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# COMMUNITY WATER FLUORIDATION'S LEGACY:

## Protect It or Lose It

By Johnny Johnson, DMD, MS  
President, American Fluoridation Society

If you think it's time for your town to fluoridate its water supply, or even more urgent, if a local anti-fluoridation/vaccination activist is pushing for your city to discontinue community water fluoridation, who are you going to call? Indeed, the ADA and your state and local dental societies are at the top of the list. However, you may not be aware of an experienced team with the resources needed to prepare you for the battle — the American Fluoridation Society.

Named after the decades-old British Fluoridation Society, I along with a small group of medical and dental professionals assembled to form the AFS in 2014. Our primary goal is to strengthen the ability of our colleagues and health department staff to provide persuasive, evidence-based information to city councils, water utility boards, and other community water fluoridation (CWF) decision-makers.

AFS debuted in 2016<sup>1</sup>, announcing our intent to combat the often outrageous and misleading challenges to CWF by fluoridation opponents (FOs<sup>2</sup>). Our five founding members came from private practice and public health dental backgrounds and included a vascular surgeon. We are united by a conviction to challenge the sensational, pseudoscientific claims used by opponents in their ceaseless attempts to undo the achievements of CWF.



### AFS performs three primary tasks:

■ First, when requested by health leaders, we respond in-person to provide expert testimony about CWF to local decision-making bodies. It is imperative to build accurate local knowledge of the best, most current scientific evidence to guide their deliberations.

■ Second, we coach grassroots dental and medical professionals on how to defend CWF in their community. Our coaching includes briefing CWF advocates on critical studies they should be familiar with as they prepare. Accordingly, the AFS website is a beneficial portal through which visitors can separate the myths from the facts. It can be found at <https://americanfluoridationsociety.org>.<sup>3</sup>

■ Third, AFS conducts formal, intensive training sessions for providing testimony and serving as media contacts. We walk them through scientific evidence and offer tips for translating this evidence into general terms for officials and others who may have minimal levels of health literacy.

AFS's all-volunteer Board of Directors does not accept any remuneration for these efforts. Our primary funding comes through grants. There is no brick-and-mortar office, so 100% of every penny flows to fund the assistance we provide.

### The fluoride ion discovery and its benefits

It is critical to learn the background of fluoride's discovery and its benefits when addressing challenges to CWF. Often FOs contend that dentists blindly promote it with little understanding. On the contrary, the reason why dental professionals promote CWF is a result of vigorous research and their clinical observations supporting fluoridation's impact on reducing dental decay.

The FOs also portray CWF as having begun in 1945 when some guy with a shovel started dumping it into the water to get rid of fluoride additives that companies couldn't dis-

pose of themselves. It makes for interesting reading if you like science fiction novels; however, the falsehoods they publish can result in harm to our families. This is precisely why the accurate story of fluoride's discovery and the benefits it provides is critical to know so that we can educate decision-makers on the truth about CWF.

An excellent review of the history of CWF can be found in this issue of the *Journal* on Page 30.

### Challenges to CWF

Opponents of CWF typically use a laundry list of claims. At times they throw out new assertions and use references to dubious literature to support their position. They don't expect decision-makers to look at that literature, and many don't. This is why it is essential to be prepared to challenge their contentions, no matter how ungrounded they may appear.

A fantastic resource, which captures the FO's laundry list and systematically debunks it, is the ADA's *Fluoridation Facts*. The 2018 edition is available free online.<sup>4</sup> It is the authoritative document on CWF that is used worldwide.

### How to face challenges and win

The best defense is a good offense. Opponents exploit unique community issues that resonate locally. Perhaps it is PFAS/PFOS, budgetary crises, an illness of unknown origin, etc. They use conspiratorial tactics, fear, and misinformation to scare the local population. It is much easier to scare someone than it is to "unscare" them, so facts must guide awareness to prevent unfounded assertions from gaining traction.

AFS trains CWF advocates to fight the fight successfully. Trust me; when you are prepared, the battle can be fun. The lessons we have learned from hundreds of battles are available so that everyone can have and use them when challenges to CWF arise. Key points are what follow.

### When advocacy is needed

First and foremost, you must have a group of motivated stakeholders from diverse backgrounds. This should include private and public health practitioners, business owners, and community advocates. Ideally, you should have such a group assembled prior to ever facing a CWF challenge. All it really takes is identifying those with a passion and helping them become armed with the facts.

Recognize that opponents are trying to inflict harm on the public's health by stopping CWF, and members of the dental community have the standing and expertise to join the fight. FOs desire to have their wishes met without any regard for the community as a whole. We live in a democratic society, and public health exists for the greater good and is not tailored to the whims of the few who reject these measures.

When you form a CWF committee, you have solved a significant problem by having a group in place in advance. You need to have health care professionals who are willing to learn strategies and become empowered with knowledge and skills to run into the fire. You need to have a mobile strike force that will spring into action at a moment's notice to be a subject matter expert to testify before the CWF decision-makers.

Laying out a plan and implementing it is easier when you have a reliable group to share the workload. AFS has the expertise to help organize these efforts, and we are only a call away.

Opponents have a handful of people that spread the same spoon-fed information within their networks nationwide, and they are adept at using electronic media. They write emails citing their "junk science" to the decision-makers nonstop. They flood inboxes with hundreds to thousands of emails in a short time to give the appearance that the majority of the community is against CWF. The silent

majority supporting CWF do not write many emails, trusting that their elected officials will make the correct decision. When officials begin receiving 300 emails against, and 10 in favor, the wheels can come off the bus quickly. Thus, it is imperative to initiate one-on-one dialogues with CWF decision-makers to help them understand what they are seeing and allow you to get their concerns or questions addressed.

Remember, each of these officials likely has a dental and medical professional who they and their family see, children who attend school with your kids, or shop at the same stores; in short, they are in the community, large or small, and will run into you. You have the unique position of making yourself a resource for them as well as debunking the FO information that they're receiving. Just as with a political campaign, it is crucial to network and provide presentations to community groups and reach out to all who will shake your hand and listen to your story on the benefits of CWF.

Form this assembly of medical, dental, dental hygiene, oral health coalitions, and community representatives to advocate collaboratively. Issues may exist at the local, state, or national levels where the dental, dental hygiene, oral health coalition, and occasionally the health department don't see eye-to-eye. It is paramount to overcome these conflicts for the team to be successful. We all agree on the benefits of CWF. It is imperative to set aside differences and work together on this issue. By avoiding fragmentation, a strong group effort leads to positive outcomes.

All too often, one group, usually the dentists, sees itself as the one that

should lead the battle as the most qualified experts. Although dentists are oral health experts, we need allies to address a broad spectrum of claims that will be thrown out during the battle. Almost every single assertion FOs make against CWF is medical in nature. We need to team with partners who can credibly speak to different issues so that we can advocate effectively.

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Pediatricians and other physicians are best suited to take the lead. We have found that pediatricians are the most influential advocates that CWF decision-makers listen to, followed by dentists. Think about it for a second. Pediatricians care for our children beginning at birth. They are most trusted to advise us in the area of

health for those we love most. Recruiting physicians to join the battle can be challenging because often they dismiss CWF opposition as foolishness, much like they experience with anti-vaxxers. What physicians may not realize is that when contrasted to the vaccination issue, CWF is decided at the local level and relies on community support.

We have to impress upon the physicians that their involvement is key to fighting this leading chronic disease of childhood. A county health director once told me that if there were a naturally existing mineral that could be optimally adjusted in water to reduce the incidence of cancer by 25%, she'd be all over it. We need to impress on our medical colleagues that CWF does just that in addressing dental decay and its associated health impact, the most common chronic disease faced by children and young adults.

### **A face of the CFW group**

A tactic used by the anti-fluoridation movement is to bring in the executive director of the Fluoride Action Network (FAN) to imply a level of gravitas. FAN can appear to be authoritative and is crafty in spinning its alternative facts, but is not an authority. People are entitled to their own opinions, but not to their own facts.<sup>5</sup>

Local experts become familiar with the best, most current science. However, they are often perplexed in addressing pseudoscientific papers and mischaracterizations offered by FOs. AFS provides a recognized organization to lend validity to those advocating for CWF and experience in addressing junk arguments.

AFS provides training programs in



communities with diverse needs, in addition to providing statewide stakeholders with training on how to fight the fight. A few of the states that have already participated in AFS's training program are Mississippi, Pennsylvania, Texas, Florida, Tennessee, Vermont, and Wisconsin. We've also instituted AFS affiliates and provided them with materials they need to address local issues. Our affiliate societies note that they have found by branding themselves with AFS's logo, their presentations receive broader acceptance from CWF decision-makers. AFS is listed on the CDC's website under "organizations recognizing the benefits of community water fluoridation,"<sup>6</sup> which positions our society

and its affiliates as highly credible, authoritative resources.

### The IQ question

Over the past two years, several articles have been released from good researchers looking at the presence of fluoride in the urine of pregnant mothers and any possible relationships to the IQ or neurodevelopment of their offspring. While these studies have their strengths, they suffer from similar weaknesses. The articles have evaluated levels of fluoride in urine from pregnant mothers in Mexico, where salt fluoridation is used, and others from Canada where CWF is practiced. However, intakes of fluoride were not measured — only what was found in the output of the pregnant mom's urine. The children received IQ testing a few years after birth, so confounding factors had occurred over those years.

The latest paper to make serious waves heard around the world was led by Rivka Green. Green's study was one of a series of studies by the group in Canada, led by Dr. Christine Till, on fluoride and health effects. Green's study was published in the *Journal of the American Medical Association, Pediatrics* on Aug. 19, 2019, titled "Association Between Maternal Fluoride Exposure During Pregnancy and I.Q. Scores in Offspring in Canada."<sup>7</sup> It is of interest to note that data used in these studies came from sources that were not designed for fluoridation analysis.

Green published data that was gathered from "The Maternal-Infant Research on Environmental Chemicals" (MIREC) Study. MIREC's data was "established to obtain national bio-monitoring data on pregnant women and their infants and to examine potential adverse health effects of prenatal exposure to environmental chemicals on pregnancy and infant health."<sup>8</sup> It utilized analysis of spot urine samples instead of 24-hour samples, which scientists consider reliable. For a substance

with a short half-life, such as fluoride, urine concentrations vary hugely and are really only representative of the last drink.

The stated objective of the Green et al. study was "To examine the association between fluoride exposure during pregnancy and IQ scores in a prospective birth cohort." Quite interestingly, the author Green, and the principal author Till, found that IQ differences between children born of mothers in fluoridated communities differed by 0.14 IQ points from those born in non-fluoridated communities.

Thom Baguley, a professor of experimental psychology at Nottingham Trent University, told the Science Media Centre "it is not correct to imply that the data here show evidence of a link between maternal fluoride exposure and IQ. The average change in IQ is not statistically significant."<sup>9</sup> Grainne McAlonan, a professor of neuroscience at King's College in London, reviewed the Green study and told the Science Media Centre that "if you look at average IQ in the children from fluoridated and non-fluoridated groups these are virtually the same: 108.07 vs. 108.21 respectively. I was therefore surprised that the study went on to look for a relationship between fluoridation and IQ, given these figures."<sup>10</sup>

The Canadian Agency for Drugs and Technologies in Health, CADTH, analyzed<sup>11</sup> this study and noted in its Limitations section: "This conclusion was not supported by the data." CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs and medical devices in our health care system.

Perhaps, in a way, the Green study marked a turning point in the advocacy for CWF, with many coming forward to debunk its sensationalistic claims. Reaction to the article was swift from national and international

## What happens when CWF ends



Major cavity increases after cessation:

- ❑ **Juneau, Alaska** — Dental disease among preschool-age kids increased, requiring an average of 1 additional dental procedure *per child, per year*.
- ❑ **Calgary (Canada)** — Cavity rates among children skyrocketed 146% in 3 years.
- ❑ **Windsor (Canada)** — Cavity rates increased 51% in a 5-year period.

Source: American Fluoridation Society

researchers, academicians, non-fluoride researchers, statisticians, medical specialists, and too many others to count.<sup>12,13,14,15,16,17,18</sup> Experts stated concerns with the methodology and IQ testing being used, statistical analyses, and a host of other objections. Further, the raw data from this study was requested by researchers so that an independent statistical analysis could be performed. The authors refused to release it. Thirty national and international researchers and academicians signed on to a letter<sup>19</sup> to the National Institute of Environmental Health Sciences (NIEHS, an Institute of the National Institute of Health) demanding access to this data. NIEHS had funded this study.

While this and other recent studies from Mexico add to the body of evidence regarding fluoridation, the overwhelming body of evidence over the past 75 years of research on the efficacy and safety of CWF has not changed. Studies have to be repeated, validated, and show the clinical applicability of these findings. At this time, thousands of studies continue to support CWF as effective and safe. If that were to change, AFS would be leading the pack to share those concerns.

### Cessation of CWF: The horrific facts

Sadly, on occasion, the opponent's misinformation campaigns are successful in creating an atmosphere where local authorities choose to cease fluoridating their water supply. Often their arguments for discontinuing CWF contend that it is no longer needed. They use convoluted mathematics to generate misleading statistics, such as anticipated cavity reductions are lower than one cavity over 40 years.

The experience from these ill-informed communities has provided us with hard data on what happens when communities stop CWF. Studies reveal compelling data showing that cavity rates skyrocket. Armed with this evidence, Calgary, Ontario, Canada, is in the process of considering restarting CWF, and Windsor, Ontario, has voted to restart after a 5.5-year cessation. AFS stands ready to help any community just as we have supported efforts in Calgary and Windsor.

The study and data from Juneau, Alaska, is particularly striking.<sup>20</sup> This study was of low-income children on Medicaid. The researcher found that when compared with a similar cohort of children before CWF ended and those after it ended (0 to <7 years old), those who never had any benefit of CWF experienced one more cavity-

related procedure per year at a cost of ~\$300. That was a huge increase of cavities in this group of kids. The graphic on this page displays this well.

Don't ever let anyone tell you that CWF doesn't work. And that stopping it will save your community money. That makes my blood boil!

### Final notes

What dentists and hygienists must do every day in your office to promote and protect CWF:

#### For fluoridated communities:

- Educate your patients about how nice their teeth look and how lucky we are to have CWF.

- Mention how few cavities they've had over their lifetime owing to the benefits of CWF in addition to topical fluorides; fluoridated toothpaste, rinses, varnish.

- Mention how few, if any, white spots of early cavities that they have, again for the reasons stated above.

- Say: "We sure are lucky to have CWF. Adults, our children, grandchildren, and our aging population benefit from it."

#### For non-fluoridated communities:

- Educate your patients about cavities that they are getting and white spots of early cavities. Discuss how lucky we would be to have CWF as these areas would be greatly reduced or absent.

- Discuss how CWF reduces at least 25% of the cavities they'd get if we had it. This is above and beyond those already reduced by topical fluorides; fluoridated toothpaste, rinses, varnish.

- Show them white spots of early cavities that they have, and explain that CWF helps to re-harden these areas and can actually reverse the cavity process.

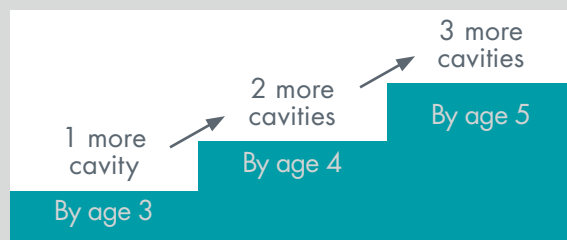
- Say: "We sure would be lucky to have CWF like they do over in *Central City*. The patients that I see from there have far fewer cavities than we do here in our town."

- Remind them that children,

## Case Study: Juneau, Alaska



After fluoridation ended in Alaska's capital city, the average low-income child needed **1 additional procedure each year** to treat tooth decay.



Source: American Fluoridation Society

grandchildren, adults, and our aging population benefit from CWF.

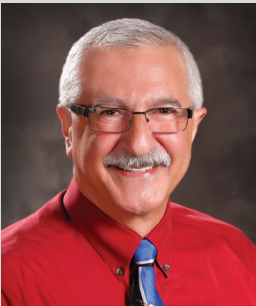
If you need help, here's where to turn when you need it:

■ AFS is one resource that is available to you 24/7. We are a mobilized group that can help you from afar, or in-person. AFS will be beside you in every battle that you encounter, giving you everything that we have to help you be successful in your efforts.

■ Your Michigan Dental Association, American Dental Association, Michigan Dental Hygienists' Association, Michigan Oral Health Coalition, the American Academy of Pediatrics Campaign for Dental Health (ilike-myteeth.org), and the Michigan Department of Health and Human Services are all resources to rapidly reach out to. You will likely know about an issue before they will. It's your local community.

YOU have to be the eyes and ears

### About the Author



**Dr. Johnny Johnson**, is a pediatric dentist from Pinellas County, Florida. He is a co-founder and president of the American Fluoridation Society. Dr. Johnson has delivered presentations, training and testimony about fluoride in numerous states, as well as in the U.K. and Canada. He received his dental training from the University of Florida, and he earned his Certificate in Pediatric Dentistry and Masters of Science from the University of North Carolina at Chapel Hill.

on the ground. Step up. Be brave. And if you're scared like I was, just remember, I'm a simple man who stepped way, way outside of my comfort zone.<sup>21</sup> And I thank the good Lord for giving me guidance.

■ Thank you for leading the way on Jan. 25, 1945, and again on Jan. 25, 2020. You make us all proud! ●

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