I write to you today to discuss the issue of fluoridation that is before you.

Dental decay, also known as cavities, is the *most common* chronic disease affecting adults and children in the U.S. and around the world. It is an infectious and transmissible disease. It is multiple times more common than obesity, diabetes, and asthma.

A tooth with a cavity can develop an abscess. The infection from an abscessed tooth can get into the bloodstream, where it can cause a life-threatening situation such as a brain abscess, septicemia, heart infection, lung infection and collapse, infection of the eye socket, swelling in the throat that can restrict and close off the airway, and many other systemic infections. These can, and do, lead to death. A cavity is not just a hole in the tooth.

What follows is information that addresses the presentation that you will hear from Drs. Ladapo and Malin. Dr. Ladapo is the only state surgeon general in the U.S. to oppose water fluoridation. His statements about fluoridated water causing IQ deficits, ADHD, sleep disorders, thyroid issues, and other health claims are based off of studies conducted by a group of Canadian researchers, as well as Dr. Malin, that use a flawed method to estimate fluoride intake by testing the fluoride content of a single urine sample once every trimester of pregnant moms. Fluoride in urine only reflects the fluoride from the last drink of water or toothpaste from brushing. It is an inaccurate measurement that has been widely criticized in the scientific community worldwide.

Drs. Ladapo and Malin sat on a panel in Bartow, FL a few weeks ago opposite Drs. Steve Slott and I. You owe it to yourself to hear how a <u>presentation</u> between those two panels differed, and how Drs. Ladapo and Malin completely avoid up-to-date research, which isn't what they rely on.

- 1. My view: This article was written by one of our greatest minds in public health in the U.S., Dr. Scott Tomar. (this pdf was 21MB, so I just linked to it)
  - Dr. Tomar discusses the court case, the NTP review and meta-analysis, the 2024 Cochrane review, and the IQ studies that have been in the news. *Please read this short article*.
- 2. Below is a list of high-quality studies, systematic reviews, and meta-analyses that Drs. Ladapo and Malin totally ignored in their presentation. The study by Dr. Loc Do, letter E in the list, is the one that examined the same topic as Malin's study, which is currently being discussed, namely, ADHD. Dr. Do's paper was published two years before Dr. Malin's, and had 10 times the number of participants as hers, and has withstood the test of peer review by the scientific community at large.
  - A. <u>Harvard Meta-analysis</u> (2012) [often incorrectly referred to as the Harvard Study]: **No IQ Deficits** at fluoride level equivalent to U.S. water fluoridation

#### Note:

- This meta-analysis is included only because opponents, including UF researcher Dr. Ashley Malin, use it to claim it found a 7-point IQ drop.
- > They **purposely omit** that there were **no (0) IQ deficits** when the fluoride content of water was similar to U.S. fluoridation.
- It is not a high-quality study.

"Developmental Fluoride Neurotoxicity: A Systematic Review and Meta-Analysis"

In 2012, Anna Choi and Philippe Grandjean et al published a meta-analysis of IQ studies conducted in villages in China, Mongolia, and Iran

- The authors evaluated 27 studies to determine if <u>naturally occurring</u> fluoride in water at levels up to 15 times of that in water fluoridation (0.7ppm) showed any effect on IQ.
- The **low fluoride** control groups had fluoride in their water at levels equivalent to water fluoridation.
- The control groups showed no IQ effects.
- The **high fluoride groups** had fluoride in their water up to 11.5 ppm.
- The results showed that the high fluoride group had a 7-point deficit in IQ.
- While even the authors of this meta-analysis agreed that these studies were
  missing key information, had inadequate control for confounders, and used
  questionable methodologies, their results showed that fluoride at levels
  equivalent to water fluoridation had no effects on IQ.

### B. New Zealand: (2015) No IQ deficits

"Community Water Fluoridation and Intelligence: Prospective Study in New Zealand" Broadbent, J., et al., Am J Public Health. 2015;105: 72–76

A longitudinal study conducted in Dunedin, New Zealand, was published in 2015. Dr. Jonathan Broadbent et al. followed two cohorts of children over a **38-year period** from fluoridated and non-fluoridated areas to evaluate any relationship between fluoridation and IQ.

- Approximately 1000 children were recruited for this study.
- IQ was measured repeatedly between the ages of 7-13 years old and again at age 38 years.
- A 95.4% retention rate was observed among children after 38 years of follow-up.

**Results**. No clear differences in IQ were noted due to fluoridated water exposure.

**Conclusions**. "These findings do not support the assertion that fluoride in the context of water fluoridation programs is neurotoxic. Associations between very high fluoride exposure and low IQ reported in previous studies may have been affected by confounding, particularly by urban or rural status."

### C. Sweden: (2021) Fluoride at water fluoridation levels = **No IQ deficits**

"The Effects of Fluoride in the Drinking Water" Aggeborn, L, Öhman, M., <u>Journal of Political Economy</u>, Volume 129, Issue 2, February 2021, pp. 337-647

A national study by two Swedish economists, Linuz Aggeborn and Mattis Öhman, was conducted to evaluate fluoride levels in the water and its impact on the labor market.

This study was published in the Journal of Political Economy, the world's most prestigious economic journal.

#### "Results":

- 1. First, we reconfirm the long-established positive effect of fluoride on dental health.
- 2. Second, we estimate a **zero-effect** on cognitive ability in contrast to several recent epidemiological studies.
- 3. Third, fluoride is found to increase labor income. This effect is foremost driven by individuals from a lower socioeconomic background.

### D. Spanish Study: (2022) Positive impact on IQ with water fluoridation

"Fluorinated water consumption in pregnancy and neuropsychological development of children at 14 months and 4 years of age"

L. Santa-Marina et al, Environmental Epidemiology: <u>Environmental Research 207 (2022)</u> 112181

**Conclusions**: "Prenatal exposure at the levels found in fluorinated drinking water may exert a beneficial effect on the development at 4 years of age. At low doses, fluoride could present a dose-response pattern with a beneficial effect."

### E. Australian study: (2023) No IQ/Executive Function (ADHD) changes

"Early Childhood Exposures to Fluorides and Child Behavioral Development and Executive Function: A Population-Based Longitudinal Study"

Do, L.G., et al, <u>J Dent Res. 2023 Jan;102(1):28-36</u>

#### **Conclusions:**

"Exposure to fluoridated water during the first 5 years of life was not associated with altered measures of child emotional and behavioral development and executive functioning."

### F. Italian Systematic Review and dose-response Meta-analysis: (2023) No IQ changes

"Fluoride exposure and cognitive neurodevelopment: Systematic review and doseresponse meta-analysis"

Federica Veneri, Linda Birnbaum, et al

https://www.sciencedirect.com/science/article/pii/S0013935123000312

- Of special interest is that <u>Linda Birnbaum</u>, former director of NTP and outspoken opponent of fluoridation, co-authored this systematic review.
- > The review found that only one study had a low risk of bias and that fluoride at water fluoridation levels did not impact IQ at all.

#### G. U.S. Meta-analysis – No IQ changes

"Association between low fluoride exposure and children's intelligence: a meta-analysis relevant to community water fluoridation", Jay V. Kumar, Mark E. Moss, Honghu Liu, Susan Fisher-Owen, Public Health Volume 219, June 2023, Pages 73-84

#### **Conclusions:**

- ➤ "These meta-analyses show that fluoride exposure at the concentration used in CWF [0.7 ppm] is not associated with lower IQ scores [and below 1.5 ppm]."
- "However, the reported association observed at higher fluoride levels in endemic areas [China, Iran, India] requires further investigation."

### H. Australian Study: (2025) No IQ Changes

"Early Childhood Exposures to Fluorides and Cognitive Neurodevelopment: A Population-Based Longitudinal Study"

Do, L.G. et al., J Dent Res., 2025 Mar

### **Conclusions:**

- "This population-based follow-up study has provided consistent scientific evidence that early-life exposure to fluoride was not negatively associated with cognitive neurodevelopment."
- ➤ "The findings, in combination with the current body of knowledge, provide assurance that the currently practiced WF [water fluoridation] programs are both effective and safe for young children."

# 3. "Flawed MIREC fluoride and intelligence quotient publications: A failed attempt to undermine community water fluoridation"

This paper delves deeply into the problems with the studies by the Canadian researchers who are using the MIREC biobank of tissue samples to attempt to draw associations between fluoridated water and the kitchen sink. Dr. Malin's study on ADHD follows this problematic pattern as well. Contributions by Dr. Andrew Rugg-Gunn are covered in detail in #5 below, and in the attachment that he emailed me for inclusion here.

### 4. "Fluoride and children's IQ: evidence of causation lacking"

This commentary was published in response to the risk of bias that the National Toxicology Program's (NTP) report used in studies that it included. A similar systematic review (Taher et al.) to the NTP report used the same risk of bias assessment of the studies that it included.

Both Taher and the NTP report classified studies that were *low quality/high risk of bias* as high quality/low risk of bias. This is one of the reasons that the National Academies of Sciences, Engineering, and Medicine (NASEM) rejected the NTP draft of their report twice. The NTP group had asked NASEM to peer review their draft reports. NASEM is highly regarded as the top peer review group in the country. Both the NTP and NASEM are within the National Institutes of Health. The article by Tomar in #1 above discussed this in more detail. After failing the NASEM

peer review for the second time, the NTP abandoned NASEM and searched for another peer review group of their choosing.

The two authors of this commentary are highly regarded for their analytic style. Anne-Marie Glenny is one of the primary authors of the 2024 Cochrane review on water fluoridation, which I will discuss shortly. Deborah Moore is a co-author of the CATFISH study, which was the main publication included in the 2024 Cochrane review.

The authors of the commentary clearly identified the *misclassification* of studies used in the NTP/Taher papers. Their criticisms are widely accepted in the scientific community.

### 5. Email from Dr. Andrew Rugg-Gunn (attached)

Dr. Rugg-Gunn is a foremost authority on fluoride measurements and has published on fluoride analysis in urine.

Dr. Rugg-Gunn points out several issues with the NTP meta-analysis that was published by Dr. Kyla Taylor in <u>JAMA Peds</u>, 2024:

"I am concerned about the misuse and misinterpretation of data on fluoride excretion in urine recorded either by 24 hour collection or by spot samples."

"...Taylor (2024) states in the Discussion on page E8: Studies using individual-level exposures were assessed in the regression slopes meta-analysis, which included 13 studies with urinary fluoride measures, a more precise exposure assessment measure than group-level exposures. Unlike drinking water levels, individual-level urinary fluoride concentrations include all ingested fluoride and are considered a valid estimate of total fluoride exposure. 106,107"

"This is clear misuse of reference 106 (Villa 2010), a paper for which I was co-author. Taylor's paper clearly says 'individual-level exposures'; contrary to Villa's conclusions."

"This conclusion was stated clearly in the review by Rugg-Gunn (2011):

Plots of daily urinary fluoride excretion against total daily fluoride intake suggest that daily urinary fluoride excretion is suitable for predicting fluoride intake for groups of people, but not for individuals."

<u>To summarize</u>, Taylor used spot urine sample studies, claiming that "studies using individual-level exposures are a more precise measure of exposure assessment than group-level exposures."

The references Taylor used to support this claim were actually just the opposite of what she stated. This is just one of many reasons why the NTP report and meta-analysis are considered flawed by the scientific community worldwide.

### 6. Naturally occurring fluoride levels in Florida at optimal levels:

<u>This article</u> discusses the fluoride levels in Jacksonville/Duval County that are naturally fluoridated at optimal levels. Almost <u>12 million people</u> in the U.S. have naturally fluoridated water at optimal or above optimal levels of fluoride.

If there were any health issues associated with optimally fluoridated water, we would certainly see them in these 12 million people, including 1 million of whom reside in Jacksonville/Duval County.

### 7. Show us the IQ deficits:

Drs. Ladapo and Malin were invited to appear before the Bartow, FL City Council on February 18, 2025, to sit on a panel and present the harms associated with water fluoridation. Drs. Steve Slott and I were invited to discuss the scientific literature regarding water fluoridation from all perspectives.

During that meeting, Dr. Slott and I presented the information below from Bartow and Zephyrhills elementary schools in **a.** below.

We set out to examine standardized testing and school grade rankings to determine if we could identify any patterns between fluoride levels in water fluoridation, naturally low fluoride levels, and naturally occurring fluoride levels above the optimal level. These are two measures that are looked at to see how our kids are doing in school.

**a.** Below is the data we derived from the Florida Department of Education (FL DOE) for school scores in fluoridated Bartow versus non-fluoridated Zephyrhills. We included information from naturally fluoridated areas in Jacksonville/Duval and Miami-Dade County.

### **Community Water Fluoridation vs. IQ Levels in the Developing Brain**

- Bartow, FL elementary schools' public shows there is no correlation at all between IQ and CWF.
  - Numerous grade levels, especially elementary schools, achieving the highest possible grade level consistently over a
    large time span, you can immediately draw a conclusion, based on the numbers, that there is no correlation between
    0.7PPM of fluoride in public water and IQ levels in children.
- · Other examples:
  - Duval County, with a heavily naturally fluoridated aquifer, and community water fluoridation #1 Elementary
     School in the State of Florida.
  - Miami Dade County is home to 6 of the top 10 proving no correlation exists, and also backing the fact that there
    is no scientific evidence or study backing any sort of claim that fluoride, at the optimal level 0.7PPM has any
    impact whatsoever on child IQ. https://www.fldoe.org/accountability/accountability-reporting/school-grades/
- Of the elementary schools in Bartow, FL that have public data released to the Florida Department of Education regarding
  testing scores, we can see a strong presence of A, B, and some C grades, with one D. This is a pattern that can be tracked
  throughout counties and individual schools all across the State of Florida.
  - Given this data, the proponents of community water fluoridation seek an effort to **not prove any sort of inverse** correlation, but rather that there is no correlation at all.

Below is a table that shows the two elementary schools in fluoridated Bartow (highlighted) and two from non-fluoridated neighboring Zephyrhills. All schools were Title I, and neither were charter schools.

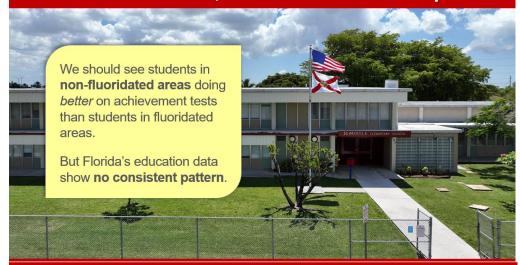
Even though the kids in Bartow's two schools were rated higher than the Zephyrhills schools, we aren't claiming that fluoridation is making them smarter. We *are* showing a lack of correlation between fluoride levels and kids' performance.

Dice	District Number	5000/W	Shool Nome Number	Gran Peres	hromation	67-8023 B356/In6 67-8022	6734 2021	Crad (1900)	6794 6734	Grad 1	homotions.
51	PASCO	0091	WEST ZEPHYRHILLS ELEMENTARY SCHOOL	С	D	F	С	С	D	D	С
51	PASCO	0132	WOODLAND ELEMENTARY SCHOOL	D	С	С	С	С	С	D	С
53	POLK	0941	BARTOW ELEMENTARY ACADEMY	В	В	В	В	Α	Α	Α	Α
53	POLK	0961	FLORAL AVENUE ELEMENTARY SCHOOL	С	С	С	С	С	В	В	С

https://www.fldoe.org/accountability/accountability-reporting/school-grades/

**b.** Next, we examined a cluster of counties in Florida with similar demographics. The number of highly rated schools speaks for itself for fluoridation not dumbing down kids.

## If fluoride lowers IQs, we should see a clear pattern



## **Compare student performance in these counties**

Counties	English Skills	Math Skills	Science Skills
CHARLOTTE	54	56	58
DESOTO	35	43	40
HARDEE	48	49	46
LEE	50	53	51
MANATEE	53	59	56
SARASOTA	64	68	68



(Source: These 2023-24 achievement average scores/grades are posted by county school district on the website of the Florida Department of Education in a downloadable Excel spreadsheet. Higher numbers represent higher achievement levels. These scores were updated through September 18, 2024.)

Mostly not fluoridated

Mostly fluoridated

### **Compare student performance in these counties**

Counties	English Skills	Math Skills	Science Skills
CHARLOTTE	54	56	58
DESOTO	35	43	40
HARDEE	48	49	46
LEE	50	53	51
MANATEE	53	59	56
SARASOTA	64	68	68

3 of the top 4 counties in average English, Math and Science scores are mostly fluoridated.

(Source: These 2023-24 achievement average scores/grades are posted by county school district on the website of the Florida Department of Education in a downloadable Excel spreadsheet. Higher numbers represent higher achievement levels. These scores were undisted through Sentember 18 2024.1

Mostly not fluoridated Mostly fluoridated

https://www.fldoe.org/accountability/accountability-reporting/school-grades/

City	Fluoride level ppm	Average Composite ACT
Warsaw	0.22	16.6
Hermann	0.2	22.3
Nevada	0.21	21.4
Linn	0.25	18.8
'Tipton	0.39	17.6
Eldon	0	21.8
Doniphan	0	20.1
Houston	0	18.3
Average		19.6

**c.** Lastly, I collaborated with a colleague in Missouri to examine standardized scores (composite ACT [cACT]) from areas with naturally fluoridated water at low levels (≤0.6 ppm) and high levels (≥0.6 ppm). We omitted all communities that adjusted their naturally low fluoride levels to the optimal of 0.7 ppm.

The cACT scores can be seen to be virtually the same, regardless of whether the fluoride level in water was low or high, which included levels of fluoride up to 2.5 ppm

Natural Fluoride Levels ≤0.6 ppm (low) vs ≥ 0.6 ppm

(High)

(Missouri <u>Average</u> 2024 ACT Scores = 19.8)

LOW HIGH

	Fluoride	Average			
City	level	Composite			
	ppm	ACT			
	PP	7.0.			

Average		19.54
Anderson	1.15	16.6
New Bloomfield	0.68	21.2
Auxvasse	0.90	20.1
Fulton	1.02	19.4
Warrenton	1.39	21.2
Wright City	1.46	19.0
Laddonia	0.82	17.3
Mexico	1.21	18.5
Ashland	0.82	19.9
Centralia	1.29	21.0
Hallsville	1.62	21.5
Arcadia	1.65	19.7
Winfield	2.5	19.0
Troy	2.31	20.7
Wellsville	0.23	17.2
Middletown	1.7	17.2

# 8. Common claims about water fluoridation: medication, mass medication, choice, forced medication.....

I've attached a document with several common claims that are made with the number of court cases that they have been heard. The number of cases is in parentheses. In all, including the recent court case against the EPA, there have been 109 lawsuits filed in U.S. Courts to cease fluoridation since it began in 1945. None of the claims made in those lawsuits were ever deemed to apply to water fluoridation. Water fluoridation has *never* been ordered to cease.

Here is a <u>link</u> to one of the lawsuits from Florida that I find particularly interesting in how the judge framed Mr. Quiles **freedom to choose**:

"Importantly, the city proposes to fluoridate the water before it enters each household in the city; it is not seeking to introduce the mineral directly into Quiles's bloodstream. Therefore, the city's fluoridation of its water stops with Quiles's water faucet. The city is not compelling him to drink it.

He is free to filter it, boil it, distill it, mix it with purifying spirits, or purchase bottled drinking water. His freedom to choose not to ingest fluoride remains intact."

### 9. What happens when water fluoridation is stopped?

The real disaster is when communities/countries cease fluoridation. Opponents state that there is very little benefit from water fluoridation, if at all. Dr. Ladapo echoes this. However, they are sorely mistaken. Four studies in the recent past are exciting from the standpoint that they demonstrate what happens when fluoridation is stopped, but fluoridated toothpaste is still being used. It is a very sad state of affairs. I have pasted frames from a slide deck to demonstrate what happened in Juneau, Alaska, Calgary, Alberta, and Israel when fluoridation was stopped.

### Juneau, Alaska

Fluoridation was voted out by their city council in 2007 based on claims made by fluoridation opponents. Like all cessations, it is never about the science. The benefits of fluoridation are well established in the literature and in practice.

### Alaska: Two cities were once fluoridated

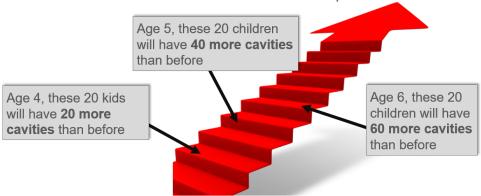
- When both cities were fluoridated, Juneau (\$344) and Anchorage (\$369) had similar average costs for treating cavities in low-income children.
- In 2007, Juneau officials ended water fluoridation. But the city of Anchorage continued fluoridation and still does so.
- Researchers studied what effect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

## 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

### Alaska: Preschoolers bore the brunt

- Preschool-age children (under age 6) in Juneau were especially hard hit by tooth decay.
- After fluoridation ended in Juneau, preschoolers needed an average of 1 additional cavity-related procedure each year.
- Meanwhile, in Anchorage, the average number of cavity procedures for preschool-age kids was unchanged.



(Source: J. Meyer et al., "The Impact of Water Fluoridation on Medicaid-Elioible Children and Adolescents in Alaska," Journal of Primary Prevention, 2022.)

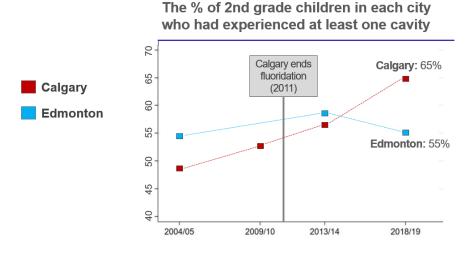
### Calgary, Alberta

Calgary's city council voted out fluoridation in 2011 for reasons identical to that of Juneau. Edmonton is a city 90 miles to the north of Calgary. Both were fluoridated until 2011. After Calgary ceased, Edmonton continued to fluoridate.

The major cavity increases in Calgary can be seen after 9 years to not only surpass those in Edmonton, but to continue its exponential increase. In addition to the increases in cavities, hospitalizations for full mouth reconstruction of severe cavities in children also skyrocketed as did hospitalizations for dental infections. Antibiotic administration in hospitals for dental infections rose by 700%.

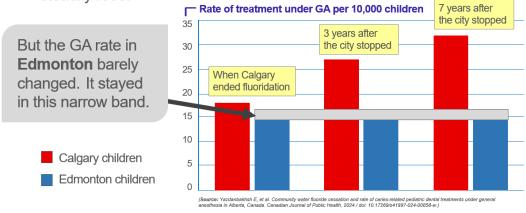
The researcher that was conducting these studies will not be doing another study to follow-up on what happened after 2018/2019. We can all imagine where the rate of cavities is now. However, she was threatened severely by fluoridation opponents and fears for her life. She isn't willing to subject herself to that again.

## Canada: Comparing decay trends in two cities



## **GA-related treatment rose steadily after cessation**

The Canadian city of Calgary ceased water fluoridation in 2011.
 Afterward, its rate of dental treatment with general anesthesia (GA) steadily rose.



## 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.



(Source: Lee HH, et al. Trends in death associated with pediatric dental sedation and general anesthesia, Paediatric Anesthesia, 2013; 23(8):741-6. doi: 10.1111/pan.12210)

# 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

### Israel

Israel's Health Minister Yael German cancelled fluoridation in 2014. He was opposed to fluoridation. It had nothing to do with science.

The incoming Health Minister, Ya'acov Litzman promised to restore it. Delays have occurred in the re-fluoridation process, which has been impacted by obtaining Knesset approval (which has been obtained), COVID-19, and now the war. Funding is also being secured to restart it. Contrary to what opponents are saying, *Israel has not banned fluoridation*.

## Israel: Fluoridation had a positive impact

- Israel passed a fluoridation law in 2002. But the law was discontinued in 2014.
- In place of fluoridation, Israel provided all children with free dental care.
- A 2023 study examined the impact of both approaches:

Was it shown to reduce cavity treatment costs?

Water fluoridation: YES

Free dental services:

(Source: Levy DH, et al. Association of Nationwide Water Fluoridation, changes in dental care legislation, and caries-related treatment needs: A 9-year record-based cross-sectional study, Journal of Dentistry, 2023; 134:104550.)

## Israel: Fluoridation had a positive impact

- Giving free dental care is suggested by opponents of fluoridation
- This data clearly demonstrates that free dental care does not replace prevention
- There is no substitute for water fluoridation.

Was it shown to reduce cavity treatment costs?

Water fluoridation: YES

Free dental services:

NO

(Source: Levy DH, et al. Association of Nationwide Water Fluoridation, changes in dental care legislation, and caries-related treatment needs: A 9-year record-based cross-sectional study, Journal of Dentistry, 2023; 134:104550.)

## Israel: In the process to resume fluoridation

Health Minister Yael German canceled fluoridation (2014)

New Health Minister Ya'acov Litzman (2017) promises to restore it

It has not been banned as opponents have stated



(Source: The Jerusalem Post, August 22, 2017

### 10. Cochrane 2024 review:

The Cochrane reviews are very different from typical public health reviews. They have very strict criteria for studies to be included in their review. Basically, the York review was done first in 2000. Cochrane was charged with updating the literature since that time in 2015 and 2024. The evaluation model that they used was the medical protocol for evaluating studies. This is the protocol that is used for drug trials. It is not appropriate for water fluoridation. They would have used their public health intervention protocol, but couldn't because they were updating the York 2000 review which used the medical model.

This review was an update to their 2015 <u>review</u> which was an update to the York 2000 <u>review</u>. The Cochrane 2024 hyperlink is to their Plain Language Summary (PLS), which they include in each of their studies, so that decision-makers in every part of the world can understand their findings without having to delve into the entire document. The 2015 review is the full document, but you can get to the PLS by clicking on the side tab.

I am very familiar with the authors of both the 2015 and 2024 reviews as we met in London in 2015, at the invitation of the British Fluoridation Society, after Cochrane's 2015 update had been released. The PLS contained scientific terminology, i.e. high bias, etc., which the opponents of fluoridation were using in the U.S. to convince community officials to discontinue fluoridation. In our meeting, this was discussed with them along with scientific concerns by the academicians, researchers, and deans of dental schools from around the world. At the end of the meeting, the Cochrane group took the unprecedented move to rewrite their PLS totally. This put an end to these cessation efforts based on their PLS. A <u>critique</u> of their 2015 paper was written after that meeting, headed up by Andrew Rugg-Gunn. All of us in attendance were coauthors.

The 2024 review stated that there were "modest" cavity reductions from water fluoridation. This is based on one study that met their strict criteria that they use. Unfortunately, the study that was used had serious issues with it, not the least of which was flooding of one of the two water plants that was providing fluoridated water to the communities that were restarting fluoridation. Even though that water plant was offline for ~1 year, the study continued.

Additionally, the method of measuring the cavities between the fluoridated community vs non-fluoridated community was not the same as contemporary studies are done. The British Fluoridation Society and American Fluoridation Society had a Zoom call with the Principal Investigator (PI) and the lead author of the study to discuss this. The study is titled **CATFISH** (Cumbrian Assessment of Teeth a Fluoride Intervention Study for Health). The PI was adamant that the reported cavity differences were as the study was proposed and approved. He would not agree that the percentage of cavity surfaces prevented was a finding that he would/could report. Even though the data was there to calculate it, as we had done, he wouldn't even agree with our numbers. So, after that call, we published a <u>paper</u> on the study's findings. With all of the issues with the study, the percentage of cavity reductions were equivalent to cavity reductions that we find in contemporary studies here and around the world.

Opponents of fluoridation are using the 2024 Cochrane review to say that cavity reductions are greatly reduced from fluoridation, if there is any benefit at all. Quite honestly, that is humorous as they've never admitted that fluoridation was effective. At any rate, we are tasked with educating decision-makers with the facts about CATFISH.

The bottom line is that the studies conducted by Dr. Malin and the Canadian group of researchers using spot urine samples are flawed. The first published study that made a big splash in the media was published in <u>JAMA Peds</u> in 2019. The Canadian researchers **have never released their data** for independent analysis. A group of 30 researchers and academicians from around the world wrote to the NIH requesting it. The keeper of the data in Canada has never allowed it to be evaluated by anyone else. NIH funding now includes that researchers must share their data for independent analysis. If you have nothing to hide, there is no reason to keep it to yourself.

No developed country in the world is ceasing water fluoridation because of the California court case, the NTP review and meta-analysis, or the Cochrane review. These countries have reviewed all the literature and dismiss the Canadian studies, along with Dr. Malin's, as using flawed methodology. The outstanding research included above continues to be the gold standard of research, one that withstands the scrutiny of the world's peer review community.

Thank you for your time in reading this lengthy email. Please do not hesitate to call or email me if I may be of assistance.

Warm regards,

Johnny Johnson, Jr., DMD, MS Pediatric Dentist Diplomate, American Board of Pediatric Dentistry Life Fellow, American Academy of Pediatric Dentistry

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The American Fluoridation Society is a group of healthcare providers who help provide communities with the science of water fluoridation from around the world. We do not accept any income for our work. This is our time in life to give back for the gifts that God gave us to provide for others.