

IQ



AMERICAN PSYCHOLOGICAL ASSOCIATION

- Over the past 100 years, IQ in the U.S. has risen nearly **30 points**
- “Flynn Effect” named after Dr. James Flynn who discovered this >30 years ago

38 year Study Finds No Association Between IQ in CWF vs Different Fluoride Levels



Community Water Fluoridation and Intelligence: Prospective Study in New Zealand

| Jonathan M. Broadbent, PhD, W. Murray Thomson, PhD, Sandhya Ramrakha, PhD, Terrie E. Moffitt, PhD, Jiaxu Zeng, PhD, Lyndie A. Foster Page, PhD, and Richie Poulton, PhD

- Over 1,000 children studied over 38 years
- No clear differences in IQ because of fluoride exposure were noted

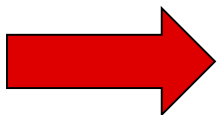
EPA Denies Latest Petition from Fluoridation Opponents



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 17 2017

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION



Michael Connett
Fluoride Action Network
3454 Vinton Avenue
Los Angeles, Calif. 90034

Dear Mr. Connett:

The U.S. Environmental Protection Agency has completed its review of the petition you filed on November 23, 2016, on behalf of the Fluoride Action network and other parties identified in your

DENIED

CLAIM: Fluoride has a neurotoxic effect

- In 2017, EPA ruled that this petition “has not set forth a scientifically defensible basis to conclude that any persons have suffered neurotoxic harm as a result of exposure to fluoride” through water fluoridation.
- EPA stated that many studies cited by critics were previously found to “pose a very serious overall risk of bias” because of their methodology or data reporting.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Chapter I

[EPA-HQ-OPPT-2016-0763; FRL-9959-74]

Fluoride Chemicals In Drinking Water; TSCA Section 21 Petition; Reasons for Agency Response

AGENCY: Environmental Protection Agency (EPA).

ACTION: Petition; reasons for Agency response.

SUMMARY: This document announces the availability of EPA’s response to a petition it received on November 23, 2016, under section 21 of the Toxic Substances Control Act (TSCA). The TSCA section 21 petition was received from the Fluoride Action Network, Food & Water Watch, Organic Consumers Association, the American Academy of Environmental Medicine, the International Academy of Oral Medicine and Toxicology, and other individual petitioners. The TSCA section 21 petition requested that EPA exercise its authority under TSCA section 6 to “prohibit the purposeful addition of fluoridation chemicals to U.S. water supplies.” After careful consideration, EPA has denied the TSCA section 21 petition for the reasons discussed in this document.

FAN Petitioned the National Toxicology Program – Neurotoxic Effect



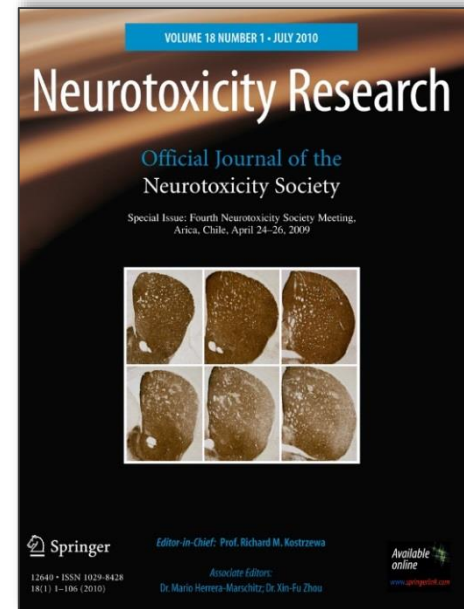
The screenshot shows the FluorideAlert.org website. The header includes the logo for FluorideAlert.org (Fluoride Action Network) and navigation links for 'NEW VISITORS', 'TAKE ACTION', and 'RESEARCHERS'. Below the header is a search bar and a menu with options like 'JOIN US', 'DONATE', 'Issues', 'FAN.tv', 'F.A.Q.', 'News', and 'About FAN'. The main content area features a breadcrumb trail: 'HOME // MISCELLANEOUS // NEW FLUORIDE/BRAIN STUDY COULD END FLUORIDATION //'. The article title is 'NEW FLUORIDE/BRAIN STUDY COULD END FLUORIDATION', dated 'December 11, 2015'. The article text begins with 'NTP Proposes Landmark Fluoride/Brain Study' and states: 'Thanks to your support, the Fluoride Action Network (FAN) has been able to raise public awareness about the serious, permanent risks that fluoride poses to the **developing brain**. This was once a lonely battle — but, fortunately, that is starting to change.'



The **National Toxicology Program (NTP)** is an inter-agency program run by the United States Department of Health and Human Services to coordinate, evaluate, and report on toxicology within public agencies.

Study Results

- Researchers with the National Toxicology Program led an animal study to examine the impact of fluoride in water and food.
- They found “no exposure-related differences in motor, sensory, or learning and memory performance” for any of the **nine** different tests they conducted.
- The NTP study: thyroid hormone levels were **not** affected — even at levels of 0, 10 or 20 parts per million of fluoride in water.



CLAIM: Mexican study says fluoride is a neurotoxin

FACTS:



This study reported that higher prenatal fluoride exposure “was associated with lower scores on tests of cognitive function” in children.

(Sources: M. Bashash et al., “Prenatal Fluoride Exposure and Cognitive Outcomes in Children at 4 and 6–12 Years of Age in Mexico,” Environmental Health Perspectives, Sept. 2017.)

*Fluoridated salt is widely used in Mexico and many areas have water with natural fluoride levels **above** optimal*

A closer look at the Mexican study

Coauthors of the study cautioned against reading too much into the findings:

- **Morteza Bashash:** “We need to do more work to identify the nature of the effect. And we have a lot of uncertainty in the results.”
- **Howard Hu:** “[The study] needs to be reproduced in other populations by other scientists.”
- **Angeles Martinez-Mier:** “We don’t have the whole picture.”

(Sources: Laird Harrison, “Association Reported Between Fluoride and Reduced IQ,” Medscape, Oct. 2, 2017; Nadia Kounang, “Fluoride exposure in utero linked to lower IQ in kids, study says,” CNN, September 21, 2017.)

Fluoride Content in Urine of Pregnant mothers – Must measure intakes to correlate with outputs



1. Mexican Study:

- **Intakes not measured**
- F output in urine measured
- Salt fluoridation, fluoride in drinking water, toothpaste

2. Canadian Study :

- **Intakes not measured**
- F output in urine measured
- Water fluoridated areas, non-fluoridated, toothpaste

Similarities:

- Urine fluoride content from pregnant mothers were similar
- Outliers had ~4ppm of fluoride
- CWF can't be accounting for ~4ppm

A coauthor shares her perspective

“As an individual, I am happy to go on the record to say that I continue to support water fluoridation.

“You can also say that if I were pregnant today I would consume fluoridated water, and that if I lived in Mexico I would limit my salt intake.”



*E. Angeles Martínez Mier, DDS, MSD, PhD
Professor and Chair, Department of Cariology,
University of Indiana School of Dentistry*

Claim: CWF is forcible “mass medication”

FALSE:

- America has a tradition of fortifying foods and drinks to improve human health:
 - ✓ Folic acid
 - ✓ Vitamin D
 - ✓ Calcium
 - ✓ Iodine
- **U.S. courts have consistently rejected this argument against fluoridation**
- Medications are used to **treat** a health problem. Fluoridation (like chlorination) is about **prevention**



Claim: “Randomized Control Trials (RCT) never been done on CWF”

FACTS: RCT’S for CWF aren’t feasible-Cochrane Collaboration

Water Fluoridation Studies are Observational Designs

Observational: an effect is found, and the cause is researched

Same study design used to determine causes for:

- ✓ Smoking and lung disease
- ✓ Sexually Transmitted Diseases
- ✓ Chronic Alcohol Use



Claim: The FDA has never approved fluoride

The FDA *has* approved fluoride for use in bottled water for cavity reduction.



The EPA, not the FDA, has jurisdiction over tap water.



CLAIM: The Cochrane review found no evidence that fluoridation works

- **Wrong.** Cochrane found that fluoridation reduced decay in baby teeth by 35% and reduced decay in permanent teeth by 26%.
- **CDC:** Cochrane used strict criteria that excluded “many valid, peer-reviewed studies (that) document the effectiveness of community water fluoridation.”



CLAIM: Fluoride works topically, not by being swallowed

FALSE: Fluoride works both topically and systemically



Studies show fluoride works through **both** topical and systemic effects.

- It's beneficial before teeth fully appear in a child's mouth
- Continuous exposure to small amounts of fluoride helps both adults and children by remineralizing the tooth enamel.

Claim: Mother nature protects babies from fluoride

FALSE:

- Breast feeding is encouraged by leading scientific groups (nutrition, antibodies, etc.).
- **However...** breast milk is not perfect. For example, it lacks sufficient:
 - Vitamin D (brittle bones)
 - Vitamin K (clotting)
 - Iron (anemia)

Infants are recommended to start supplements of these shortly after birth.



Claim: “The ADA warns parents not to add fluoridated water to infant formula because of its harmful effects”

FACTS: False



ADA & CDC recommendations:

- **Continued use** of liquid or powdered concentrate infant formulas reconstituted with optimally fluoridated drinking water while being cognizant of the potential risk for *mild* enamel fluorosis
- Use ready-to-feed formula or liquid or powdered concentrate formula reconstituted with water that is either fluoride-free or has low concentrations of fluoride when the potential risk for *mild* enamel fluorosis **may be a concern for parents**

Claim: *“Fluoridation chemicals are different from naturally occurring fluoride”*

FACTS: FALSE



Fluoride Additives Are Not Different From Natural Fluoride

Some consumers have questioned whether fluoride from natural groundwater sources, such as calcium fluoride, is better than fluorides added "artificially," such as FSA or sodium fluoride. Two recent scientific studies demonstrate that [the same fluoride ion is present in naturally occurring fluoride or in fluoride drinking water additives](#) and that no intermediates or other products were observed at pH levels as low as 3.5. In addition, the metabolism of fluoride does not differ depending on the chemical compound used or whether the fluoride is present naturally or added to the water supply.

Claim: *“The fluoride additives are not Pharmaceutical grade”*

FACTS: Not appropriate



United States Pharmacopeia (USP) Grade Fluoride Products

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.

Claim: “Cannot manage fluoride intake”

FACTS:

- There is no need to control water intake. Fluoride from *dental products, primarily swallowed toothpaste by young children*, needs to be used appropriately as they are a *major contributor* to fluorosis, even in areas *without* fluoridation.
- There is a history of over 70 years of safety record of fluoridation in the United States.
- **NRC Report** showed that severe fluorosis near zero below 2mg/L (2ppm)
- **EPA’s analysis** provides that the proposed recommendation of 0.7 mg/L of F⁻ will protect against any potential adverse health effects.

CLAIM: There are better alternatives WRONG!



“A significant advantage of water fluoridation is that anyone, regardless of socioeconomic level, can enjoy these health benefits during their daily lives ... simply by drinking fluoridated water or beverages prepared with fluoridated water.”

Dr. David Satcher, U.S. Surgeon General 1998-2002

CLAIM: There are better alternatives

- Wrong. Fluoridation is the single most cost-effective way to prevent tooth decay.
- Fluoride toothpaste is **not** a replacement for CWF. Both are needed
- Fluoride supplements: Compliance is a problem
- Supplements and school-based dental programs don't serve adults, whose oral health needs can increase as they age.

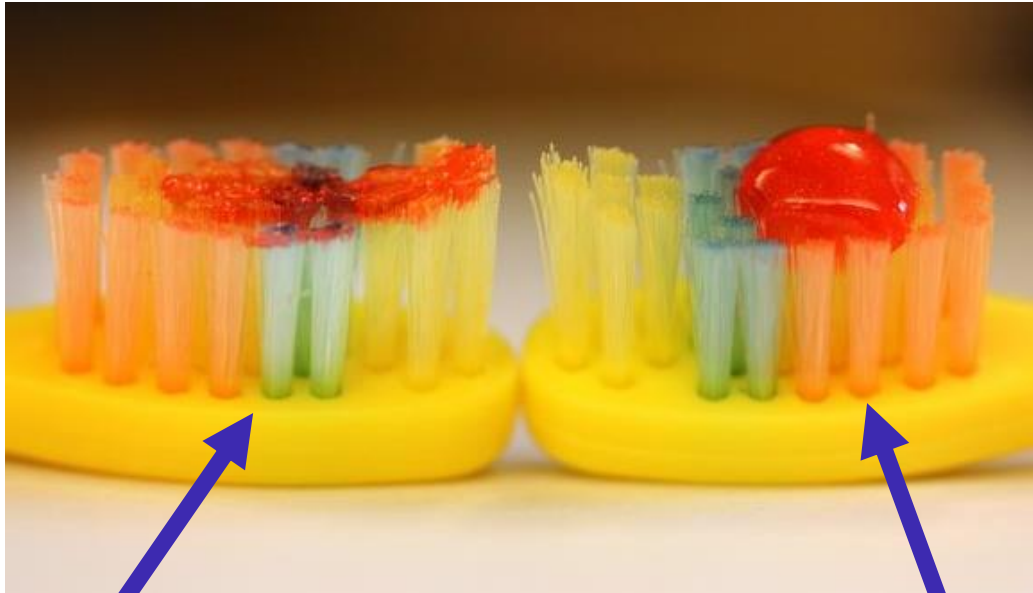


Claim: “Communities are putting an end to fluoridation..”

FACT: False

- The percent of the U.S. population on community water systems *increased* from 68.7% in 2004 to 74.4% in 2014 (5.7%)
- In 2014, >**211 million people** in the U.S. population on community water systems had access to fluoridated water-continuing the historic growth
- Community water fluoridation has continued to increase every year since it was introduced in 1945

The right amount of fluoride toothpaste



Once teeth appear, parents should **use a smear** of fluoride toothpaste (roughly a grain of rice) on their child's brush until age 3

For ages 3 to 6, parents should **use a pea-sized amount** on the toothbrush

Which would you rather have?

Cavities



OR

Mild Fluorosis



Summary

Community Water Fluoridation:

1. Is **Effective, Safe**, and most **Cost Efficient** means to reach everyone in the community with its cavity fighting benefits
2. No adverse health effects from drinking fluoridated water
3. Benefits all members of the community, regardless of age, race, SES, ethnicity, access to dental care
4. For pennies/year/person, **\$32.19 in dental treatment costs/person/year are avoided**
5. Is recommended by Health Canada, CPS, AAP, CDC, CDA, ADA, CMA, AMA, Mayo Clinic, WHO, and leading health and scientific organizations around the world

Reference Websites



www.iLikeMyTeeth.org

The Campaign for Dental Health is a coalition of organizations. The coalition and its website are managed by the American Academy of Pediatrics.



www.mouthhealthy.org/en/az-topics/f/fluoridation

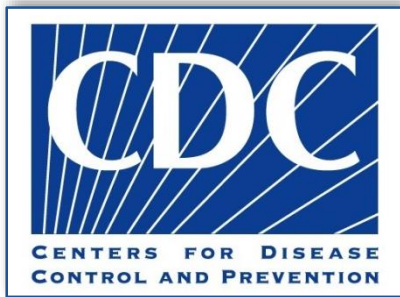
This is the American Dental Association's consumer-facing website. It provides basic information about the benefits and safety of community water fluoridation.

Reference Websites



www.AmericanFluoridationSociety.org

AFS's website provides a variety of fact sheets and other resources to support the efforts of health professionals and advocates. AFS's officers are volunteers who do not receive salaries for their work.



www.cdc.gov/fluoridation

This is the Centers for Disease Control and Prevention's resources related to community water fluoridation. There are a lot of helpful materials, including FAQs.

Thank you!

Questions? Comments?