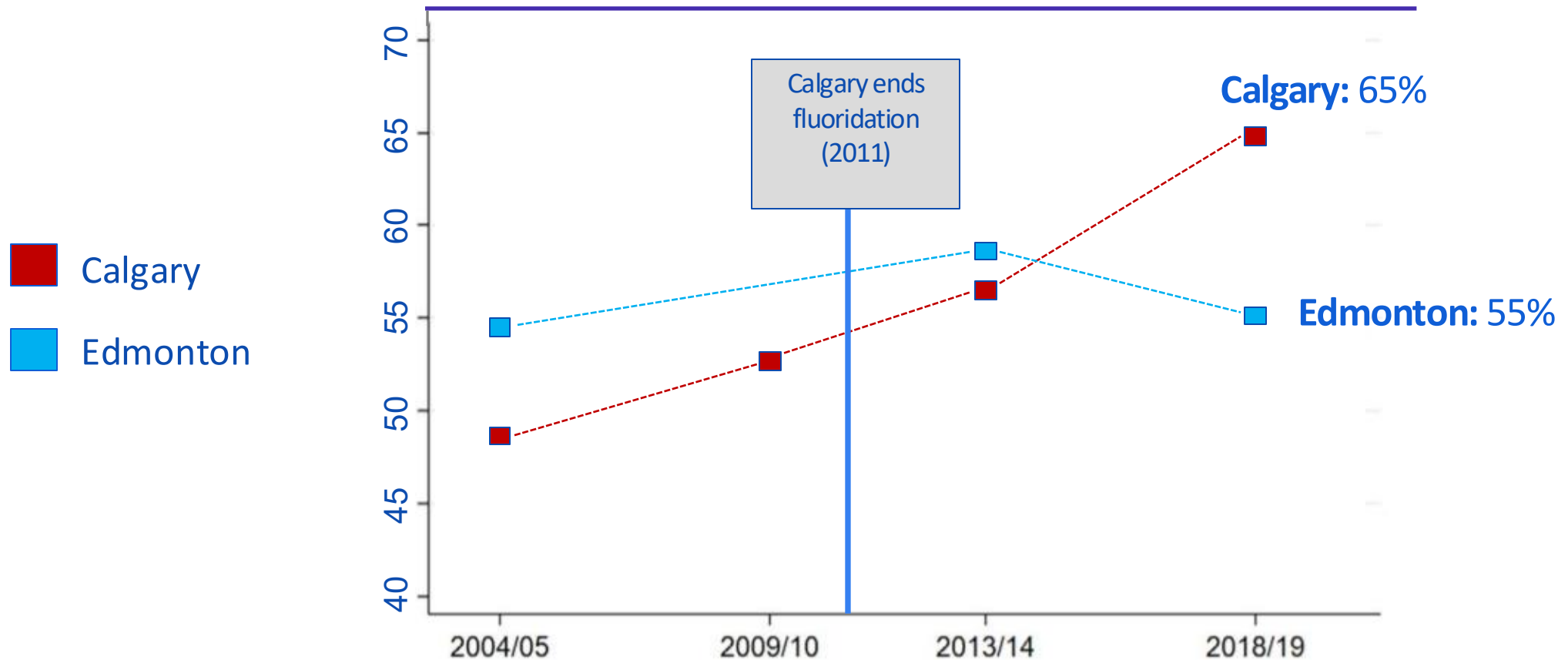
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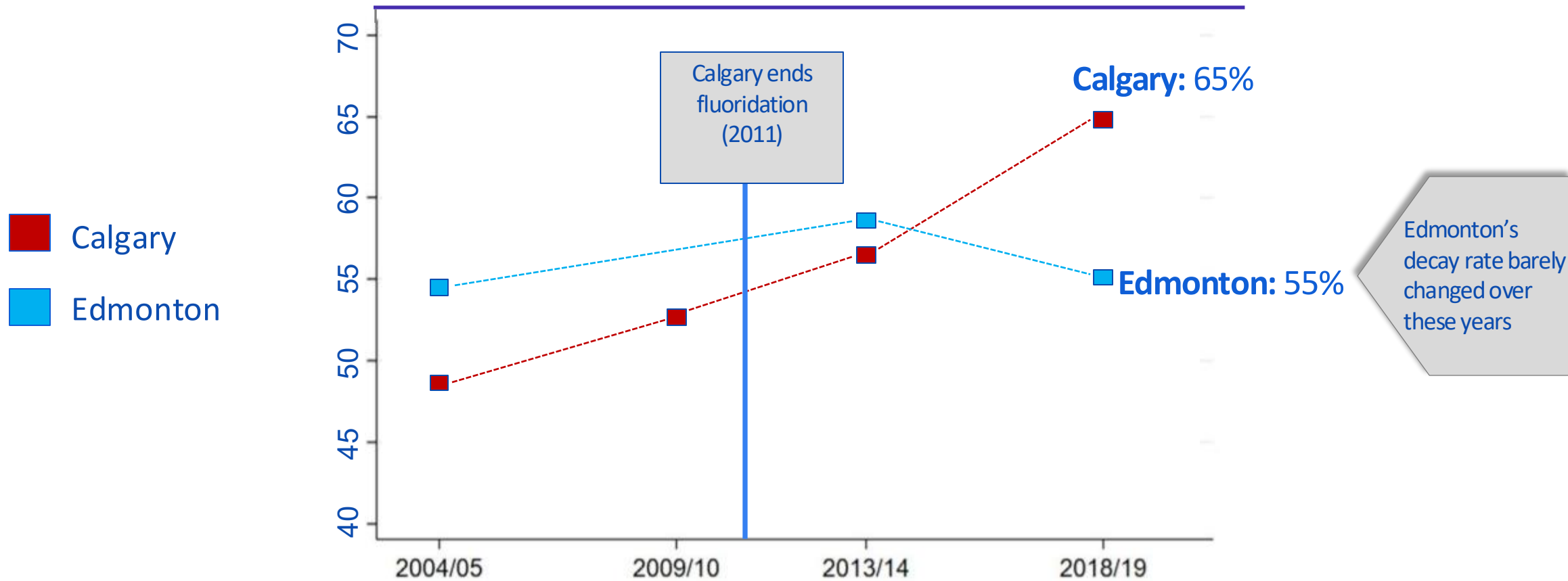
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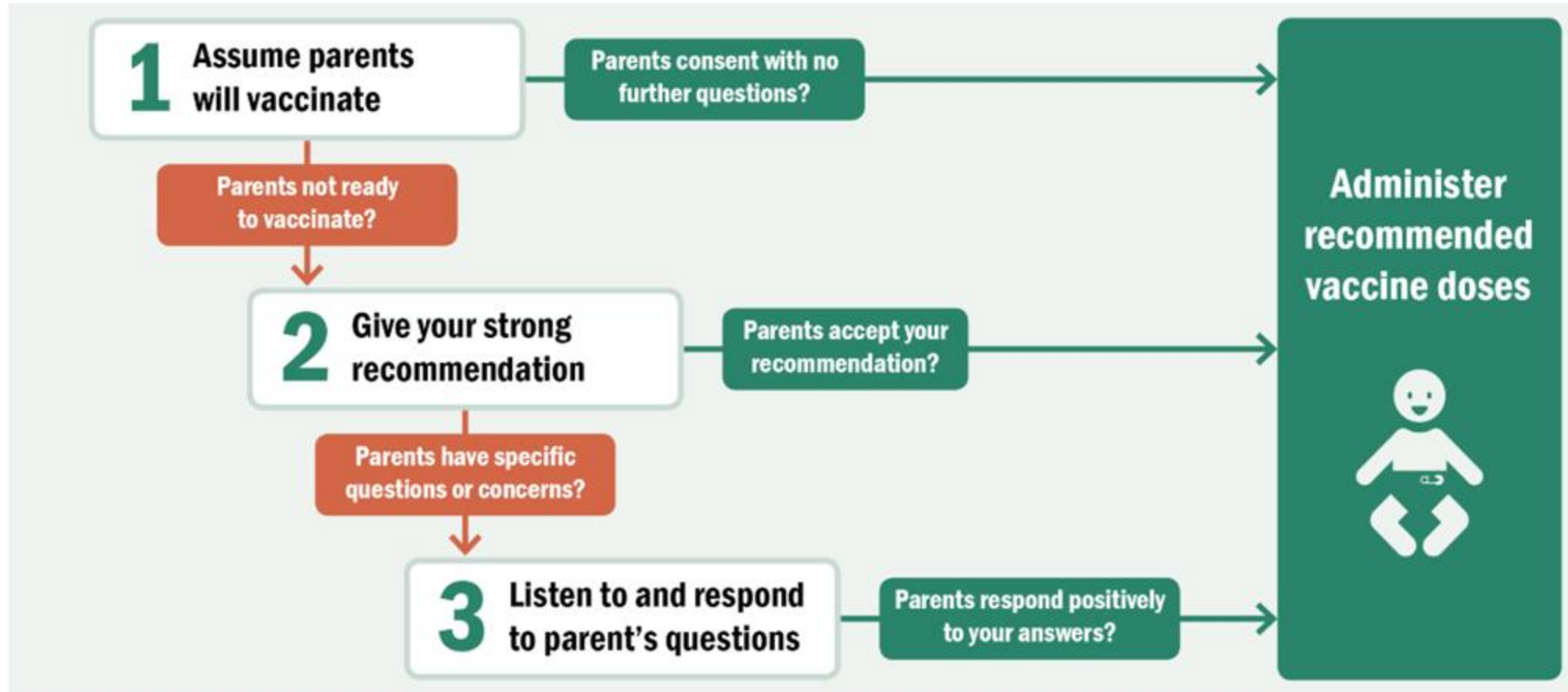
Beyond CWF

- Fluoride varnish
- Supplements
- Healthy DRINKING and eating

Objectives

- Two comments on the science—what are the comparisons?
- Why options are important
- **Practical pediatrician perspective—some conversations**

Analogous to Vaccines



This flow chart shows three easy steps to take when talking with parents about vaccines.

<https://www.cdc.gov/vaccines-children/hcp/conversation-tips/index.html>

NOTHING without Risk

Center Role in Systemic Health

‘But it is Forced Medication?!’

- Examples of folic acid in flour, vitamin D in milk, or iodine in salt
- Can use reverse-osmosis filters to remove

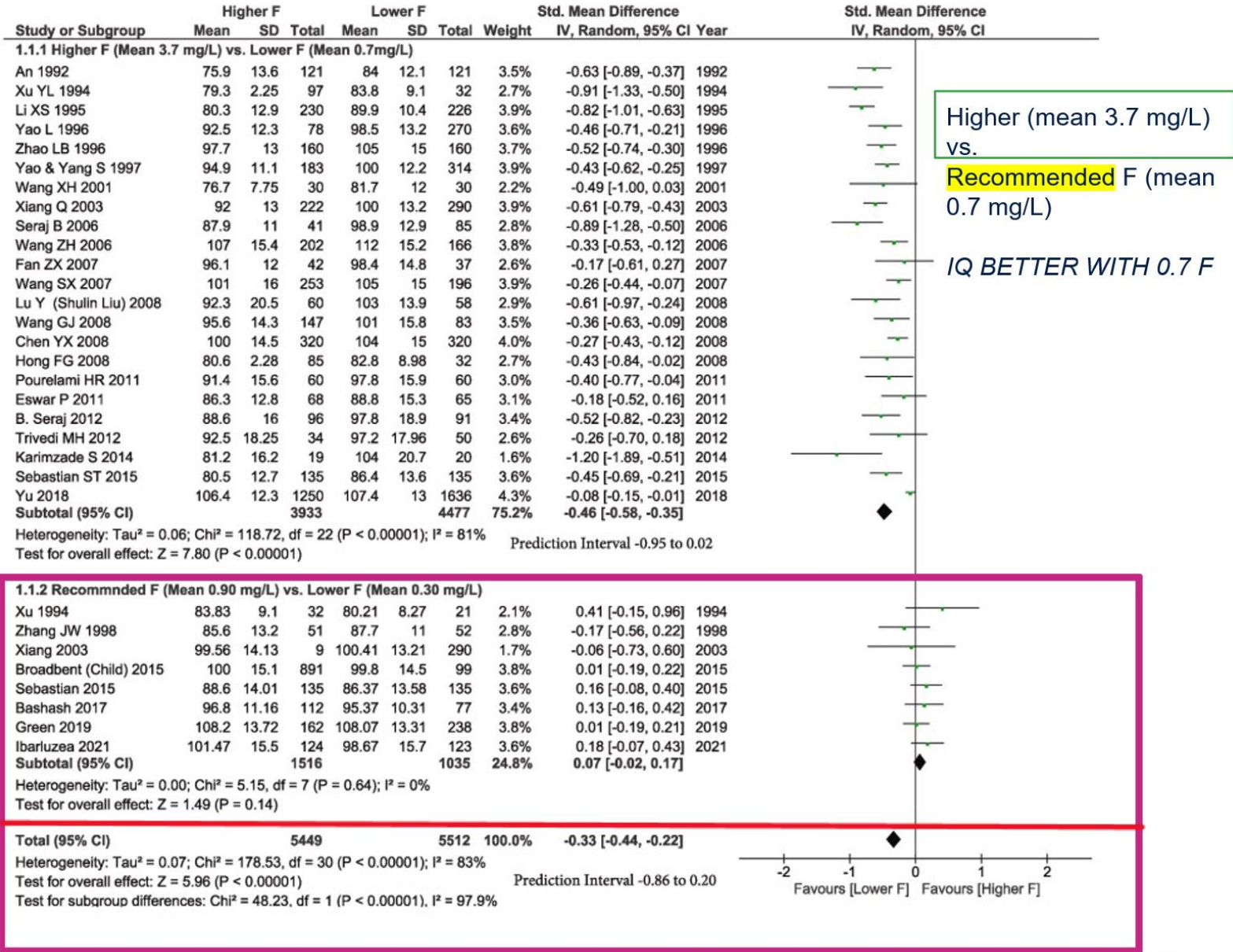
?IQ?

Re: Letter to the Editor of Public Health in response to 'Association.....'? between low fluoride exposure and children's intelligence: A meta-analysis relevant to community water fluoridation'.

Jayanth V. Kumar, Mark E. Moss, Honghu Liu, Susan Fisher-Owens. Public Health, 2025. Public Health, 2025. Volume 241, 2025, Pages 181-185.

Recommended F (mean 0.90 mg/L vs Lower F (mean 0.30 mg/L)

IQ not different



Overall favors appropriate F

“I heard CWF doesn’t help anymore?”

- Cochrane review—it DOES still have benefit, just not as much as before
- Calgary

Cochrane Report of CWF (Theozor-Ejiofor Z 2024)

- “beneficial effect not as pronounced—but *still is a benefit*”
- A co-author of the study, Dr. Anne-Marie Glenny, was quoted as saying, “...**no** evidence to stop fluoridation programs”

‘Is it Industrial Waste?’

- Fluoride is in some waste product, but that is not what is used in CWF
 - Regulated more closely than bottled water
- Tariffs
 - 80% made in US

“I heard it is Poison?”

- All about the dose: “Right for us at the right dose”

Should I be Fearful of Fluorosis?

Normal



Questionable



Very Mild



Mild



Moderate



Severe



Personal Correspondence, Correction to https://www.fluoridesandhealth.ie/assets/files/documents/fluoridation_forum.pdf/

‘What about Choice?’

- Hydroxyapatite?
- Can I take it out?
- Do children have a choice to be born poor? With no healthy food options? Into a family who can't afford a toothbrush and toothpaste?
- Take the decision to the end

9-year-old girl dies after going under anesthesia for dental procedure at San Diego office

The March 18 procedure was done at Dreamtime Dentistry. A dentist at the office had been investigated after a patient nearly died in 2016.



#WeArePreventionists!

Thank You!

Susan.Fisher-Owens@ucsf.edu

likemyteeth.org



UNIVERSITY *of* WASHINGTON

Shared Decision Making with Parents and Caregivers

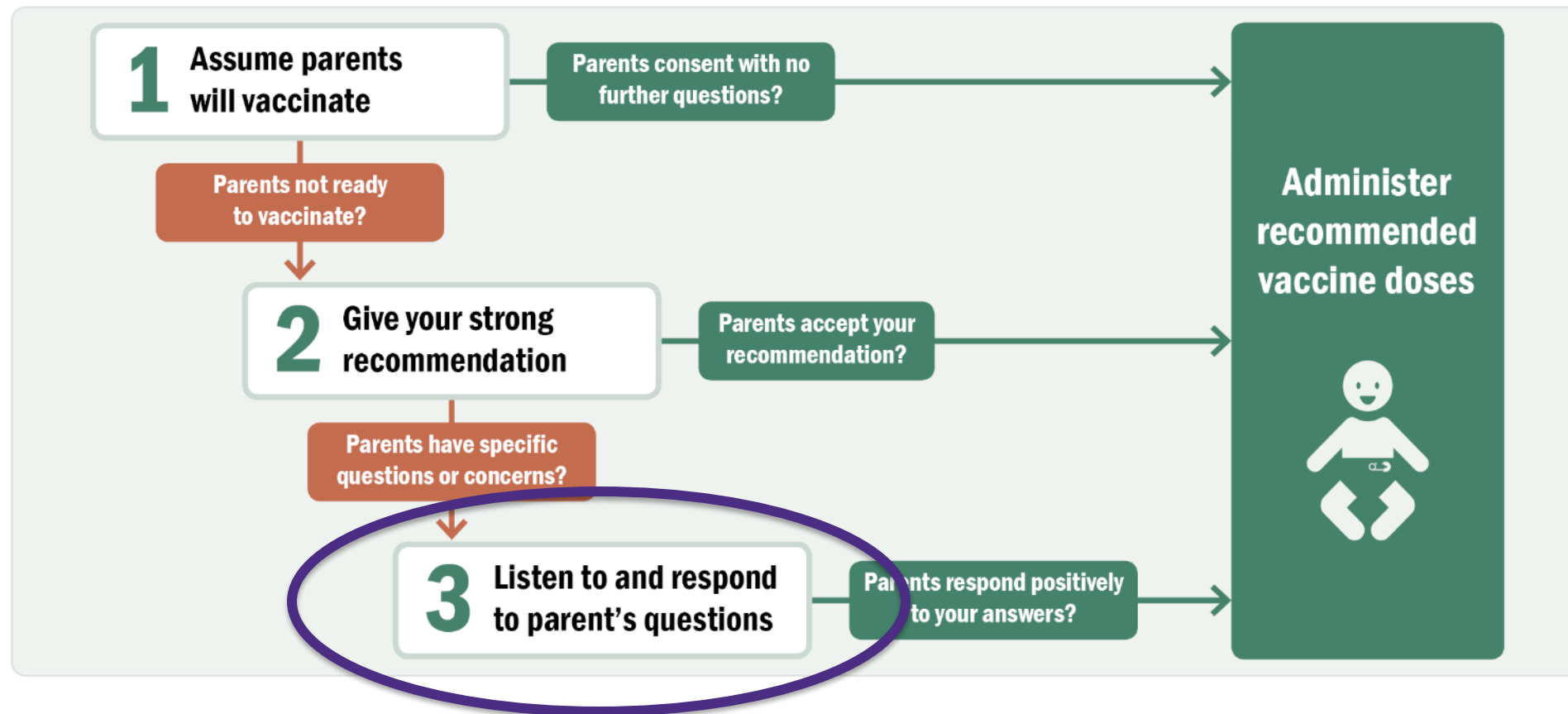
Cameron L. Randall, PhD

Assistant Professor of Oral Health Sciences

I have no financial relationships relevant to this presentation to disclose.



Addressing Hesitancy via Immunization-Related Approaches



<https://www.cdc.gov/vaccines-children/hcp/conversation-tips/>

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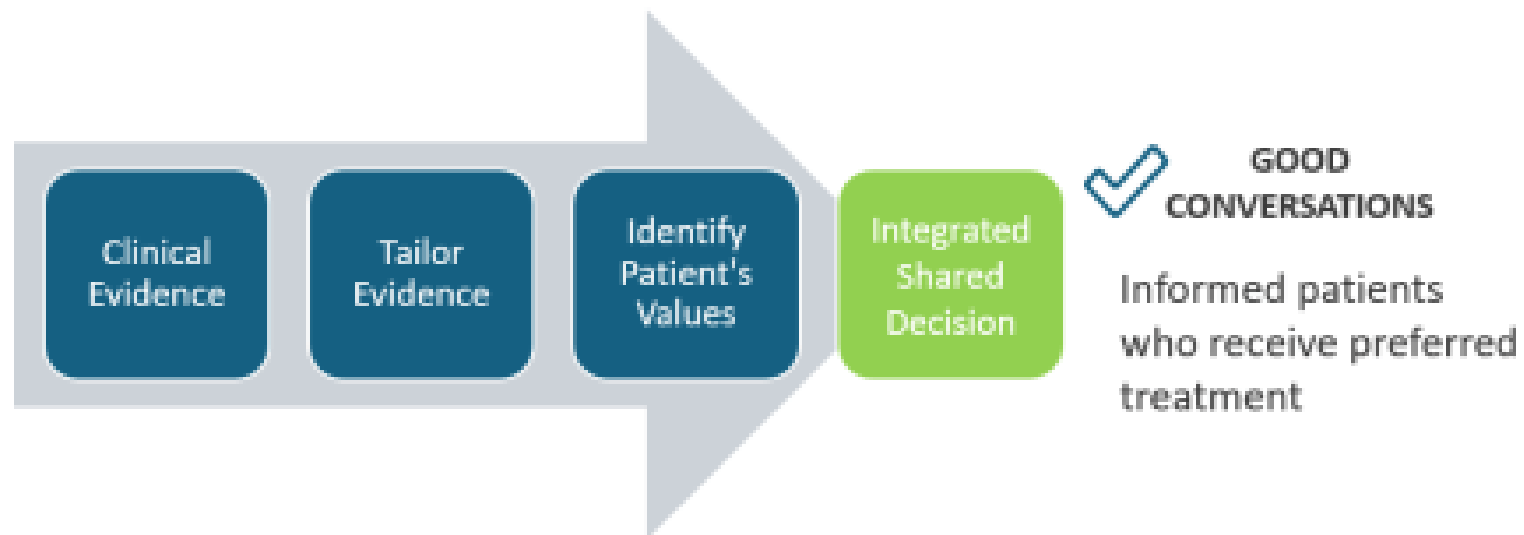
Shared Decision Making (SDM)

“a collaborative process in which patients and clinicians work together to make healthcare decisions informed by evidence, the care team’s knowledge and experiences, and the patient’s values, goals, preferences, and circumstances”

“family members and caregivers also play an important role in shared decision making”

SDM

The Shared Decision Making **Process**



Benefits of SDM

- > Greater participation in care
- > Improved health-related knowledge
- > Reduced decisional conflict
- > Better adherence
- > Stronger patient-caregiver-provider relationships
- > Increased satisfaction



Models for SDM: Four-Step Framework

1. Consider medically reasonable options
2. If SDM is indicated, consider whether one of the options is more favorable than the others
3. Seek to understand the family's values and preferences (family preferences can change)
4. Use clinician-guided or family-guided approach based on information from the first 3 steps



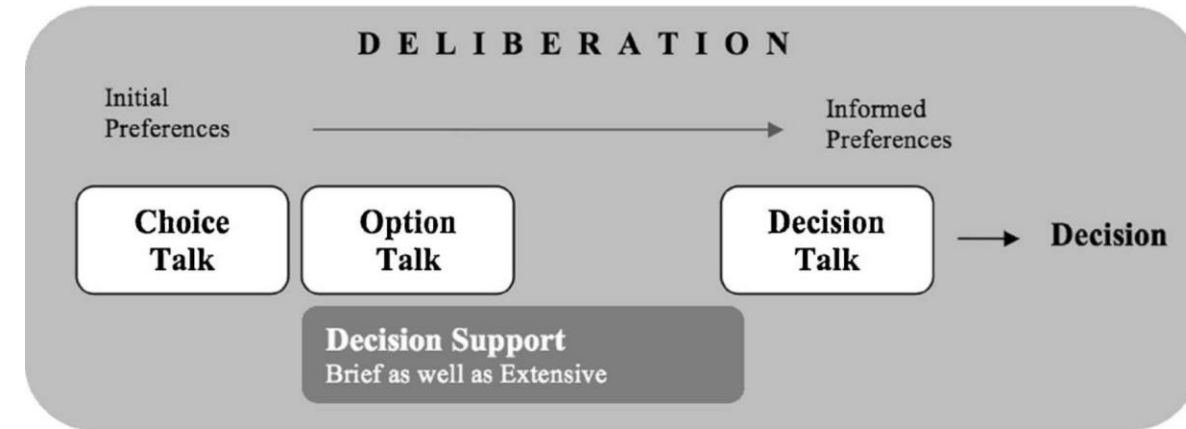
SDM Model of Care

“SDM depends on tasks that help *confer agency* ... by
(1) providing information and
(2) supporting the decision-making process”

[pmc.ncbi.nlm.nih.gov/articles/PMC3445676](https://pubmed.ncbi.nlm.nih.gov/articles/PMC3445676)



Elwyn et al., 2012



Key to the figure

Deliberation	A process where patients become aware of choice, understand their options and have the time and support to consider ‘what matters most to them’: may require more than one clinical contact not necessarily face-to-face and may include the use of decision support and discussions with others.
Choice talk	Conveys awareness that a choice exists – initiated by either a patient or a clinician. This may occur before the clinical encounter.
Option talk	Patients are informed about treatment options in more detail.
Decision talk	Patients are supported to explore ‘what matters most to them’, having become informed.
Decision Support	Decision support as designed in two formats: 1) brief enough to be used by clinician and patient together and 2) more extensive, designed to be used by patients either before or after clinical encounters (paper, DVD, web).
Initial Preferences	Awareness of options leads to the development of initial preferences, based on existing knowledge. The goal is to arrive at informed preferences.
Informed Preferences	Personal preferences based on ‘what matters most to patients’, predicated on an understanding of the most relevant benefits and harms.

Key Components of SDM Models

- > Describe treatment options
- > Tailor information
- > Create choice awareness
- > Learn about the patient
- > Patient preferences
- > Deliberate
- > Make the decision

“Is this happening?”

The Therapeutic Alliance

the bond

agreement on
goals

agreement on
tasks

empathy

genuineness

active
listening

unconditional
positive regard

Bordin, 1979; Martin et al., 2000

W

Key Assumptions

1. Parents/caregivers want what is best for their children
2. Parents/caregivers are doing the best they can in their context, which includes:
 - knowledge
 - skills
 - attitudes, beliefs
 - social influences
 - resources



“Listen to and respond to parent’s questions”

Continuing the Conversation

1. Understand – acknowledge parent/caregiver wants the best
2. Ask parent/caregiver what they’re not sure about
3. Offer information that addresses their concern
4. Share stories that frame why you value fluoride as an option
5. Encourage parent/caregiver to continue considering, to gather additional information, and to continue the conversation

Lessons from Motivational Interviewing

A collaborative, evocative conversation...

Open-ended questions

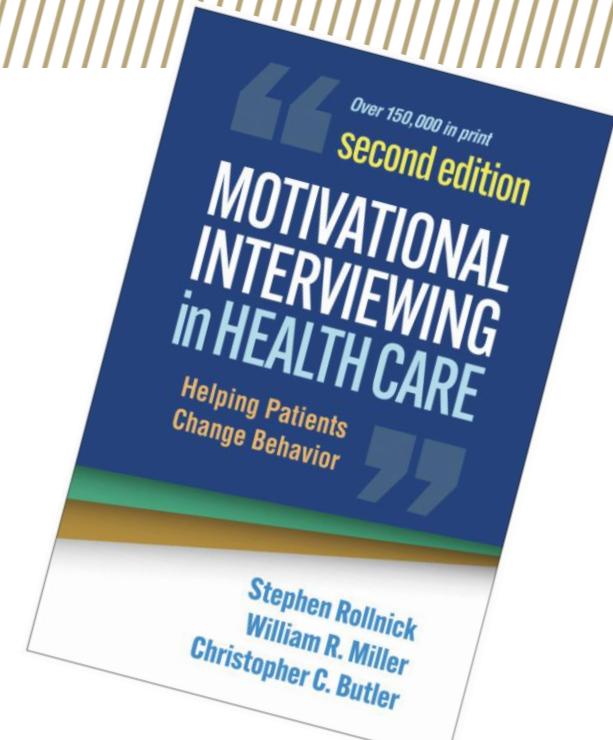
Affirmations

Reflection

Summaries

Evoking change talk

Ask – Tell – Ask



Using Motivational Interviewing in Dentistry

Discussing Fluoride
With A Parent

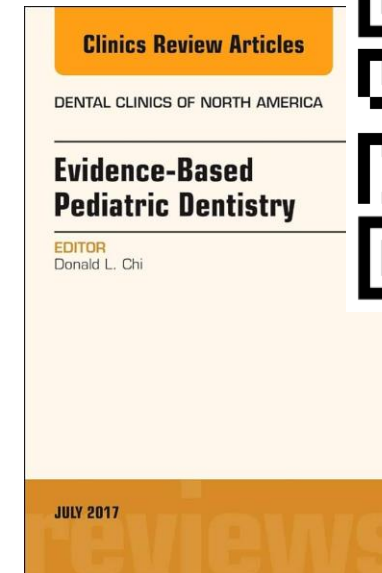
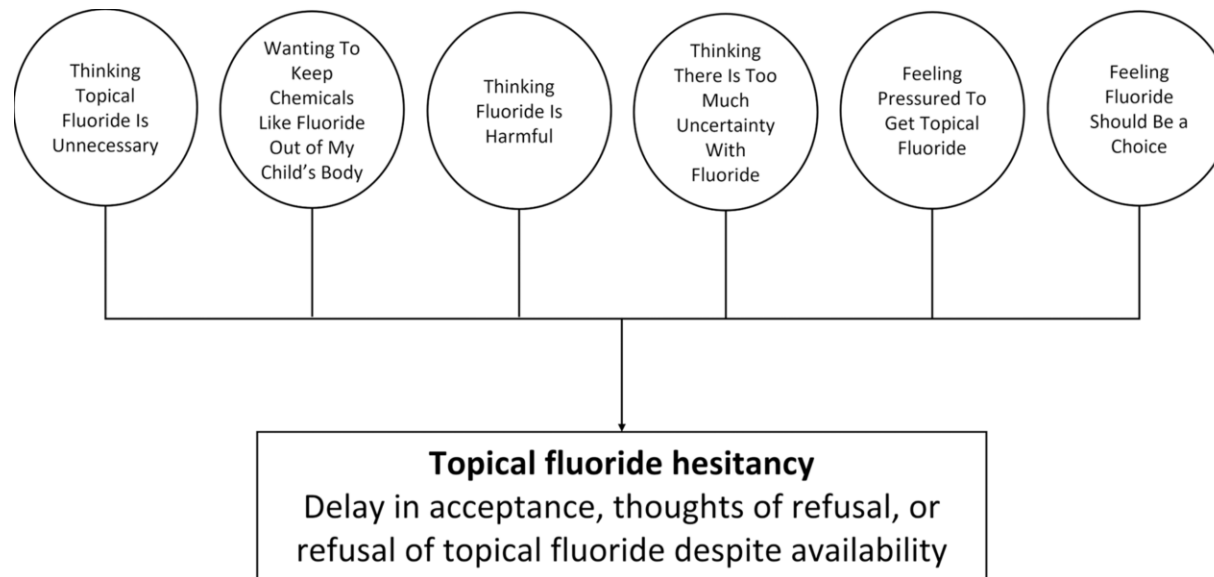


CareQuest
Institute for Oral Health.

carequest.org/resource-library/discussing-fluoride-parent

W

Considerations and Resources



pmc.ncbi.nlm.nih.gov/articles/PMC5783310

Prioritize risk-based, tailored, ongoing discussions following principles of SDM!

Chi et al., 2023





Thank you

Cameron L. Randall, PhD
CLR333@uw.edu
www.cameronlrandall.com

Conversation from the Field



Dr. Tim Wright



Dr. Mario Ramos

Your child's FLUORIDE SOURCES Survey

Child's Name: _____ Child's Age: _____

City/Town _____ Today's Date: _____

Home water supply: Municipal: _____ Well: _____

If municipal, name of water supply company: _____

If well water, has your water been tested for fluoride? ____yes ____no

If yes, Fluoride content determined: _____mg

PLEASE CHECK AS APPROPRIATE:

1. Fluoridated water supply: ____yes ____no

If yes, do you/child... ____drink ____cook ____use water filter

2. Does your child receive a daily fluoride supplement? ____yes ____no

If yes... ____0.25mg F ____0.05mg F ____1.0mg F

____with a multivitamin ____without multivitamin ____need refill

3. Processed beverages sources: (vary from 0-1.5 mg/L F)

Does your child consume...(check all that apply) ____soda ____juices

How many times per day? ____1-2 times ____4-6 times ____more than 6

4. Food Sources: (vary from 0.02-0.4mg/kg F)

Does your child consume...(check all that apply)

____breads ____cookies/crackers ____processed fruits/vegetables

5. Child's toothpaste (varies from 0-1000 ppm)

Does your child use a fluoridated toothpaste? ____yes ____no

How many times a day does your child brush with toothpaste?

____1 time a day ____2 times a day ____more than 2 times a day

Circle amount per use
on brush:



6. Fluoride mouthrinses, gels or prescription toothpaste: ____yes ____no

If yes, ____prescribed by dentist ____Over-the-counter

Thank you for completing the survey!

Do you have any questions you would like answered about fluoride use and your child's health?

Assessing Fluoride Sources

Zooming Out

- **Toothpaste:** Lawsuits at the state level against major manufacturers regarding F
- **Community water fluoridation:** Included as target in MAHA report, state bans for first time ever, more local activity than ever
- **Supplementation:** High likelihood that single-ingredient supplements will not be available on the market in the near future, consider other options



Questions?



Please use the Q&A box to pose your questions.

CE Evaluation



The link to the CE evaluation will also be sent via email. The evaluation must be completed no later than **Monday, September 22**. Certificates will be distributed via email by Monday, September 29.

For More Information

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



- <https://www.aap.org/en/news-room/fact-checked/fact-checked-fluoride-is-a-powerful-tool-for-preventing-tooth-decay/>
- <https://ilikemyteeth.org/>



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- <https://jamanetwork.com/journals/jama-health-forum/fullarticle/2838324?resultClick=1>
- <https://www.mychildrensteeth.org/resources-for-parents/>

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