From: sue coffman
Sent: 11/2/2023 1:41:53 PM
To: DOH WSBOH
Cc:
Subject: Public comment for Nov 8 meeting

External Email

I mistrust one of the agenda items for the next meeting on Nov 8th.

It is item #8, requesting authority regarding our water system plans, the title of which seems to be a very big mouthful of words for a fifteen minute presentation. I looked into the various portions of the RCWs brought up about the water system, and I just don't understand why the HEALTH department needs to get their hands into our water too. We have a water district already, and I understand keeping the water system updated and healthy for human consumption, but I have learned to mistrust our health agencies in the past few years, so I just don't feel reliance toward this topic of water & health.

As I've stated before...."stay in your lane."

Thank you for retaining my public comments herein.

Sue Coffman

714-337-4331
CHDwa Chapter Co-Leader

https://wa.childrenshealthdefense.org/
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwa.childrenshealthdefense.org%2

ICWA Team Leader
Legislative District #24
https://informedchoicewa.org/
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Finformedchoicewa.org%2F&data=

From: bill teachingsmiles.com
Sent: 10/18/2023 10:48:55 AM
To: DOH WSBOH
Subject: Toxic Toxic Control Substance Act

External Email

Dear Washington State Board of Health,

A must view for the Washington State Board of Health members is a Fluoride Video <https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fthehighwire.com%2Fark-videos%2Fthe-fluoride-scandal%2F&data=05%7C01%7CWSBOH%40SBOH.WA.GOV%7C0ce08eb19bea4e9e0b4d08dbd0027e02% briefly going over the history and current status of some harms, government deposition statements and more. Much of this is based on court depositions, FOI, National Research Council, and published studies. I know you are busy, but this video is the best short overview of fluoridation authoritative knowledge and will save many days of your time. The CDC, EPA, NSF own words in depositions.

Although the Washington State Board of Health claims "Fluoridation benefits everyone," does the CDC agree?

1. What does CDC's Casey Hannan, Director, Division of Oral Health, say under oath about the safety of fluoridation and efficacy for young children or if ingested by the mother during pregnancy?
2. What does NSF say about their testing of fluoride chemicals?
3. What is the endpoint of fluoride concern in the USA, first sign of harm, intake below which is "safe"?
4. What do the NIH funded mother-child cohorts find regarding fluoridation?
5. What does EPA say about historical and current research and safety standards of fluoride?
6. Was there attempted political influence with the NTP report?
7. What does the National Toxicology Program say about fluoride's developmental neurotoxicity?
8. Does the NTP conclude we have enough scientific studies to make a determination of fluoride exposure concern?

For more information on the TSCA fluoride/EPA trial, depositions and expert testimony, see videos. <https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Ffluoridealert.org%2Ffan-tv%2Ftsca-lawsuit-video-update-1-dec-2018%2F&data=05%7C01%7CWSBOH%40SBOH.WA.GOV%7C0ce08eb19bea4e9e0b4d08dbd0027e02%7C Dr. Thiessen, Dr. Lamphear, Dr. Grandjean, Dr. Hu, and 4 of the strongest fluoride neurotoxicity studies, along with margin of safety, sugar and fluoride, thyroid and more.

The most recent study <https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fpubmed.ncbi.nlm.nih.gov%2F377 this month on fluoride's developmental neurotoxicity by Grandjean.

Grandjean P, Meddis A, Nielsen F, Beck IH, Bilenberg N, Goodman CV, Hu H, Till C, Budtz-Jørgensen E. Dose dependence of prenatal fluoride exposure associations with cognitive performance at school age in three prospective studies. Eur J Public Health. 2023 Oct 5:ckad170. doi: 10.1093/eurpub/ckad170. Epub ahead of print. PMID: 37798092.

Sincerely,

Bill Osmunson DDS MPH

_____
From: Jotform
Sent: 10/28/2023 7:41:44 PM
To: DOH WSBOH
Cc:
Subject: Re: Stop The Child Vaccine Mandate Petition - Angela Janssen

External Email

<https://cdn.jotfor.ms/assets/img/logo2021/jotform-logo.png>

Stop The Child Vaccine Mandate Petition

Name

Angela Janssen

Email

angela.janssen@comcast.net

Zip

98372

You can edit this submission
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.jotform.com%2Fedit%2F574
and view all your submissions
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.jotform.com%2Ftables%2F2
easily.

From: Garry Blankenship
Sent: 10/25/2023 4:35:10 PM
To: DOH WSBOH,sheriff@co.clallam.wa.us,Berry, Allison 2
(DOHi),shahidafatin@gmail.com,ncarr@cityofpa.us,gbsjrmd@sisna.com,Mark.Ozias@ClallamCountyWA.gov
Herald,
(DOHi),chutton@heraldnet.com,customerservice@theolympian.com,news@spokesman.com,voice@spokesm
City Herald (DOHi),Van De Wege, Kevin,Chapman, Mike (LEG)
Cc:
Subject: The Plandemic Litigation Is Out of the Gates

attachments\2BF264246FA54A39_D.R. Martin Plandemic Suit Summary.pdf

External Email

This is of particular importance to all Boards of Health, medical boards and hospitals. You / they can disregard at their own peril. It is a succinct summary of the healthcare practicing future and an explanation of how our "pandemic" manifested..

Attached please find a litigation case summary against:

Mr. Alex Azar, DEFENDANT, (H.H.S.)
Dr. Anthony Fauci, DEFENDANT
Dr. Peter Daszak, DEFENDANT
Dr. Ralph Baric, DEFENDANT
FDA, DEFENDANT
CDC, DEFENDANT
NIAID, DEFENDANT
MODERNA, DEFENDANT
PFIZER, DEFENDANT

The full text can be found at
https://prosecutenow.io/dld/LitigationConsolidationSummary.pdf
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fprosecutenow.io%2Fdld%2FLitiga

This is one health violations lawsuit of many and the inevitable multitudes to follow. Dr. Martin is a data analytical genius. He specializes in data verification. His company does patent research and other data intense services. Much can be argued in the courts, but the facts produced by Dr. Martin are bullet proof. It is my hope that the success of this lawsuit trickles down to State and local Boards of Health, censuring medical boards, as well as the Hospitals and staff violating the Hippocratic Oath for Government offered bribery money. Health professionals must be held accountable for their pandemic harmful practices.

Sincerely,

Garry Blankenship

Executive Summary for Litigation of PLANDEMIC Crimes…

Dr. David E. Martin

Since the publication of the ***Global Vaccine Action Plan 2011-2020*** in February of 2013, Drs. Anthony Fauci of the U.S. National Institutes for Allergies and Infectious Diseases (NIAID) and Chris Elias of the Bill & Melinda Gates Foundation have declared the commercial dictum: "to extend immunization to everyone."[1] Declaring vaccination an essential "human right", they spent the decade seeking to develop and deploy a "universal vaccination". Lamenting their failure before Congress and the World Health Organization, they complained that the public was reticent to accept a "universal" vaccine. Possibly informed by the compelling failure of the influenza "vaccines" which failed to disrupt annual flu seasons, the public wasn't falling for their obsession.

In 2014, Dr. Peter Daszak (veterinarian and NIAID pandemic engineer) lamented:

"…until an infectious disease crisis is very real, present, and at an emergency threshold, it is often largely ignored. To sustain the funding base beyond the crisis, he said, we need to increase public understanding of the need for MCMs such as a pan-influenza or pan-coronavirus vaccine. ***A key driver is the media, and the economics follow the hype. We need to use that hype to our advantage to get to the real issues. Investors will respond if they see profit at the end of process****, Daszak stated."*[2] (emphasis added)

Missing the opportunity to leverage the deadly flu season of 2018, Fauci, Elias, and Daszak announced that they would construct a scenario to mandate that ALL countries respond to a "lethal respiratory pathogen." Published in September 2019, these criminal conspirators put humanity on a collision course with a manufactured "pandemic" to create vaccine dependency.

"A rapidly spreading pandemic due to a lethal respiratory pathogen (whether naturally emergent or accidentally or deliberately released) poses additional preparedness requirements. Donors and multilateral institutions must ensure adequate investment in development of innovative vaccine and therapeutics, surge manufacturing capacity, broad-spectrum antivirals and appropriate non-pharmaceutical interventions. All countries must develop a system for immediately sharing sequences of any new pathogen for public health purposes, along with the means to share limited medical countermeasures across countries.

Progress indicator(s) by September 2020

Donors and countries commit and identify timelines for: financing and development of a universal influenza vaccine, broad-spectrum antivirals and targeted therapeutics. WHO and its

[1] https://www.who.int/publications/i/item/global-vaccine-action-plan-2011-2020
[2] https://www.ncbi.nlm.nih.gov/books/NBK349040/

Member States develop options for standard procedures and timelines for sharing of sequence data, specimens and medical countermeasures for pathogens other than influenza."[3]

One month later, they announced that they would use SARS Coronavirus as a "desktop" simulation during the Event 201 exercise funded by Open Philanthropy (Facebook's Dustin Moskovitz) and hosted by the Bill & Melinda Gates Foundation, the World Economic Forum, and Johns Hopkins University.

COVID-19, the first "disease" to have NO diagnostic test to measure its existence, was a series of symptoms aggregated to form an influenza-like illness to create the illusion of a pandemic. Now discredited, the RT-PCR test (amplified to cycles that could simulate any nucleic acid sequence) was used to create the illusion of infection and spread fear around the world. And all of this was to force the public adoption of a novel mRNA "vaccine" which, by the FDA's own classification is a gene therapy[4] – not public health immunization.

Over one year later it has become self-evident that the "vaccination" terminology was adopted for branding purposes (and to attempt to secure immunity shields for manufacturers) to coerce the population into accepting an experimental, dangerous gene therapy technology. The injected are getting sick. The injected are dying "of COVID-19". There is NO evidence that the injections have disrupted transmission as the recent "Omicron variant" has made abundantly clear.

THIS WAS NEVER ABOUT PUBLIC HEALTH. This was an organized crime racket to coerce the public's adoption of a novel technology that has NEVER been shown to be safe or effective under the definitions of the FDA, the Federal Trade Commission's Deceptive Medical Practices standard, or under any other statutory criteria.

It is long past time to hold the criminals accountable for:

- Domestic and International Terrorism,
- Deceptive Medical Practices,
- Reckless Endangerment and Homicide,
- Racketeering and Anti-trust collusion, and,
- Biological Weapons Construction and Deployment.

I have been the solitary voice calling for this accountability since the inception of this scheme and I'm now leading efforts to litigate all of the matters identified above as well as hold the conspiring commercial interests liable for tax and securities fraud. In the former, each manufacturer has misused the In Process Research and Experimentation Tax Credit

[3] https://reliefweb.int/sites/reliefweb.int/files/resources/GPMB_annualreport_2019.pdf
[4] https://www.sec.gov/Archives/edgar/data/1682852/000168285220000017/mrna-20200630.htm

misrepresenting sponsored research as qualified exemptions. In the latter, each manufacturer has violated that Bayh-Dole Act and has thereby misrepresented proprietary interests to their shareholders in violation of SEC laws.

-

From: Arne Christensen
Sent: 11/1/2023 7:21:13 PM
To: DOH WSBOH
Cc:
Subject: listening to people

External Email

It seems to be taking the health department a very long time to realize that the more you lecture and dictate to people who are skeptical about you, the less likely those people are to obey your lectures.

_____
From: Jotform
Sent: 10/26/2023 3:47:03 PM
To: DOH WSBOH
Cc:
Subject: Re: Stop The Child Vaccine Mandate Petition - Malia Jorgensen

External Email

<https://cdn.jotfor.ms/assets/img/logo2021/jotform-logo.png>

Stop The Child Vaccine Mandate Petition

Name

Malia Jorgensen

Email

neilmalia@comcast.net

Zip

98028

Cell Phone Number

(206) 3359296

From: shellies4@netzero.com
Sent: 10/25/2023 10:09:59 PM
To: DOH WSBOH
Cc:
Subject: Public Comments

External Email

Regarding Agenda item #8

8. Request for Delegated Rulemaking Authority – Engrossed Second Substitute House Bill (E2SHB) 1181, Climate Resilience Element in Water System Plans, Group A Public Water Supplies, Chapter 246-290 WAC

I just want to make VERY SURE that you are NOT considering putting fluoride in our water supply!!
We the people have voted it down over and over again!
We DO NOT WANT FLUORIDE in our water supply!
We definitely want you to watch out for the publics health, but fluoride in the water and mandatory COVID shots are NOT taking care of the public! It's poisonous to humans...
Thank you for keeping common sense in the whole process!
Thank you
Michelle Anderson
Otis Orchards WA

_____

From: bill teachingsmiles.com
Sent: 11/2/2023 8:02:07 AM
To: DOH WSBOH
Cc:
Subject: November 8, 2023 Public Comment

attachments\A4E3DD73D7E74D10_WSBH 11 8 23.docx

External Email

Please add my name to speak at the November 8, 2023 Board Meeting, public comment.

TO: Washington State Board of Health, November 8, 2023

TOO MUCH FLUORIDE: THE BOARD OF HEALTH HAS NO IDEA HOW MUCH FLUORIDE AN INDIVIDUAL IS INGESTING.

In a public forum debate with a Harvard Professor, I noticed he was less than clear with the audience, trying to assume fluoridated water was the only source of fluoride. I made his deception clear. The public chose to stop fluoridation. Is the WSBOH also being intentionally deceptive in their claim of fluoridation's safety? Fluoridated water represents an estimated 30% to 70% of total exposure of fluoride, for about 90% of the public. Fluoridation is a concentration not a dosage.

WATER: The mean intake of water is about one liter/day. 90th percentile is about 2 liters/day. The EPA ignores 10% of the public drinking the most water. Ten percent of Washington State is 770,000 individuals. Some ingest over ten times the statistical mean of 1 liter/day. Trying to dispense a drug in water lacks dosage control and is an insane public health practice. And that is just exposure from water. See National Academies, "Fluoride in Drinking Water"
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fnap.nationalacademies.org%2Fcat
in-drinking-water-a-scientific-review-of-epas-
standards&data=05%7C01%7CWSBOH%40SBOH.WA.GOV%7C5a8ce740d8ea4426867708dbdbb46276%7C
and Review
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.fluorideresearch.org%2F393
172.pdf%23%3A~%3Atext%3DOn%2520March%252022%252C%25202006%252C%2520NRC%2520relea

MEDICATIONS: At 1,500 ppm (water 0.7 ppm) toothpaste has a significant potential for excess fluoride exposure. At age 11 I watched my daughter brush her teeth and told her to spit before swallowing… and I watched as she leaned over the sink and her little eve's apple bobbed and she spit. Swallowing is a reflex and toothpaste is swallowed.

Although pharmaceutical companies attempt to make the fluoride in medications (such as pills) not biologically available, on average about 10% is absorbed in the body. General anesthesia with fluoride (often used with children) can cause a huge spike in fluoride exposure.

FOODS: Fluoride tends to be a higher concentration in coffee, tea, sodas, shellfish, grapes, potatoes, baby foods, broths, stews, hot cereals made with tap water, artificial sweeteners, mechanically deboned meat and more.

POST-HARVEST FUMIGANT
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Ffluoridealert.org%2Fcontent%2Ffl
tolerances%2F&data=05%7C01%7CWSBOH%40SBOH.WA.GOV%7C5a8ce740d8ea4426867708dbdbb4627
(sulfuryl fluoride): The EPA/Congress/WBOH permits (endorses) up to 900 ppm fluoride residue on dried eggs, often fed to school children and institutions. Many other foods may have as much as 70 ppm.

The Board of Health should not be surprised that two out of three children in the USA have dental fluorosis, a biomarker of excess fluoride exposure. However, the EPA (and in effect the WSBOH) still has their level of protection at crippling skeletal fluorosis.

Sincerely,

Bill Osmunson DDS MPH

_____

From: bill teachingsmiles.com
Sent: 10/8/2023 8:50:22 AM
To: DOH WSBOH
Cc:
Subject: Grandjean: Prenatal Fluoride and IQ

attachments\E6421F56526A47A4_Grandjean-Dose dependent prenatal_PRDTOOL_NAMETOOLONG.pdf

External Email

Dear Washington State Board of Health

Attached is a study by P. Grandjean, Professor at both Harvard and University of Southern Denmark on fluoride's effect to the developing fetal brain. Dr. Grandjean has over 500 published studies and highly respected in the field of toxicological research.

Of the three combined studies of mother-child pairs from prospective studies, "the joint benchmark concentration results reflect an approximate threshold for fluoride neurotoxicity at about 0.3 mg/l in urine."

Remember, urine fluoride and water fluoride are roughly similar. The data to date from these three studies indicates water fluoride concentrations over 0.3 ppm will harm many. And with further research, more precises, at specific time periods of development, with synergistic toxicants, we may find that water fluoride concentration drops significantly.

At a minimum, the Board must caution expectant mothers to not ingested fluoride from water, toothpaste, and foods.

The Board has listened to the "choir" promoting fluoridation. Believers rely on historic research and do not include current developmental neurotoxicity of fluoride ingestion.

If we only look at one side of an issue, we will not know what we don't know and harm the ones we love.

Sincerely,

Bill Osmunson DDS MPH

European Journal of Public Health, 1–7
Published by Oxford University Press on behalf of the European Public Health Association 2023.

https://doi.org/10.1093/eurpub/ckad170

Dose dependence of prenatal fluoride exposure associations with cognitive performance at school age in three prospective studies

Philippe Grandjean [1,2], Alessandra Meddis [3], Flemming Nielsen [1], Iben H. Beck [1], Niels Bilenberg[4], Carly V. Goodman[5], Howard Hu[6], Christine Till[5], Esben Budtz-Jørgensen[3]

1 Department of Environmental Medicine, University of Southern Denmark, Odense, Denmark
2 Department of Environmental Health, Harvard T.H. Chan School of Public Health, Boston, MA, USA
3 Department of Biostatistics, University of Copenhagen, Denmark
4 Department of Child and Adolescent Psychiatry, Odense University Hospital, Odense, Denmark
5 Department of Psychology, Faculty of Health, York University, Toronto, ON, Canada
6 Department of Population and Public Health Sciences, Keck School of Medicine, University of Southern California, Los Angeles, CA, USA

Correspondence: Philippe Grandjean, Department of Environmental Medicine, University of Southern Denmark, Campusvej 55, Odense, Denmark, Tel: +45 (0) 6550 3769, e-mail: pgrandjean@health.sdu.dk

Background: Fluoride may be a developmental neurotoxicant at elevated exposures. We merged new data from a prospective Odense Child Cohort (OCC) with results from two previous birth cohort studies from Mexico and Canada to characterize the dose–effect relationship in greater detail. **Methods:** The OCC contributed 837 mother–child pairs to the total of >1500. We measured creatinine-adjusted urine-fluoride concentrations in maternal urine samples obtained during late pregnancy. Child IQ was determined at age 7 years using an abbreviated version of the Wechsler Intelligence Scales for Children. Findings from the three cohorts were used to calculate the joint benchmark concentration (BMC) and the lower confidence limit (BMCL) after adjustment for covariables. **Results:** In the OCC, urine-fluoride concentrations varied between 0.08 and 3.04 mg/l (median 0.52 mg/l) but were not significantly associated with full-scale IQ at age 7 years ($\beta = 0.08$; 95% confidence interval −1.14 to 1.30 for a doubling in exposure). No difference was apparent between boys and girls. In the OCC, the BMC was 0.92 mg/l, with a BMCL of 0.30 mg/l. The joint analysis of all three cohorts showed a statistically significant association between urine-fluoride and IQ, with a BMC of 0.45 mg/l (BMCL, 0.28 mg/l), slightly higher than the BMC previously reported for the two North American cohorts alone. **Conclusions:** As the BMCL reflects an approximate threshold for developmental neurotoxicity, the results suggest that pregnant women and children may need protection against fluoride toxicity.

Introduction

Fluoride has beneficial effects on the dental enamel in preventing caries, while systemic exposure may lead to toxic effects.[1,2] Although fluoride has been added to drinking water in certain parts of the world since the 1940s and toothpaste since the 1960s, little attention has been paid to the possible adverse effects of fluoride intake in pregnancy until fairly recently.[1] A substantial number of studies have shown cognitive deficits in children with elevated exposure to fluoride in drinking water, although mainly cross-sectionally.[1,3,4] However, prospective studies have now become available with individual data on prenatal fluoride exposure, as indicated by maternal urine-fluoride (U-F) excretion levels during pregnancy.[5,6]

Regulatory agencies often use benchmark concentration (BMC) calculations to identify safe or tolerable exposure levels.[7,8] In a prior study, we combined data from two prospective North American studies. A benchmark response of a one-point decrement in IQ was predicted by a BMC of 0.33 mg/l (lower confidence limit, BMCL, 0.20 mg/l) expressed in terms of maternal pregnancy U-F.[9] However, the relatively small number of data points at U-F levels at or below 0.2 mg/l may have introduced uncertainty in the observed monotonic associations. Accordingly, renewed calculations would be desirable with a better representation of low exposures. In addition, an update of the BMC calculation also appears warranted by the recently expanded results from the Early Life Exposure in Mexico to Environmental Toxicants (ELEMENT) cohort that included additional exposure data.[10]

We now present findings from the prospective Odense Child Cohort (OCC),[11,12] from a Danish municipality with fluoride concentrations in drinking water that are low by international standards.[13] We examine the possible association between prenatal fluoride exposure, as represented by maternal pregnancy U-F, and IQ at school age and conduct a joint BMC analysis that includes data from the two previous prospective studies.

Methods

OCC study cohort

All new pregnant women residing in Odense municipality were contacted between 2010 and 2012; 2874 of the 4017 women agreed to be enrolled in the OCC, while 374 dropped out before and after giving birth.[12] The present study population included 837 singleton mother–child pairs with results on child IQ, a maternal urine sample analyzed for fluoride, and information about parental education, child sex and preterm birth.

Fluoride exposure

While the addition of fluoride to drinking water is not legal in Denmark, elevated fluoride concentrations up to 1.5 mg/l naturally occur in groundwater in parts of the country,[13] and some types of tea, especially black tea, constitute an additional source of exposure.[14] In Odense municipality, the fluoride concentration in drinking water is rather low, i.e. 0.2–0.3 mg/l.[13] Given the retention in and

continuous mobilization from calcified tissues, the maternal U-F concentration reflects the level in the blood that is available for passage through the placenta to reach the fetus.[1] We analyzed maternal urine samples collected at 28 weeks' gestation to assess individual fluoride exposure. Some women ($N = 384$; 45.9%) provided a 24-h urine sample, while a spot fasting urine sample was otherwise obtained in the morning ($N = 453$; 54.1%).

The fluoride concentrations were measured with an Orion™ Ion Selective Electrode (ISE 9609 BNWP) (Thermo Fisher Scientific, Waltham, MA, USA) coupled to a Model 15 pH-metre from Denver Instruments (Sartorius, Göttingen, Germany) as previously described.[14,15] All samples were diluted prior to the analysis (1:1) with total ionic-strength-adjusted buffer (TISAB II) solution, as recommended by the manufacturer. The accuracy of the method was controlled in each batch of samples by analyzing the fluoride Certified Reference Material (CRM) at 0.52 ± 0.02 mg/l (Merck, Darmstadt, Germany). The limit of determination was 0.02 mg/l, and the average imprecision of the method was <5.1% (see Supplementary Material).

All U-F concentrations were adjusted for the creatinine concentration (U-Cr) using the following equation: $U\text{-}F_{CR} = (U\text{-}F/U\text{-}Cr) \times U\text{-}Cr_m$, where $U\text{-}F_{CR}$ is the creatinine-adjusted fluoride concentration (in mg/l), U-F is the measured fluoride concentration (mg/l) and $U\text{-}Cr_m$ is the median creatinine concentration of the samples.[5] In the two previous cohorts, the creatinine-adjusted U-F was assessed by comparable analytical protocols.[6,10,16]

Cognitive assessment

At age 7, the OCC children were invited to participate in the Danish version of the abbreviated Wechsler Intelligence Scales for Children to obtain a full-scale IQ (FSIQ), and 1570 completed the test.[11] Similarly, in the ELEMENT study,[5,17] a Spanish version of the Wechsler Abbreviated Scale of Intelligence was administered to 259 children at age 6–12 to derive an age-adjusted FSIQ. In addition, the Spanish version of the McCarthy Scales of Children's Abilities was administered to 287 children at age 4 to derive a General Cognitive Index (GCI) as a standardized composite score highly correlated with the FSIQ. In the Maternal-Infant Research on Environmental Chemicals (MIREC) study,[6] the 407 children's FSIQ were assessed at age 3–4 years in either English or French. These different measures of intellectual ability are considered equally valid and highly correlated,[18] thus justifying pooling the scaled (age-adjusted) IQ scores across the cohorts. Examiners were blinded to fluoride exposure status in the OCC, ELEMENT and MIREC studies.

Covariables

In the OCC, we considered maternal, child and socioeconomic variables correlated with child FSIQ for inclusion in the statistical analyses along with sex and preterm birth (gestational age <37 weeks).[11] As a key socioeconomic variable in the Danish population, parents reported their highest achieved education, which was categorized into short (high school or less, $N = 229$), intermediate (1–4 years post high school, $N = 446$) and long (>4 years post high school, $N = 162$), as based on the highest achieved education by either parent.[11] Dichotomized maternal smoking (yes, $n = 23$) and alcohol intake (yes, $n = 209$) during pregnancy, duration of breastfeeding (dichotomized as ≤3 and >3 months), school type (public or private), school grade (preschool or first) and psychologist examiner were also considered as covariables possibly associated with the FSIQ.

In the ELEMENT cohort,[5] covariables included gestational age in weeks, birth weight, sex, age at outcome measurement, maternal parity, maternal smoking history, marital status, age at delivery, maternal IQ, education and the specific sub-cohort identity. The MIREC study[6] selected similar covariables, including sex, city of residence, HOME score, maternal education and maternal race/ethnicity.

Statistical analysis

In the OCC, we first used covariable-adjusted linear regressions to model differences in child FSIQ score by the maternal U-F concentration. Because the U-F concentrations were positively skewed, a $\log_2$ transformation was applied. Thus, the regression coefficient (beta) therefore shows the difference in FSIQ for a doubling of the maternal U-F concentration.

A simple model accounted for sex, parental education and preterm birth. In a more comprehensive model involving a subset of mother–child pairs with additional information available, we added breastfeeding duration, maternal smoking and alcohol intake during pregnancy, age of children at the time of testing, examiner, school grade and school type. In both models, sex was introduced as a potential interaction term. In addition, the creatinine-adjusted U-F was stratified for the type of urine sample available (i.e. 24 h and spot), and a joint analysis was also conducted with a fixed effect for the type of urine sample. For descriptive purposes, a cubic spline model was also developed.

BMC calculations were carried out to assess the maternal U-F concentration associated with a benchmark response of a one-point reduction in child FSIQ score, as compared with an unexposed mother and the same profile of covariates. Then the results from the OCC study were compared and merged with the results previously obtained from the studies in Mexico[5] and Canada.[6] We used a similar statistical approach as in our previous benchmark calculations using results from the North American studies,[9] but we now included the updated ELEMENT cohort data with an increased sample size.[10]

In the benchmark analysis, we applied a linear dose–response function to approximate the effect of fluoride exposure (i.e. without a log scale for U-F). To better allow for different exposure distributions across studies, we derived two piecewise linear models, with breakpoints at 0.5 and 0.75 mg/l.[9] All models were fitted separately, including sex interaction, and adjusted for parity, maternal education, smoking, gestational age and the type of urine sample.

The regression coefficients in the linear model were used for the calculation of the BMC for each cohort, and joint BMCs were obtained by combining results from the three cohorts using a weighting approach.[9] The main result of the BMC analysis is the BMCL, i.e. the lower one-sided 95% confidence limit of the BMC.[19]

Differences between the regression coefficients in the three cohorts were tested using a Wald test, and we calculated the Akaike Information Criterion (AIC) to compare the fit of the different regression models. As the linear model is nested in the piecewise linear model, the fit of these two models can be directly compared. Thus, we calculated the *P* values for the hypothesis that the concentration response is linear in a test where the alternative is the piecewise linear model; a low *P* value indicates that the linear model has a poorer fit.

Results

Table 1 shows the main characteristics of the 837 OCC children included in the present study, as compared with the characteristics of all cohort children originally recruited. Of the 837 children in the present study, 435 (52%) were boys, and their average age was 7 years (6.5–8.3 years). Most (75.9%) of the children were breastfed for more than 3 months, and only 27 (3.2%) were born preterm. The maternal U-F concentrations averaged 0.58 mg/l (SD, 0.32; range, 0.08–3.04) (with a median of 0.52 mg/l) and did not differ between the sampling conditions (Supplementary table S1) nor with season. The creatinine-adjusted U-F results from the OCC and for the two other prospective cohorts are shown in figure 1.

After adjustment for covariables, the log2-converted maternal U-F was not significantly associated with the child's FSIQ score (table 2). A doubling in maternal fluoride concentration led to a slight decrease of 0.04 FSIQ points in girls and a small increase of 0.20 points

Table 1 Characteristics of 837 children from the OCC and included in the present study, as compared with the total cohort

Variable	Present cohort sample (*N* = 837) Mean (SD)/count (%)	Total cohort (*N* = 2448) Mean (SD)/count (%)
Sex		
Girl	402 (48.03)	1155 (47.18)
Boy	435 (51.97)	1293 (52.82)
Weight at birth (g)		
Mean (SD)	3.54 (0.52)	3.53 (0.53)
Missing	0	6
Breastfeeding duration		
<3 months	165 (24.05)	429 (25.09)
>3 months	521 (75.95)	1281 (74.91)
Missing	151	738
Maternal parity		
Primiparidae	457 (54.60)	1351 (55.21)
Multiparidae	380 (45.40)	1096 (44.79)
Missing	0	1
Gestational age <37 weeks		
No	810 (96.77)	2344 (96.10)
Yes	27 (3.24)	95 (3.90)
Missing	0	9
School type		
Public school	492 (80.00)	768 (78.77)
Private school	123 (20.00)	207 (21.23)
Missing	222	1473
School grade		
1st grade	431 (58.64)	742 (59.31)
Preschool	304 (41.36)	508 (40.61)
Missing	0	6
Age at test (years)		
Mean (SD)	7.15 (0.19)	7.18 (0.21)
Missing	0	938
FSIQ score		
Mean (SD)	99.44 (12.34)	99.43 (12.04)

Note: FSIQ, Full-Scale IQ.

in boys, but the interaction between sex and fluoride exposure was marginal (figure 2). Among important covariables, a higher parental education level predicted a higher FSIQ score[11] but was of marginal importance in the fluoride–IQ analysis. The type of maternal urine sample (fixed effect in the model) had no clear effect on FSIQ scores (−0.83; 95% confidence interval −2.52 to 0.86), with no difference in a likelihood ratio test for sample interaction.

When additional covariables were included, 377 observations in the OCC were disregarded due to missing information, and the comprehensive model included complete cases of 460 children (table 2). Again, only a weak association between the U-F and child FSIQ score was observed in the OCC, with no clear interaction between sex and fluoride exposure (table 2). Stratifying regression models by urine sample type did not reveal any significant associations between the maternal fluoride excretion variables and FSIQ score, and no significant interactions by sex were observed (table 2). A cubic spline for the log-transformed fluoride concentration again showed no association with FSIQ (Supplementary figure S1).

Relative to the OCC study, stronger associations between fluoride and IQ were observed among the MIREC boys and in the full sample of the ELEMENT cohort; regression coefficients for the girls in the MIREC cohort were fairly similar to the OCC study.[5,6] Nevertheless, the adjusted linear associations between maternal U-F and cognitive function in each of the three studies did not differ statistically ($P = 0.28$), and the combined data showed that an increase in maternal pregnancy U-F by 1 mg/l significantly predicted an IQ decrease by 2.06 points (Supplementary table S2).

Detailed results of the benchmark analysis are shown in Supplementary table S3. The joint BMC based on the linear model is 0.47 mg/l in maternal U-F, with a BMCL of 0.28 mg/l. The study-specific BMC and BMCL results show only minor variability. The BMCL values are generally larger in the OCC cohort compared with the two North American cohorts. In the OCC and MIREC studies, the joint linear results for both sexes were closer to the ones obtained for boys alone, while the results for girls seemed to differ. For the linear model, the joint BMCL for the three studies (0.28 mg/l) is similar to the one obtained from the piecewise model with a breakpoint at 0.75 (0.23 mg/l), while the piecewise model with a lower breakpoint at 0.5 showed a higher BMCL of 0.42 mg/l. This tendency was apparent in the combined analysis as well as in the sex-specific BMCL calculations.

Although the piecewise model is more flexible than the linear model, the AIC results did not reveal any important differences between the model fits. The same conclusion was reached based on likelihood testing where the linear model was not rejected, i.e., with $P = 0.46$ and 0.11 when the linear model was tested against piecewise linear models with breakpoints at 0.5 and 0.75, respectively.

Discussion

Experimental and cross-sectional studies have provided evidence of fluoride neurotoxicity, especially during early brain development.[1,20] Jointly with two prospective epidemiology studies on populations exposed to fluoridated water or fluoridated salt and other sources,[5,6] both of them rated as low risk of bias,[1] the present study adds new, comparable evidence from a population exposed to low water-fluoride levels. In the absence of other important fluoride sources, U-F concentrations will often be similar to the concentration in drinking water,[21,22] but substantial elevations can occur from tea drinking.[4] The two studies from North America showed creatinine-adjusted U-F concentrations averaging 0.89 mg/l (Mexico City) and 0.85 and 0.44 mg/l in fluoridated and non-fluoridated cities (Canada), respectively. Ranges of U-F levels from these two prior studies overlapped with the exposures encountered in the OCC study that reflected the low fluoride concentrations of 0.2–0.3 mg/l in the local drinking water,[13] as likely increased by tea drinking and other sources of exposure (figure 1). We calculated regression values for linear and, for comparison, piecewise linear dose–response functions for the new, low-exposure study so that it could be compared and merged with the previous findings.[9]

In the OCC study, we did not find evidence of fluoride neurotoxicity at low maternal U-F concentrations in the third trimester. This finding is consistent with the trimester-specific MIREC results,[23] as possibly affected by the imprecision of U-F measured in a single spot sample. Given the overlapping ranges of exposure, the fluoride–IQ relationships in the three studies were similar. Although the fluoride association was not statistically significant in the OCC cohort by itself, the joint association was significant when combined with information from the other two cohorts. This result can be explained by a relatively high variability in the OCC result, whereas the combined result is based on a larger sample size.

The joint BMC was found to be 0.45 mg/l (BMCL, 0.28 mg/l), i.e. slightly higher than previously found (BMC, 0.33 mg/l; BMCL, 0.20 mg/l) for the two North American cohorts alone.[9] Also, if instead relying on the GCI as a marker of child intelligence with the slightly larger Mexican sample, the results are similar (Supplementary table S3), as also seen previously.[9] Given the combined observations on more than 1500 mother–child pairs, the overall BMC results likely reflect a threshold for adverse cognitive effects of prenatal fluoride exposure that occur at levels prevalent in many countries.[21]

Due to the brain's continued vulnerability across early development,[24] infancy may also be a vulnerable period of exposure, especially among bottle-fed infants who receive formula reconstituted with fluoridated water.[23,25] However, in the OCC, exposure to fluoride in infancy is expected to be low because the majority of children were breastfed for at least 3 months (more than three out of four

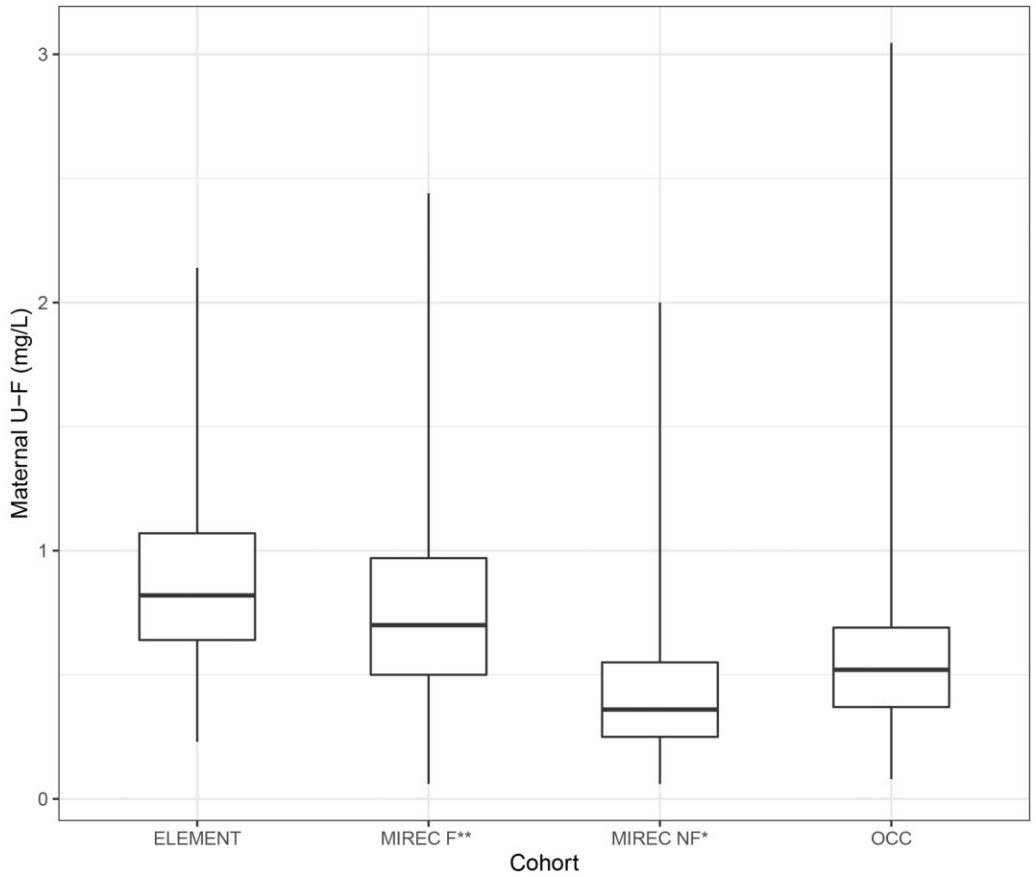

Figure 1 Maternal creatinine-adjusted urine-fluoride concentrations (U-F) in the three cohorts, where MIREC has been split into fluoridated (F) and non-fluoridated (NF) communities. Medians, quartiles, and 95% ranges are shown

Table 2 Predicted difference in FSIQ score for a doubling in the creatinine-adjusted fluoride concentration in mother's urine during pregnancy

	All samples (mg/l)		Spot samples (mg/l)		24-h samples (mg/l)	
	N	**β ^ (95% CI)**	***N***	**β ^ (95% CI)**	***N***	**β ^ (95% CI)**
Simple model[a]						
All	837	0.08 (−1.14 to 1.30)	453	−0.05 (−1.55 to 1.45)	384	0.36 (−1.73 to 2.45)
Girls	402	−0.05 (−1.80 to 1.70)	216	−0.83 (−2.98 to 1.32)	186	0.67 (−2.35 to 3.70)
Boys	435	0.20 (−1.47 to 1.87)	237	0.68 (−1.40 to 2.77)	198	0.09 (−2.75 to 2.93)
Comprehensive model[b]						
All	460	0.18 (−1.39 to 1.76)	223	0.58 (−1.53 to 2.69)	237	−0.72 (−3.24 to 1.80)
Girls	221	−0.40 (−2.52 to 1.71)	101	−0.78 (−3.64 to 2.08)	120	−0.91 (−4.27 to 2.45)
Boys	239	0.87 (−1.41 to 3.15)	122	2.14 (−0.92 to 5.20)	117	−0.50 (−4.13 to 3.13)

Notes: Results are shown for the total material with urine sample type as a fixed effect and for stratified analyses of the urine sample types by linear regression with sex as interaction. The simple model is adjusted for parental education and preterm birth. The comprehensive model accounts also for age at the time of testing, examiner, breastfeeding duration, school grade, school type and smoking and alcohol habits of the mother during pregnancy.
P values for sex interaction: a: 0.84 and b: 0.41.

children)[11] and because of the low fluoride concentration in the local drinking water.[13] As expected, the effects of fetal exposure (i.e. as represented by the U-F in pregnancy) remained significant in the MIREC study when adjusting for breastfeeding.[6] Likewise, in the ELEMENT study, the association of IQ with maternal U-F was only marginally reduced after controlling for child U-F. Further, fluoride exposure in preschool-age[23] and at school age[5] showed a weaker and non-statistically significant association with child IQ. These findings support that fetal brain development is highly vulnerable to fluoride exposure.

The IQ losses seen at elevated fluoride exposures are in accordance with findings in cross-sectional studies where the children examined had likely been exposed to chronic water-fluoride concentrations throughout development.[3,4] Similar results have been found in more recent studies that included areas with elevated water-fluoride levels.[26,27] These findings support that fluoride is a developmental neurotoxicant (i.e., causing adverse effects on brain development in early life) when exposures exceed a low background level. Given the ubiquity of elevated fluoride exposure, a recent study estimated that the population impact of adverse effects from fluoride

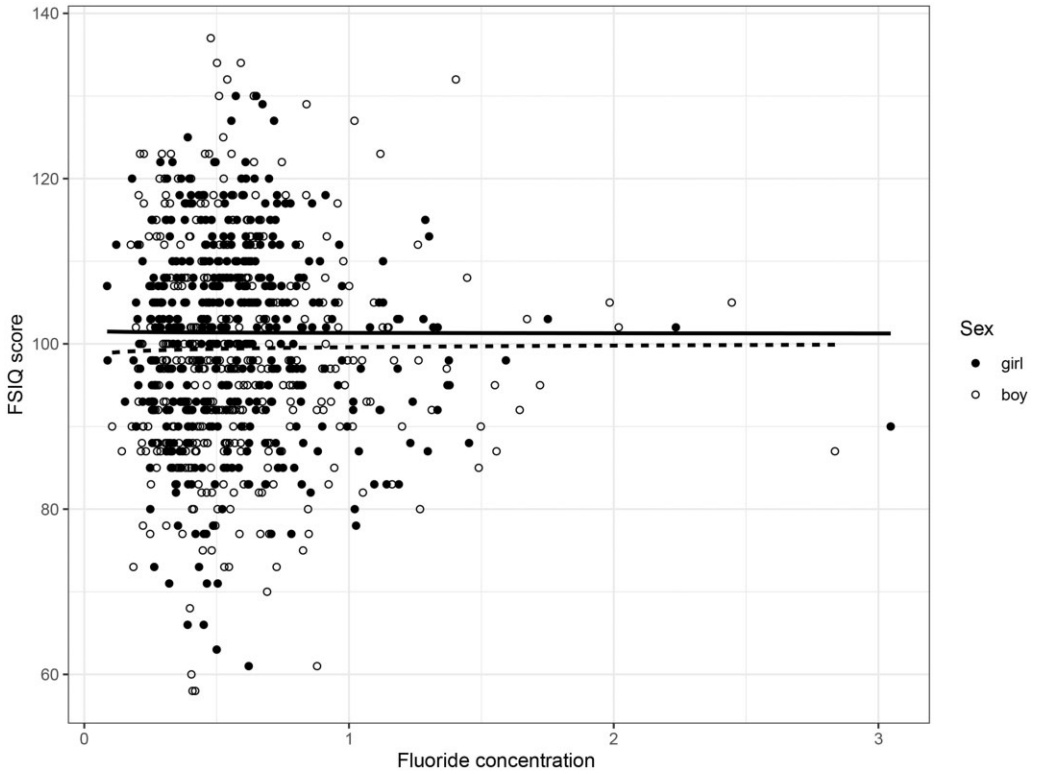

Figure 2 Creatinine-adjusted maternal U-F concentration during pregnancy as a predictor of Full-Scale IQ (FSIQ) in OCC children at age 7 with interaction by sex. The linear regression is adjusted for parental education and preterm birth (simple model). The type of urine sample is considered as a fixed effect. The filled circles and the full regression line are for girls, and the open circles and the dotted line refer to the boys

may exceed the one associated with other toxic elements like lead, mercury, and arsenic,[28] as also concluded in another modelling study.[29] Adverse effects of the latter trace elements are associated with blood concentrations substantially lower than the serum-fluoride concentration corresponding to the BMC.[24]

The OCC study focused on the FSIQ as a cognitive function indicator. Although fluoride neurotoxicity may not affect all cognitive domains equally,[10,23] the abbreviated WISC-V used in the OCC was not separated into subdomains. In addition to FSIQ as a main outcome, the ELEMENT cohort found that elevated maternal U-F concentrations were also associated with higher parent ratings of inattention on the Conners' Rating Scale, a common symptom of Attention-Deficit/Hyperactivity Disorder (ADHD).[16] Other studies on attention outcomes found an association between water fluoridation and diagnosis of ADHD in Canada, although cross-sectional data on child U-F did not replicate this association,[30] perhaps reflecting water-fluoride as a more stable proxy of early-life exposure compared with U-F measured in a later spot sample.

Individual vulnerability, including genetic predisposition,[31,32] may play a role in fluoride neurotoxicity. In the original MIREC study, boys were more vulnerable to prenatal fluoride neurotoxicity than girls,[6] perhaps suggesting sex-dependent endocrine disruption.[33] However, this tendency was not replicated in the present study. Other predisposing factors, such as iodine deficiency in pregnancy,[34] may also affect the outcome, though not likely in Denmark, where table salt is iodized. Overall, variability in such factors may result in difficulties documenting adverse cognitive effects at minor elevations of fluoride exposure.

Both the North American studies adjusted for a substantial number of covariables, including other neurotoxicants. Prenatal and early postnatal exposure to lead did not influence the fluoride-associated IQ deficits in the ELEMENT study.[5] Likewise, adjustment for arsenic, lead, perfluorooctanoic acid and mercury exposure did not appreciably change the estimates in the MIREC study.[6] The OCC cohort data were not adjusted for these other neurotoxicants, though the environmental exposures are low in the Odense area. Parental education was a key covariable in the Danish community,[11] while other socioeconomic factors were also considered important in the more diverse MIREC and ELEMENT populations.

The availability of 24-h urine samples might provide more precise fluoride exposure information, compared with morning spot urines, but the creatinine-adjusted results in the present study failed to show any important difference between the two exposure measures in association with the IQ outcome. Although maternal U-F seems to correlate with fluoride concentrations in serum that may pass the placenta,[1,21] the amount of fluoride that reaches the brain during early development is unknown. In addition, the OCC study collected urine on only one occasion during the third trimester, likely increasing imprecision, as suggested by previous studies that included multiple urine samples throughout pregnancy.[6,35] Thus, the maternal U-F averaged over three trimesters is a stronger predictor of child IQ than trimester-specific U-F.[23] Further, the creatinine-adjusted U-F is known to be the highest in the third trimester,[36] suggesting possible overestimation of fluoride exposure in the OCC cohort compared with the two other studies that relied on averages across trimesters. When occurring at random, such imprecision will tend to underestimate the fluoride association with the neurotoxicity outcome.[37]

The pooling of results from three prospective cohorts conducted in areas with wide ranges of overlapping exposure levels offers strong evidence of prenatal neurotoxicity, and these findings should inspire a revision of water-fluoride recommendations aimed at protecting pregnant women and young children. For example, the World Health Organization's recommendation of 1.5 mg/l as an upper limit for fluoride in drinking water[21] does not consider developmental neurotoxicity. While fluoride has dental health benefits,[38] the recent report on oral health from the National Institutes of Health (NIH)[39] emphasized improvements in preventing caries due to the increased topical use of new dental dentifrices, fluoride sealants and varnishes

in children above 2 years of age, i.e. after the teeth have erupted.[2,40] Although the NIH report stated that water fluoridation benefits the entire population (page I-39),[39] fluoridated toothpaste and other topical treatment are favoured as primary means of caries prevention.[2]

The present study contributes new information on the weak association between fairly low levels of prenatal fluoride exposure and cognitive function at school age in a Danish birth cohort. A possible negative association could not be confirmed within the exposures measured in the OCC. When merged with data from two previous prospective studies at higher exposures, a revised BMCL fluoride concentration of about 0.3 mg/l in maternal pregnancy urine suggests that elevated fluoride intakes, whether from drinking water, black tea, or other sources, during pregnancy may require public health attention.

Supplementary data

Supplementary data are available at *EURPUB* online.

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Author contributions

P.G. and E.B.J. supervised this study and are the guarantors. P.G., A.M. and E.B.J. designed the study. P.G., F.N., I.H.B., N.B., C.G., C.T. and H.H. contributed to data collection. I.B.H., N.B., C.G., C.T. and H.H. contributed to data analysis and interpretation. All authors provided advice regarding critically important intellectual content and helped to draft the manuscript and approved submission of this manuscript.

Conflicts of interest: P.G. has served as an expert on the hazards of environmental chemicals on behalf of the plaintiffs in Food & Water Watch v. U.S. EPA, where H.H. served as a fact witness regarding ELEMENT research on fluoride. All other authors have no interest to declare regarding this research.

Data availability

The dataset analyzed in this study is not publicly available due to national data security legislation on sensitive personal data.

Key points

- In the OCC birth cohort, prenatal fluoride exposure was estimated using creatinine-adjusted maternal urine-fluoride concentrations, and child IQ was determined at age 7 years. No clear association was found at the relatively low levels of exposure.
- Merging these results with data from two more highly exposed cohorts strengthened the dose–response assessment and allowed calculation of more accurate benchmark concentrations for developmental fluoride neurotoxicity.
- Because fluoride excretion may vary over time and sources of fluoride intake were not assessed, the exposure assessment in the three cohorts may involve some degree of imprecision that could dilute the findings.
- While analyses were controlled for child sex, parental education, and prematurity, population differences may not have been fully captured by adjustment for covariables.
- The joint benchmark concentration results reflect an approximate threshold for fluoride neurotoxicity at about 0.3 mg/l in urine, which is more reliable than previous results, as now based on more than 1500 mother–child pairs from prospective studies.

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From: Arne Christensen
Sent: 10/16/2023 10:36:12 AM
To: DOH WSBOH
Cc:
Subject: Friday Pfizer news release and vaccine mandates

External Email

I'm writing to call the Health Department's attention to the linked press release from Pfizer.
https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.pfizer.com%2Fnews%2Fpress-release%2Fpress-release-detail%2Fpfizer-amends&data=05%7C01%7Cwsboh%40sboh.wa.gov%7Ccb53b48054f54624477a08dbce6e6328%7C11d0e

-us-government-paxlovid-supply-agreement-and

The bottom of the Pfizer release has some cautionary paragraphs about Comirnaty. For example:
"Myocarditis (inflammation of the heart muscle) and pericarditis (inflammation of the lining outside the heart) have occurred in some people who have received mRNA COVID-19 vaccines. Myocarditis and pericarditis following Pfizer-BioNTech COVID-19 vaccines have occurred most commonly in adolescent males 12 through 17 years of age."
And: "The Pfizer-BioNTech COVID-19 Vaccine may not protect everyone."

Does the Board understand what folly it would've been to force adolescents to get this vaccine in order to go to public school?

Arne Christensen

From: bill teachingsmiles.com
Sent: 10/6/2023 8:49:13 AM
To: DOH WSBOH
Cc:
Subject: My Public Comments

attachments\459227240CA24727_WSBH 10 9 23 Osmunson.docx

External Email

Washington State Board of Health, Public Comment, October 2023

Bill Osmunson DDS MPH

Dear Washington State Board of Health and Department of Health,

The Board's website <https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fsboh.wa.gov%2Fsites%2Fdefault%01%2FSledge%2520-%2520BOH%2520Strategies.pdf&data=05%7C01%7Cwsboh%40sboh.wa.gov%7C0ee00bfee3434345e1fd0, states: "Access to community water fluoridation benefits the health of everyone: children, adults, and seniors (wrong). Recommendation: Expand and maintain access to community water fluoridation." Regardless of science and logic, the Board recommends expanding the policy rather than reviewing the science. . . a definition of "fake science."

The Board's unscientific claim is unethical, illogical and harming many. Dr. Limeback PhD, DDS provides this comparison.

See Attached graph: Prenatal Fluoride = Prenatal Alcohol

Wait, wait, alcohol is a choice and fluoridation is authority mandated.

Who should you trust? The scientific literature? The Food and Drug Administration? The National Toxicology Program? Or dental and public health industry?

"The FDA defines a drug, in part, as "intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease" and "articles (other than food) intended to affect the structure or any function of the body of man or other animals." Refer to section 201(g) of the Federal Food Drug and Cosmetic Act <https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fuscode.house.gov%2Fview.xhtmlprelim-title21-section321%26num%3D0%26edition%3Dprelim&data=05%7C01%7Cwsboh%40sboh.wa.gov%7C0ee00bf(FD&C Act)."

FDA continues: "How is a product's intended use established?

Intended use may be established in a number of ways. The following are some examples:

* Claims stated on the product labeling, in advertising, on the Internet, or in other

promotional materials. Certain claims may cause a product to be considered a drug, even if the product is marketed as if it were a cosmetic. Such claims establish the product as a drug because the intended use is to treat or prevent disease or otherwise affect the structure or functions of the human body. Some examples are claims that products will restore hair growth, reduce cellulite, treat varicose veins, increase or decrease the production of melanin (pigment) in the skin, or regenerate cells.
* Consumer perception, which may be established through the product's reputation. This means asking why the consumer is buying it and what the consumer expects it to do.
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Fluoride ingestion has never been approved by the FDA CDER.

Industry circumvented the FDA CDER and the FDA for fluoridated bottled water and was "notified" of a health claim.

1. The WSBH's claim makes fluoridation a drug by FDA, RCW, FD&C Act definitions of drugs.
2. The WSB of Pharmacy (now called "Pharmacy quality assurance commission") determined fluoride is a drug.
3.

RCW RCW 69.50.101 <https://gcc02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fapp.leg.wa.gov%2FRCW%2Fdefaul
"(x) [(24)] "Drug" means (1) [(a)] a controlled substance recognized as a drug in the official United States pharmacopoeia/national formulary or the official homeopathic pharmacopoeia of the United States, or any supplement to them; (2) [(b)] controlled substances intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in individuals or animals; . . . ." Fluoride is listed in the US pharmacopoeia.

4.

Is fluoride a drug or poison?

"RCW 69.38.010 <https://gcc02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fapp.leg.wa.gov%2FRCW%2Fdefaul
"Poison" defined.

As used in this chapter "poison" means:

(1) Arsenic and its preparations;

(2) Cyanide and its preparations, including hydrocyanic acid;

(3) Strychnine; and

(4) Any other substance designated by the pharmacy quality assurance commission which, when introduced into the human body in quantities of sixty grains or less, causes

violent sickness or death."

[2013 c 19 § 52
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Flawfilesext.leg.wa.gov%2Fbienniu
14%2FPdf%2FBills%2FSession%2520Laws%2FHouse%2F1609.SL.pdf%3Fcite%3D2013%2520c%252019%
; 1987 c 34 § 1
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fleg.wa.gov%2FCodeReviser%2Fd
.] (Emphasis supplied)

Sixty grains is 3,888 milligrams. Wolford estimated a lethal dose of fluoride at 5 mg/kilogram of body weight. A 10 Kg toddler could die ingesting 50 mg of fluoride. The WSBP determined 50 mg is less than 3,888 mg. It does not take a math major to realize 50 is less than 3,888. However, the Board of Health does not appear to understand the math and is harming the public.

Certainly the WSBH does not consider hydrofluorosilicic acid (fluoridation chemicals) to be a "natural mineral" or poison such as "soluble inorganic forms like arsenious acid (H_3AsO_3), and arsenic acid (H_3AsO_4), which are the compounds of concern in drinking water." If the Board does not place fluoride added to public water in the definition of drug, then the WSBH is promoting the administration without consent of a known poison, "fluoride." Poisoning people is not the Board's intent. Treating people is the Board's intent, which makes fluoride a drug, regulated as a drug under drug laws. GET FDA CDER APPROVAL or stop promoting fluoride ingestion.

Because fluoride is a drug, it is regulated under the FDA CDER (Food and Drug Administration Center for Drug Evaluation and Research). To date the FDA CDER has not approved the ingestion of fluoride because the evidence of efficacy at any dosage is "incomplete."

The FDA answers the question:

"1. Is it legal to import medicines into the U.S. from other countries?

"No. The United States Federal Food, Drug, and Cosmetic Act (The Act) prohibits the interstate shipment (which includes importation) of unapproved new drugs. Thus, the importation of unapproved new drugs, whether for personal use or otherwise, violates the Act and is illegal. Unapproved new drugs include any drugs – including drugs approved in another country but which lack FDA approval -- that have not been distributed in accordance with FDA approval."

Fluoridation products are now coming in from China, in part, because the USA does not manufacture enough and China, based on good scientific evidence, does not fluoridate their public water. China does not want their children to have lower IQ.

Anytime new science helps us change our understanding of an issue, we must carefully review and protect the public.

The WSBH must start to protect the public from excess fluoride exposure. Start by warning/advising pregnant mothers to not ingest fluoridated water and not make formula with fluoridated water.

Sincerely,

Bill Osmunson DDS MPH

_____
From: Jotform
Sent: 10/27/2023 6:49:34 AM
To: DOH WSBOH
Cc:
Subject: Re: Stop The Child Vaccine Mandate Petition - Denis Sparks

External Email

<https://cdn.jotfor.ms/assets/img/logo2021/jotform-logo.png>

Stop The Child Vaccine Mandate Petition

Name

Denis Sparks

Email

denissparks@comcast.net

Zip

98011

Cell Phone Number

(206) 3216622

From: WA.gov
Sent: 10/4/2023 2:18:49 PM
To: DOH WSBOH
Cc:
Subject: Webform submission from the WA.gov website.

External Email

This email was sent from the Government Agency Directory <https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwa.gov%2Fagency&data=05%7C0 found on WA.gov. The message and details of the person contacting you are as follows:

Your Name
leslie Citlalli Rodriguez

Your Email
rodriguezleslie129@gmail.com <mailto:rodriguezleslie129@gmail.com>

Subject
SPAIN DISHES

Message
The boy Jacob stach has HIV AND STDs . blames it on somebody like me leslie rodriguez who has never got intercourse after dating a japanese boy who is extremely healthy from my behalf known justin. leslie todriguez is worry how clinics , impoverishment boys attitudes play with blood clots in leslie human anatomy in United states .

Jacob stach 16 hoffmanshof hanover Germany
Leslie Rodriguez , CA , USA

LESLIE RODRIGUEZ TALK TO YOU YOU SHOULD HAVER HELP THAT BOY WHO LIKES ANYBODY FOR SEX NEEDS.

Note: Please do not reply to this email as this inbox is not monitored. If you have questions regarding this service, please use our contact form <https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwa.gov%2Fwebform%2Fcontact-wagov-team&data=05%7C01%7CWSBOH%40SBOH.WA.GOV%7Cda679ed1212744bb269c08dbc51f7d63%7C11d0
.

From: Dusty Flamand
Sent: 10/25/2023 5:12:22 PM
To: hisgarness@comcast.net,DOH WSBOH,sheriff@co.clallam.wa.us,Berry, Allison 2 (DOHi),shahidafatin@gmail.com,ncarr@cityofpa.us,gbsjrmd@sisna.com,Mark.Ozias@ClallamCountyWA.gov
Herald,
(DOHi),chutton@heraldnet.com,customerservice@theolympian.com,news@spokesman.com,voice@spokesm
City Herald (DOHi),Van De Wege, Kevin,Chapman, Mike (LEG)
Cc:
Subject: Re: The Plandemic Litigation Is Out of the Gates

External Email

Yepper. Only 1 4# fish. Got planar line in prop and had to find lost board yesterday. So Only fished 2 hours yesterday. Cold, windy and big water today so fished 4 hours. No rain or snow so that was a blessing.

Note: You need to hit ... or Show History link at end of message to see previous or forwarded emails.

"Jesus is Lord"

Gene Dusty Flamand

A-I Consolidated, Inc.

4970 N Manufacturing Way Ste 2

Coeur D Alene, ID 83815

www.aiconsol.com
<https://gcc02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.aiconsol.com%2F&data=05%

Personal Email: dustyfl@protonmail.com

Personal Cell: 208-659-3319

Sent from Proton Mail mobile

-------- Original Message --------
On Oct 25, 2023, 4:33 PM, Garry Blankenship < hisgarness@comcast.net> wrote:

This is of particular importance to all Boards of Health, medical boards and hospitals. You / they can disregard at their own peril. It is a succinct summary of the healthcare practicing future and an explanation of how our "pandemic" manifested..

Attached please find a litigation case summary against:

Mr. Alex Azar, DEFENDANT, (H.H.S.)
Dr. Anthony Fauci, DEFENDANT
Dr. Peter Daszak, DEFENDANT
Dr. Ralph Baric, DEFENDANT
FDA, DEFENDANT
CDC, DEFENDANT
NIAID, DEFENDANT
MODERNA, DEFENDANT
PFIZER, DEFENDANT

The full text can be found at
https://prosecutenow.io/dld/LitigationConsolidationSummary.pdf
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fprosecutenow.io%2Fdld%2FLitiga

This is one health violations lawsuit of many and the inevitable multitudes to follow. Dr. Martin is a data analytical genius. He specializes in data verification. His company does patent research and other data intense services. Much can be argued in the courts, but the facts produced by Dr. Martin are bullet proof. It is my hope that the success of this lawsuit trickles down to State and local Boards of Health, censuring medical boards, as well as the Hospitals and staff violating the Hippocratic Oath for Government offered bribery money. Health professionals must be held accountable for their pandemic harmful practices.

Sincerely,

Garry Blankenship

Executive Summary for Litigation of PLANDEMIC Crimes…

Dr. David E. Martin

Since the publication of the ***Global Vaccine Action Plan 2011-2020*** in February of 2013, Drs. Anthony Fauci of the U.S. National Institutes for Allergies and Infectious Diseases (NIAID) and Chris Elias of the Bill & Melinda Gates Foundation have declared the commercial dictum: "to extend immunization to everyone."[1] Declaring vaccination an essential "human right", they spent the decade seeking to develop and deploy a "universal vaccination". Lamenting their failure before Congress and the World Health Organization, they complained that the public was reticent to accept a "universal" vaccine. Possibly informed by the compelling failure of the influenza "vaccines" which failed to disrupt annual flu seasons, the public wasn't falling for their obsession.

In 2014, Dr. Peter Daszak (veterinarian and NIAID pandemic engineer) lamented:

"…until an infectious disease crisis is very real, present, and at an emergency threshold, it is often largely ignored. To sustain the funding base beyond the crisis, he said, we need to increase public understanding of the need for MCMs such as a pan-influenza or pan-coronavirus vaccine. ***A key driver is the media, and the economics follow the hype. We need to use that hype to our advantage to get to the real issues. Investors will respond if they see profit at the end of process****, Daszak stated."*[2] (emphasis added)

Missing the opportunity to leverage the deadly flu season of 2018, Fauci, Elias, and Daszak announced that they would construct a scenario to mandate that ALL countries respond to a "lethal respiratory pathogen." Published in September 2019, these criminal conspirators put humanity on a collision course with a manufactured "pandemic" to create vaccine dependency.

"A rapidly spreading pandemic due to a lethal respiratory pathogen (whether naturally emergent or accidentally or deliberately released) poses additional preparedness requirements. Donors and multilateral institutions must ensure adequate investment in development of innovative vaccine and therapeutics, surge manufacturing capacity, broad-spectrum antivirals and appropriate non-pharmaceutical interventions. All countries must develop a system for immediately sharing sequences of any new pathogen for public health purposes, along with the means to share limited medical countermeasures across countries.

Progress indicator(s) by September 2020

Donors and countries commit and identify timelines for: financing and development of a universal influenza vaccine, broad-spectrum antivirals and targeted therapeutics. WHO and its

[1] https://www.who.int/publications/i/item/global-vaccine-action-plan-2011-2020
[2] https://www.ncbi.nlm.nih.gov/books/NBK349040/

Member States develop options for standard procedures and timelines for sharing of sequence data, specimens and medical countermeasures for pathogens other than influenza."[3]

One month later, they announced that they would use SARS Coronavirus as a "desktop" simulation during the Event 201 exercise funded by Open Philanthropy (Facebook's Dustin Moskovitz) and hosted by the Bill & Melinda Gates Foundation, the World Economic Forum, and Johns Hopkins University.

COVID-19, the first "disease" to have NO diagnostic test to measure its existence, was a series of symptoms aggregated to form an influenza-like illness to create the illusion of a pandemic. Now discredited, the RT-PCR test (amplified to cycles that could simulate any nucleic acid sequence) was used to create the illusion of infection and spread fear around the world. And all of this was to force the public adoption of a novel mRNA "vaccine" which, by the FDA's own classification is a gene therapy[4] – not public health immunization.

Over one year later it has become self-evident that the "vaccination" terminology was adopted for branding purposes (and to attempt to secure immunity shields for manufacturers) to coerce the population into accepting an experimental, dangerous gene therapy technology. The injected are getting sick. The injected are dying "of COVID-19". There is NO evidence that the injections have disrupted transmission as the recent "Omicron variant" has made abundantly clear.

THIS WAS NEVER ABOUT PUBLIC HEALTH. This was an organized crime racket to coerce the public's adoption of a novel technology that has NEVER been shown to be safe or effective under the definitions of the FDA, the Federal Trade Commission's Deceptive Medical Practices standard, or under any other statutory criteria.

It is long past time to hold the criminals accountable for:

- Domestic and International Terrorism,
- Deceptive Medical Practices,
- Reckless Endangerment and Homicide,
- Racketeering and Anti-trust collusion, and,
- Biological Weapons Construction and Deployment.

I have been the solitary voice calling for this accountability since the inception of this scheme and I'm now leading efforts to litigate all of the matters identified above as well as hold the conspiring commercial interests liable for tax and securities fraud. In the former, each manufacturer has misused the In Process Research and Experimentation Tax Credit

[3] https://reliefweb.int/sites/reliefweb.int/files/resources/GPMB_annualreport_2019.pdf
[4] https://www.sec.gov/Archives/edgar/data/1682852/000168285220000017/mrna-20200630.htm

misrepresenting sponsored research as qualified exemptions. In the latter, each manufacturer has violated that Bayh-Dole Act and has thereby misrepresented proprietary interests to their shareholders in violation of SEC laws.

-

Washington State Board of Health, Public Comment, October 2023

Bill Osmunson DDS MPH

Dear Washington State Board of Health and Department of Health,

The Board's website, states: **"Access to community water fluoridation benefits the health of everyone: children, adults, and seniors (wrong). Recommendation: Expand and maintain access to community water fluoridation." Regardless of science and logic, the Board recommends expanding the policy rather than reviewing the science. . . a definition of "fake science."**

The Board's unscientific claim is unethical, illogical and harming many. Dr. Limeback PhD, DDS provides this comparison.

Prenatal fluoride = prenatal alcohol

Insert "alcohol or fluoridated water" here

Fetal Alcohol Syndrome	Fetal Fluoride Syndrome
Slow physical growth, joint deformities	premature birth, low birth weight, slow growth
Problems with kidneys, bones	dental, bone and kidney problems
intellectually disability, learning disorders, poor memory	lowered IQ, learning disorders
hyperactivity	ADHD
mood changes, poor social skills, behaviour problems	not studied in humans

based on updated research, higher prenatal fluoride exposure is linked to mood changes, altered social skills, and poor behaviour.

Wait, wait, alcohol is a choice and fluoridation is authority mandated.

Who should you trust? The scientific literature? The Food and Drug Administration? The National Toxicology Program? Or dental and public health industry?

"The FDA defines a drug, in part, as "intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease" and "articles (other than food) intended to affect the structure or any function of the body of man or other animals." Refer to section 201(g) of the Federal Food Drug and Cosmetic Act (FD&C Act)."

FDA continues: "How is a product's intended use established?

Intended use may be established in a number of ways. The following are some examples:

- Claims stated on the product labeling, in advertising, on the Internet, or in other promotional materials. Certain claims may cause a product to be considered a drug, even if the product is marketed as if it were a cosmetic. Such claims establish the product as a drug because the intended use is to treat or prevent disease or otherwise affect the structure or functions of the human body. Some examples are claims that products will restore hair growth, reduce cellulite, treat varicose veins, increase or decrease the production of melanin (pigment) in the skin, or regenerate cells.
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Fluoride ingestion has never been approved by the FDA CDER.

Industry circumvented the FDA CDER and the FDA for fluoridated bottled water and was "notified" of a health claim.

1. **The WSBH's claim makes fluoridation a drug by FDA, RCW, FD&C Act definitions of drugs.**
2. **The WSB of Pharmacy (now called "Pharmacy quality assurance commission") determined fluoride is a drug.**
3. RCW **RCW 69.50.101 "(x) [(24)] "Drug" means (1) [(a)] a controlled substance recognized as a drug in the official United States pharmacopoeia/national formulary or the official homeopathic pharmacopoeia of the United States, or any supplement to them; (2) [(b)] controlled substances intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in individuals or animals; . . . ." Fluoride is listed in the US pharmacopoeia.**

4. **Is fluoride a drug or poison?**

"RCW 69.38.010 "Poison" defined.

As used in this chapter "poison" means:

(1) Arsenic and its preparations;

(2) Cyanide and its preparations, including hydrocyanic acid;

(3) Strychnine; and

(4) Any other substance designated by the pharmacy quality assurance commission which, when introduced into the human body in quantities of sixty grains or less, causes violent sickness or death."

[2013 c 19 § 52; 1987 c 34 § 1.] (Emphasis supplied)

Sixty grains is 3,888 milligrams. Wolford estimated a lethal dose of fluoride at 5 mg/kilogram of body weight. A 10 Kg toddler could die ingesting 50 mg of fluoride. The WSBP determined 50 mg is less than 3,888 mg. It does not take a math major to realize 50 is less than 3,888. However, the Board of Health does not appear to understand the math and is harming the public.

Certainly the WSBH does not consider hydrofluorosilicic acid (fluoridation chemicals) to be a "natural mineral" or poison such as "soluble inorganic forms like arsenious acid (H_3AsO_3), and arsenic acid (H_3AsO_4), which are the compounds of concern in drinking water." If the Board does not place fluoride added to public water in the definition of drug, then the WSBH is promoting the administration without consent of a known poison, "fluoride." Poisoning people is not the Board's intent. Treating people is the Board's intent, which makes fluoride a drug, regulated as a drug under drug laws. GET FDA CDER APPROVAL or stop promoting fluoride ingestion.

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Anytime new science helps us change our understanding of an issue, we must carefully review and protect the public.

The WSBH must start to protect the public from excess fluoride exposure. Start by warning/advising pregnant mothers to not ingest fluoridated water and not make formula with fluoridated water.

Sincerely,

Bill Osmunson DDS MPH

TO: Washington State Board of Health, November 8, 2023

TOO MUCH FLUORIDE: THE BOARD OF HEALTH HAS NO IDEA HOW MUCH FLUORIDE AN INDIVIDUAL IS INGESTING.

In a public forum debate with a Harvard Professor, I noticed he was less than clear with the audience, trying to assume fluoridated water was the only source of fluoride. I made his deception clear. The public chose to stop fluoridation. Is the WSBOH also being intentionally deceptive in their claim of fluoridation's safety? Fluoridated water represents an estimated 30% to 70% of total exposure of fluoride, for about 90% of the public. Fluoridation is a concentration not a dosage.

WATER: The mean intake of water is about one liter/day. 90th percentile is about 2 liters/day. The EPA ignores 10% of the public drinking the most water. Ten percent of Washington State is 770,000. Some ingest over ten times the statistical mean of 1 liter/day. Trying to dispense a drug in water lacks dosage control and is an insane public health practice. And that is just exposure from water. See National Academies, "Fluoride in Drinking Water" and Review

MEDICATIONS: At 1,500 ppm (water 0.7 ppm) toothpaste has a significant potential for excess fluoride exposure. At age 11 I watched my daughter brush her teeth and told her to spit before swallowing… and I watched as she leaned over the sink and her little eve's apple bobbed and she spit. Swallowing is a reflex and toothpaste is swallowed. Although pharmaceutical companies attempt to make the fluoride in medications not biologically available, on average about 10% is absorbed in the body. General anesthesia with fluoride (often used with children) can cause a huge spike in fluoride exposure.

FOODS: Fluoride tends to be a higher concentration in coffee, tea, sodas, shellfish, grapes, potatoes, baby foods, broths, stews, hot cereals made with tap water, artificial sweeteners, mechanically deboned meat and more.

POST-HARVEST FUMIGANT (sulfuryl fluoride): The EPA/Congress/WBOH permits (endorses) up to 900 ppm fluoride residue on dried eggs, often fed to school children and institutions. Many other foods may have as much as 70 ppm.

The Board of Health should not be surprised that two out of three children in the USA have dental fluorosis, a biomarker of excess fluoride exposure. However, the EPA (and in effect the WSBOH) still has their level of protection at crippling skeletal fluorosis.

Sincerely,

Bill Osmunson DDS MPH

European Journal of Public Health, 1–7
Published by Oxford University Press on behalf of the European Public Health Association 2023.

https://doi.org/10.1093/eurpub/ckad170

Dose dependence of prenatal fluoride exposure associations with cognitive performance at school age in three prospective studies

Philippe Grandjean [1,2], Alessandra Meddis [3], Flemming Nielsen [1], Iben H. Beck [1], Niels Bilenberg[4], Carly V. Goodman[5], Howard Hu[6], Christine Till[5], Esben Budtz-Jørgensen[3]

1 Department of Environmental Medicine, University of Southern Denmark, Odense, Denmark
2 Department of Environmental Health, Harvard T.H. Chan School of Public Health, Boston, MA, USA
3 Department of Biostatistics, University of Copenhagen, Denmark
4 Department of Child and Adolescent Psychiatry, Odense University Hospital, Odense, Denmark
5 Department of Psychology, Faculty of Health, York University, Toronto, ON, Canada
6 Department of Population and Public Health Sciences, Keck School of Medicine, University of Southern California, Los Angeles, CA, USA

Correspondence: Philippe Grandjean, Department of Environmental Medicine, University of Southern Denmark, Campusvej 55, Odense, Denmark, Tel: +45 (0) 6550 3769, e-mail: pgrandjean@health.sdu.dk

Background: Fluoride may be a developmental neurotoxicant at elevated exposures. We merged new data from a prospective Odense Child Cohort (OCC) with results from two previous birth cohort studies from Mexico and Canada to characterize the dose–effect relationship in greater detail. **Methods:** The OCC contributed 837 mother–child pairs to the total of >1500. We measured creatinine-adjusted urine-fluoride concentrations in maternal urine samples obtained during late pregnancy. Child IQ was determined at age 7 years using an abbreviated version of the Wechsler Intelligence Scales for Children. Findings from the three cohorts were used to calculate the joint benchmark concentration (BMC) and the lower confidence limit (BMCL) after adjustment for covariables. **Results:** In the OCC, urine-fluoride concentrations varied between 0.08 and 3.04 mg/l (median 0.52 mg/l) but were not significantly associated with full-scale IQ at age 7 years ($\beta = 0.08$; 95% confidence interval −1.14 to 1.30 for a doubling in exposure). No difference was apparent between boys and girls. In the OCC, the BMC was 0.92 mg/l, with a BMCL of 0.30 mg/l. The joint analysis of all three cohorts showed a statistically significant association between urine-fluoride and IQ, with a BMC of 0.45 mg/l (BMCL, 0.28 mg/l), slightly higher than the BMC previously reported for the two North American cohorts alone. **Conclusions:** As the BMCL reflects an approximate threshold for developmental neurotoxicity, the results suggest that pregnant women and children may need protection against fluoride toxicity.

Introduction

Fluoride has beneficial effects on the dental enamel in preventing caries, while systemic exposure may lead to toxic effects.[1,2] Although fluoride has been added to drinking water in certain parts of the world since the 1940s and toothpaste since the 1960s, little attention has been paid to the possible adverse effects of fluoride intake in pregnancy until fairly recently.[1] A substantial number of studies have shown cognitive deficits in children with elevated exposure to fluoride in drinking water, although mainly cross-sectionally.[1,3,4] However, prospective studies have now become available with individual data on prenatal fluoride exposure, as indicated by maternal urine-fluoride (U-F) excretion levels during pregnancy.[5,6]

Regulatory agencies often use benchmark concentration (BMC) calculations to identify safe or tolerable exposure levels.[7,8] In a prior study, we combined data from two prospective North American studies. A benchmark response of a one-point decrement in IQ was predicted by a BMC of 0.33 mg/l (lower confidence limit, BMCL, 0.20 mg/l) expressed in terms of maternal pregnancy U-F.[9] However, the relatively small number of data points at U-F levels at or below 0.2 mg/l may have introduced uncertainty in the observed monotonic associations. Accordingly, renewed calculations would be desirable with a better representation of low exposures. In addition, an update of the BMC calculation also appears warranted by the recently expanded results from the Early Life Exposure in Mexico to Environmental Toxicants (ELEMENT) cohort that included additional exposure data.[10]

We now present findings from the prospective Odense Child Cohort (OCC),[11,12] from a Danish municipality with fluoride concentrations in drinking water that are low by international standards.[13] We examine the possible association between prenatal fluoride exposure, as represented by maternal pregnancy U-F, and IQ at school age and conduct a joint BMC analysis that includes data from the two previous prospective studies.

Methods

OCC study cohort

All new pregnant women residing in Odense municipality were contacted between 2010 and 2012; 2874 of the 4017 women agreed to be enrolled in the OCC, while 374 dropped out before and after giving birth.[12] The present study population included 837 singleton mother–child pairs with results on child IQ, a maternal urine sample analyzed for fluoride, and information about parental education, child sex and preterm birth.

Fluoride exposure

While the addition of fluoride to drinking water is not legal in Denmark, elevated fluoride concentrations up to 1.5 mg/l naturally occur in groundwater in parts of the country,[13] and some types of tea, especially black tea, constitute an additional source of exposure.[14] In Odense municipality, the fluoride concentration in drinking water is rather low, i.e. 0.2–0.3 mg/l.[13] Given the retention in and

continuous mobilization from calcified tissues, the maternal U-F concentration reflects the level in the blood that is available for passage through the placenta to reach the fetus.[1] We analyzed maternal urine samples collected at 28 weeks' gestation to assess individual fluoride exposure. Some women ($N = 384$; 45.9%) provided a 24-h urine sample, while a spot fasting urine sample was otherwise obtained in the morning ($N = 453$; 54.1%).

The fluoride concentrations were measured with an Orion™ Ion Selective Electrode (ISE 9609 BNWP) (Thermo Fisher Scientific, Waltham, MA, USA) coupled to a Model 15 pH-metre from Denver Instruments (Sartorius, Göttingen, Germany) as previously described.[14,15] All samples were diluted prior to the analysis (1:1) with total ionic-strength-adjusted buffer (TISAB II) solution, as recommended by the manufacturer. The accuracy of the method was controlled in each batch of samples by analyzing the fluoride Certified Reference Material (CRM) at 0.52 ± 0.02 mg/l (Merck, Darmstadt, Germany). The limit of determination was 0.02 mg/l, and the average imprecision of the method was <5.1% (see Supplementary Material).

All U-F concentrations were adjusted for the creatinine concentration (U-Cr) using the following equation: $U\text{-}F_{CR} = (U\text{-}F/U\text{-}Cr) \times U\text{-}Cr_m$, where $U\text{-}F_{CR}$ is the creatinine-adjusted fluoride concentration (in mg/l), U-F is the measured fluoride concentration (mg/l) and $U\text{-}Cr_m$ is the median creatinine concentration of the samples.[5] In the two previous cohorts, the creatinine-adjusted U-F was assessed by comparable analytical protocols.[6,10,16]

Cognitive assessment

At age 7, the OCC children were invited to participate in the Danish version of the abbreviated Wechsler Intelligence Scales for Children to obtain a full-scale IQ (FSIQ), and 1570 completed the test.[11] Similarly, in the ELEMENT study,[5,17] a Spanish version of the Wechsler Abbreviated Scale of Intelligence was administered to 259 children at age 6–12 to derive an age-adjusted FSIQ. In addition, the Spanish version of the McCarthy Scales of Children's Abilities was administered to 287 children at age 4 to derive a General Cognitive Index (GCI) as a standardized composite score highly correlated with the FSIQ. In the Maternal-Infant Research on Environmental Chemicals (MIREC) study,[6] the 407 children's FSIQ were assessed at age 3–4 years in either English or French. These different measures of intellectual ability are considered equally valid and highly correlated,[18] thus justifying pooling the scaled (age-adjusted) IQ scores across the cohorts. Examiners were blinded to fluoride exposure status in the OCC, ELEMENT and MIREC studies.

Covariables

In the OCC, we considered maternal, child and socioeconomic variables correlated with child FSIQ for inclusion in the statistical analyses along with sex and preterm birth (gestational age <37 weeks).[11] As a key socioeconomic variable in the Danish population, parents reported their highest achieved education, which was categorized into short (high school or less, $N = 229$), intermediate (1–4 years post high school, $N = 446$) and long (>4 years post high school, $N = 162$), as based on the highest achieved education by either parent.[11] Dichotomized maternal smoking (yes, $n = 23$) and alcohol intake (yes, $n = 209$) during pregnancy, duration of breastfeeding (dichotomized as ≤3 and >3 months), school type (public or private), school grade (preschool or first) and psychologist examiner were also considered as covariables possibly associated with the FSIQ.

In the ELEMENT cohort,[5] covariables included gestational age in weeks, birth weight, sex, age at outcome measurement, maternal parity, maternal smoking history, marital status, age at delivery, maternal IQ, education and the specific sub-cohort identity. The MIREC study[6] selected similar covariables, including sex, city of residence, HOME score, maternal education and maternal race/ethnicity.

Statistical analysis

In the OCC, we first used covariable-adjusted linear regressions to model differences in child FSIQ score by the maternal U-F concentration. Because the U-F concentrations were positively skewed, a $\log_2$ transformation was applied. Thus, the regression coefficient (beta) therefore shows the difference in FSIQ for a doubling of the maternal U-F concentration.

A simple model accounted for sex, parental education and preterm birth. In a more comprehensive model involving a subset of mother–child pairs with additional information available, we added breastfeeding duration, maternal smoking and alcohol intake during pregnancy, age of children at the time of testing, examiner, school grade and school type. In both models, sex was introduced as a potential interaction term. In addition, the creatinine-adjusted U-F was stratified for the type of urine sample available (i.e. 24 h and spot), and a joint analysis was also conducted with a fixed effect for the type of urine sample. For descriptive purposes, a cubic spline model was also developed.

BMC calculations were carried out to assess the maternal U-F concentration associated with a benchmark response of a one-point reduction in child FSIQ score, as compared with an unexposed mother and the same profile of covariates. Then the results from the OCC study were compared and merged with the results previously obtained from the studies in Mexico[5] and Canada.[6] We used a similar statistical approach as in our previous benchmark calculations using results from the North American studies,[9] but we now included the updated ELEMENT cohort data with an increased sample size.[10]

In the benchmark analysis, we applied a linear dose–response function to approximate the effect of fluoride exposure (i.e. without a log scale for U-F). To better allow for different exposure distributions across studies, we derived two piecewise linear models, with breakpoints at 0.5 and 0.75 mg/l.[9] All models were fitted separately, including sex interaction, and adjusted for parity, maternal education, smoking, gestational age and the type of urine sample.

The regression coefficients in the linear model were used for the calculation of the BMC for each cohort, and joint BMCs were obtained by combining results from the three cohorts using a weighting approach.[9] The main result of the BMC analysis is the BMCL, i.e. the lower one-sided 95% confidence limit of the BMC.[19]

Differences between the regression coefficients in the three cohorts were tested using a Wald test, and we calculated the Akaike Information Criterion (AIC) to compare the fit of the different regression models. As the linear model is nested in the piecewise linear model, the fit of these two models can be directly compared. Thus, we calculated the *P* values for the hypothesis that the concentration response is linear in a test where the alternative is the piecewise linear model; a low *P* value indicates that the linear model has a poorer fit.

Results

Table 1 shows the main characteristics of the 837 OCC children included in the present study, as compared with the characteristics of all cohort children originally recruited. Of the 837 children in the present study, 435 (52%) were boys, and their average age was 7 years (6.5–8.3 years). Most (75.9%) of the children were breastfed for more than 3 months, and only 27 (3.2%) were born preterm. The maternal U-F concentrations averaged 0.58 mg/l (SD, 0.32; range, 0.08–3.04) (with a median of 0.52 mg/l) and did not differ between the sampling conditions (Supplementary table S1) nor with season. The creatinine-adjusted U-F results from the OCC and for the two other prospective cohorts are shown in figure 1.

After adjustment for covariables, the log2-converted maternal U-F was not significantly associated with the child's FSIQ score (table 2). A doubling in maternal fluoride concentration led to a slight decrease of 0.04 FSIQ points in girls and a small increase of 0.20 points

Table 1 Characteristics of 837 children from the OCC and included in the present study, as compared with the total cohort

Variable	Present cohort sample (*N* = 837) Mean (SD)/count (%)	Total cohort (*N* = 2448) Mean (SD)/count (%)
Sex		
Girl	402 (48.03)	1155 (47.18)
Boy	435 (51.97)	1293 (52.82)
Weight at birth (g)		
Mean (SD)	3.54 (0.52)	3.53 (0.53)
Missing	0	6
Breastfeeding duration		
<3 months	165 (24.05)	429 (25.09)
>3 months	521 (75.95)	1281 (74.91)
Missing	151	738
Maternal parity		
Primiparidae	457 (54.60)	1351 (55.21)
Multiparidae	380 (45.40)	1096 (44.79)
Missing	0	1
Gestational age <37 weeks		
No	810 (96.77)	2344 (96.10)
Yes	27 (3.24)	95 (3.90)
Missing	0	9
School type		
Public school	492 (80.00)	768 (78.77)
Private school	123 (20.00)	207 (21.23)
Missing	222	1473
School grade		
1st grade	431 (58.64)	742 (59.31)
Preschool	304 (41.36)	508 (40.61)
Missing	0	6
Age at test (years)		
Mean (SD)	7.15 (0.19)	7.18 (0.21)
Missing	0	938
FSIQ score		
Mean (SD)	99.44 (12.34)	99.43 (12.04)

Note: FSIQ, Full-Scale IQ.

in boys, but the interaction between sex and fluoride exposure was marginal (figure 2). Among important covariables, a higher parental education level predicted a higher FSIQ score[11] but was of marginal importance in the fluoride–IQ analysis. The type of maternal urine sample (fixed effect in the model) had no clear effect on FSIQ scores (−0.83; 95% confidence interval −2.52 to 0.86), with no difference in a likelihood ratio test for sample interaction.

When additional covariables were included, 377 observations in the OCC were disregarded due to missing information, and the comprehensive model included complete cases of 460 children (table 2). Again, only a weak association between the U-F and child FSIQ score was observed in the OCC, with no clear interaction between sex and fluoride exposure (table 2). Stratifying regression models by urine sample type did not reveal any significant associations between the maternal fluoride excretion variables and FSIQ score, and no significant interactions by sex were observed (table 2). A cubic spline for the log-transformed fluoride concentration again showed no association with FSIQ (Supplementary figure S1).

Relative to the OCC study, stronger associations between fluoride and IQ were observed among the MIREC boys and in the full sample of the ELEMENT cohort; regression coefficients for the girls in the MIREC cohort were fairly similar to the OCC study.[5,6] Nevertheless, the adjusted linear associations between maternal U-F and cognitive function in each of the three studies did not differ statistically ($P = 0.28$), and the combined data showed that an increase in maternal pregnancy U-F by 1 mg/l significantly predicted an IQ decrease by 2.06 points (Supplementary table S2).

Detailed results of the benchmark analysis are shown in Supplementary table S3. The joint BMC based on the linear model is 0.47 mg/l in maternal U-F, with a BMCL of 0.28 mg/l. The study-specific BMC and BMCL results show only minor variability. The BMCL values are generally larger in the OCC cohort compared with the two North American cohorts. In the OCC and MIREC studies, the joint linear results for both sexes were closer to the ones obtained for boys alone, while the results for girls seemed to differ. For the linear model, the joint BMCL for the three studies (0.28 mg/l) is similar to the one obtained from the piecewise model with a breakpoint at 0.75 (0.23 mg/l), while the piecewise model with a lower breakpoint at 0.5 showed a higher BMCL of 0.42 mg/l. This tendency was apparent in the combined analysis as well as in the sex-specific BMCL calculations.

Although the piecewise model is more flexible than the linear model, the AIC results did not reveal any important differences between the model fits. The same conclusion was reached based on likelihood testing where the linear model was not rejected, i.e., with $P = 0.46$ and 0.11 when the linear model was tested against piecewise linear models with breakpoints at 0.5 and 0.75, respectively.

Discussion

Experimental and cross-sectional studies have provided evidence of fluoride neurotoxicity, especially during early brain development.[1,20] Jointly with two prospective epidemiology studies on populations exposed to fluoridated water or fluoridated salt and other sources,[5,6] both of them rated as low risk of bias,[1] the present study adds new, comparable evidence from a population exposed to low water-fluoride levels. In the absence of other important fluoride sources, U-F concentrations will often be similar to the concentration in drinking water,[21,22] but substantial elevations can occur from tea drinking.[4] The two studies from North America showed creatinine-adjusted U-F concentrations averaging 0.89 mg/l (Mexico City) and 0.85 and 0.44 mg/l in fluoridated and non-fluoridated cities (Canada), respectively. Ranges of U-F levels from these two prior studies overlapped with the exposures encountered in the OCC study that reflected the low fluoride concentrations of 0.2–0.3 mg/l in the local drinking water,[13] as likely increased by tea drinking and other sources of exposure (figure 1). We calculated regression values for linear and, for comparison, piecewise linear dose–response functions for the new, low-exposure study so that it could be compared and merged with the previous findings.[9]

In the OCC study, we did not find evidence of fluoride neurotoxicity at low maternal U-F concentrations in the third trimester. This finding is consistent with the trimester-specific MIREC results,[23] as possibly affected by the imprecision of U-F measured in a single spot sample. Given the overlapping ranges of exposure, the fluoride–IQ relationships in the three studies were similar. Although the fluoride association was not statistically significant in the OCC cohort by itself, the joint association was significant when combined with information from the other two cohorts. This result can be explained by a relatively high variability in the OCC result, whereas the combined result is based on a larger sample size.

The joint BMC was found to be 0.45 mg/l (BMCL, 0.28 mg/l), i.e. slightly higher than previously found (BMC, 0.33 mg/l; BMCL, 0.20 mg/l) for the two North American cohorts alone.[9] Also, if instead relying on the GCI as a marker of child intelligence with the slightly larger Mexican sample, the results are similar (Supplementary table S3), as also seen previously.[9] Given the combined observations on more than 1500 mother–child pairs, the overall BMC results likely reflect a threshold for adverse cognitive effects of prenatal fluoride exposure that occur at levels prevalent in many countries.[21]

Due to the brain's continued vulnerability across early development,[24] infancy may also be a vulnerable period of exposure, especially among bottle-fed infants who receive formula reconstituted with fluoridated water.[23,25] However, in the OCC, exposure to fluoride in infancy is expected to be low because the majority of children were breastfed for at least 3 months (more than three out of four

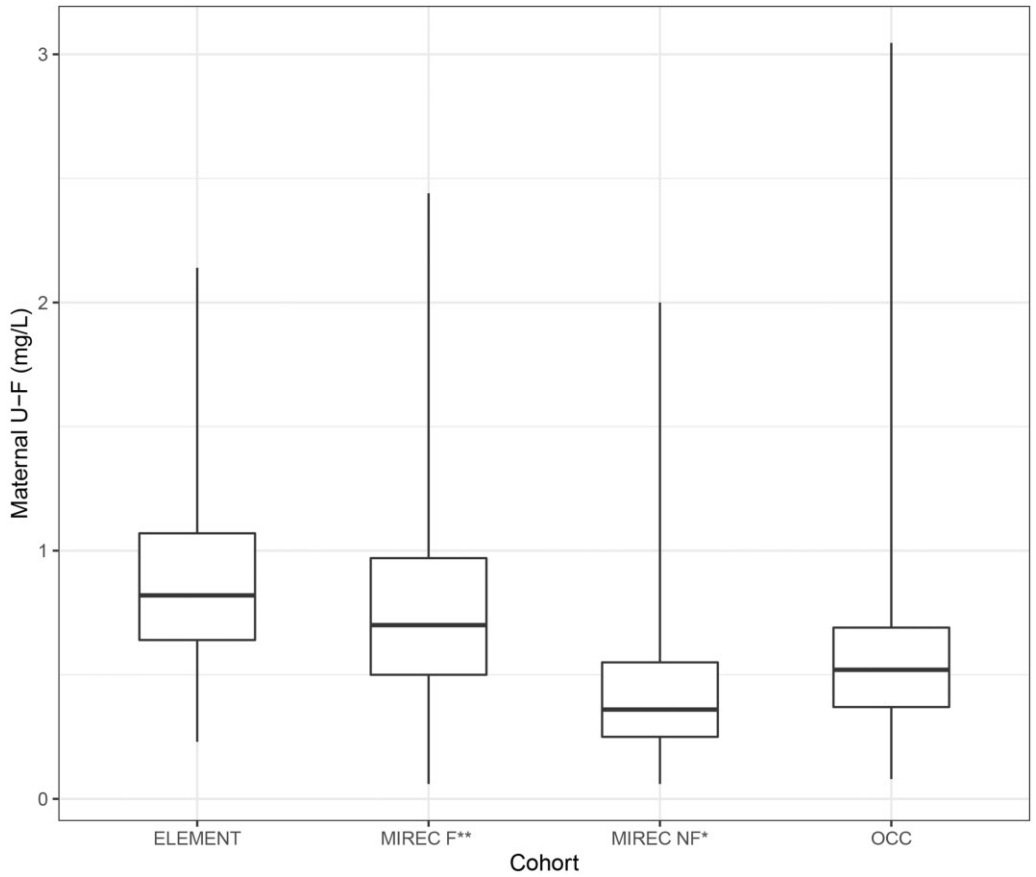

Figure 1 Maternal creatinine-adjusted urine-fluoride concentrations (U-F) in the three cohorts, where MIREC has been split into fluoridated (F) and non-fluoridated (NF) communities. Medians, quartiles, and 95% ranges are shown

Table 2 Predicted difference in FSIQ score for a doubling in the creatinine-adjusted fluoride concentration in mother's urine during pregnancy

	All samples (mg/l)		Spot samples (mg/l)		24-h samples (mg/l)	
	N	**β ^ (95% CI)**	***N***	**β ^ (95% CI)**	***N***	**β ^ (95% CI)**
Simple model[a]						
All	837	0.08 (−1.14 to 1.30)	453	−0.05 (−1.55 to 1.45)	384	0.36 (−1.73 to 2.45)
Girls	402	−0.05 (−1.80 to 1.70)	216	−0.83 (−2.98 to 1.32)	186	0.67 (−2.35 to 3.70)
Boys	435	0.20 (−1.47 to 1.87)	237	0.68 (−1.40 to 2.77)	198	0.09 (−2.75 to 2.93)
Comprehensive model[b]						
All	460	0.18 (−1.39 to 1.76)	223	0.58 (−1.53 to 2.69)	237	−0.72 (−3.24 to 1.80)
Girls	221	−0.40 (−2.52 to 1.71)	101	−0.78 (−3.64 to 2.08)	120	−0.91 (−4.27 to 2.45)
Boys	239	0.87 (−1.41 to 3.15)	122	2.14 (−0.92 to 5.20)	117	−0.50 (−4.13 to 3.13)

Notes: Results are shown for the total material with urine sample type as a fixed effect and for stratified analyses of the urine sample types by linear regression with sex as interaction. The simple model is adjusted for parental education and preterm birth. The comprehensive model accounts also for age at the time of testing, examiner, breastfeeding duration, school grade, school type and smoking and alcohol habits of the mother during pregnancy.
P values for sex interaction: a: 0.84 and b: 0.41.

children)[11] and because of the low fluoride concentration in the local drinking water.[13] As expected, the effects of fetal exposure (i.e. as represented by the U-F in pregnancy) remained significant in the MIREC study when adjusting for breastfeeding.[6] Likewise, in the ELEMENT study, the association of IQ with maternal U-F was only marginally reduced after controlling for child U-F. Further, fluoride exposure in preschool-age[23] and at school age[5] showed a weaker and non-statistically significant association with child IQ. These findings support that fetal brain development is highly vulnerable to fluoride exposure.

The IQ losses seen at elevated fluoride exposures are in accordance with findings in cross-sectional studies where the children examined had likely been exposed to chronic water-fluoride concentrations throughout development.[3,4] Similar results have been found in more recent studies that included areas with elevated water-fluoride levels.[26,27] These findings support that fluoride is a developmental neurotoxicant (i.e., causing adverse effects on brain development in early life) when exposures exceed a low background level. Given the ubiquity of elevated fluoride exposure, a recent study estimated that the population impact of adverse effects from fluoride

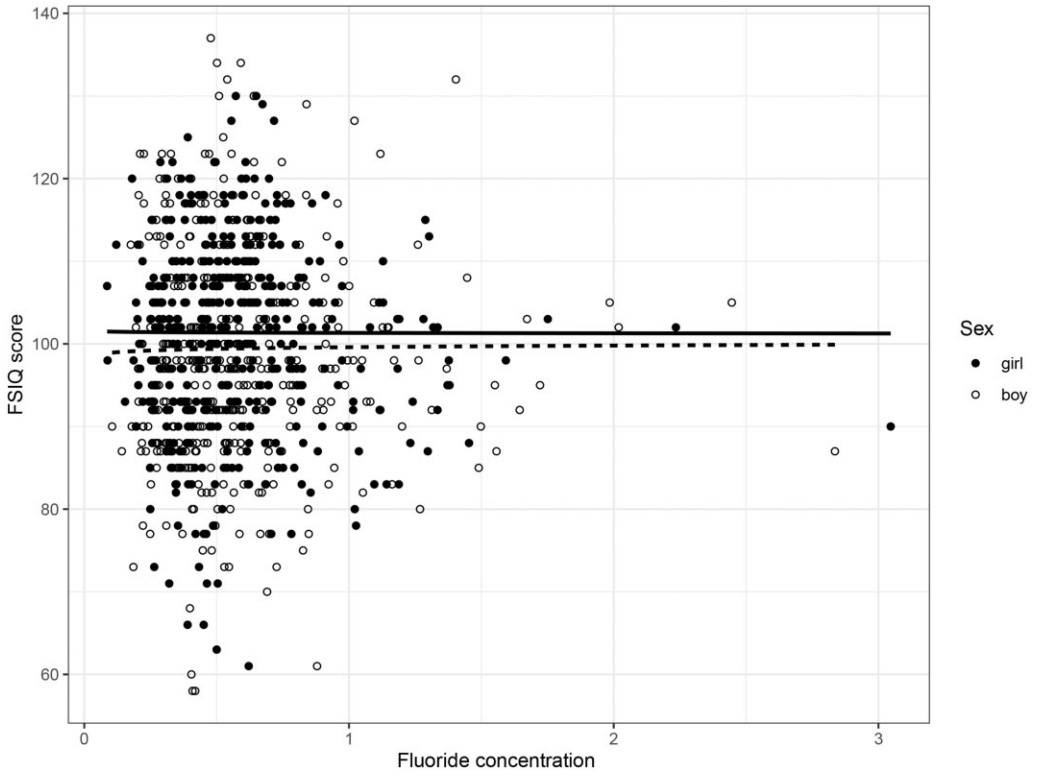

Figure 2 Creatinine-adjusted maternal U-F concentration during pregnancy as a predictor of Full-Scale IQ (FSIQ) in OCC children at age 7 with interaction by sex. The linear regression is adjusted for parental education and preterm birth (simple model). The type of urine sample is considered as a fixed effect. The filled circles and the full regression line are for girls, and the open circles and the dotted line refer to the boys

may exceed the one associated with other toxic elements like lead, mercury, and arsenic,[28] as also concluded in another modelling study.[29] Adverse effects of the latter trace elements are associated with blood concentrations substantially lower than the serum-fluoride concentration corresponding to the BMC.[24]

The OCC study focused on the FSIQ as a cognitive function indicator. Although fluoride neurotoxicity may not affect all cognitive domains equally,[10,23] the abbreviated WISC-V used in the OCC was not separated into subdomains. In addition to FSIQ as a main outcome, the ELEMENT cohort found that elevated maternal U-F concentrations were also associated with higher parent ratings of inattention on the Conners' Rating Scale, a common symptom of Attention-Deficit/Hyperactivity Disorder (ADHD).[16] Other studies on attention outcomes found an association between water fluoridation and diagnosis of ADHD in Canada, although cross-sectional data on child U-F did not replicate this association,[30] perhaps reflecting water-fluoride as a more stable proxy of early-life exposure compared with U-F measured in a later spot sample.

Individual vulnerability, including genetic predisposition,[31,32] may play a role in fluoride neurotoxicity. In the original MIREC study, boys were more vulnerable to prenatal fluoride neurotoxicity than girls,[6] perhaps suggesting sex-dependent endocrine disruption.[33] However, this tendency was not replicated in the present study. Other predisposing factors, such as iodine deficiency in pregnancy,[34] may also affect the outcome, though not likely in Denmark, where table salt is iodized. Overall, variability in such factors may result in difficulties documenting adverse cognitive effects at minor elevations of fluoride exposure.

Both the North American studies adjusted for a substantial number of covariables, including other neurotoxicants. Prenatal and early postnatal exposure to lead did not influence the fluoride-associated IQ deficits in the ELEMENT study.[5] Likewise, adjustment for arsenic, lead, perfluorooctanoic acid and mercury exposure did not appreciably change the estimates in the MIREC study.[6] The OCC cohort data were not adjusted for these other neurotoxicants, though the environmental exposures are low in the Odense area. Parental education was a key covariable in the Danish community,[11] while other socioeconomic factors were also considered important in the more diverse MIREC and ELEMENT populations.

The availability of 24-h urine samples might provide more precise fluoride exposure information, compared with morning spot urines, but the creatinine-adjusted results in the present study failed to show any important difference between the two exposure measures in association with the IQ outcome. Although maternal U-F seems to correlate with fluoride concentrations in serum that may pass the placenta,[1,21] the amount of fluoride that reaches the brain during early development is unknown. In addition, the OCC study collected urine on only one occasion during the third trimester, likely increasing imprecision, as suggested by previous studies that included multiple urine samples throughout pregnancy.[6,35] Thus, the maternal U-F averaged over three trimesters is a stronger predictor of child IQ than trimester-specific U-F.[23] Further, the creatinine-adjusted U-F is known to be the highest in the third trimester,[36] suggesting possible overestimation of fluoride exposure in the OCC cohort compared with the two other studies that relied on averages across trimesters. When occurring at random, such imprecision will tend to underestimate the fluoride association with the neurotoxicity outcome.[37]

The pooling of results from three prospective cohorts conducted in areas with wide ranges of overlapping exposure levels offers strong evidence of prenatal neurotoxicity, and these findings should inspire a revision of water-fluoride recommendations aimed at protecting pregnant women and young children. For example, the World Health Organization's recommendation of 1.5 mg/l as an upper limit for fluoride in drinking water[21] does not consider developmental neurotoxicity. While fluoride has dental health benefits,[38] the recent report on oral health from the National Institutes of Health (NIH)[39] emphasized improvements in preventing caries due to the increased topical use of new dental dentifrices, fluoride sealants and varnishes

in children above 2 years of age, i.e. after the teeth have erupted.[2,40] Although the NIH report stated that water fluoridation benefits the entire population (page I-39),[39] fluoridated toothpaste and other topical treatment are favoured as primary means of caries prevention.[2]

The present study contributes new information on the weak association between fairly low levels of prenatal fluoride exposure and cognitive function at school age in a Danish birth cohort. A possible negative association could not be confirmed within the exposures measured in the OCC. When merged with data from two previous prospective studies at higher exposures, a revised BMCL fluoride concentration of about 0.3 mg/l in maternal pregnancy urine suggests that elevated fluoride intakes, whether from drinking water, black tea, or other sources, during pregnancy may require public health attention.

Supplementary data

Supplementary data are available at *EURPUB* online.

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Author contributions

P.G. and E.B.J. supervised this study and are the guarantors. P.G., A.M. and E.B.J. designed the study. P.G., F.N., I.H.B., N.B., C.G., C.T. and H.H. contributed to data collection. I.B.H., N.B., C.G., C.T. and H.H. contributed to data analysis and interpretation. All authors provided advice regarding critically important intellectual content and helped to draft the manuscript and approved submission of this manuscript.

Conflicts of interest: P.G. has served as an expert on the hazards of environmental chemicals on behalf of the plaintiffs in Food & Water Watch v. U.S. EPA, where H.H. served as a fact witness regarding ELEMENT research on fluoride. All other authors have no interest to declare regarding this research.

Data availability

The dataset analyzed in this study is not publicly available due to national data security legislation on sensitive personal data.

Key points

- In the OCC birth cohort, prenatal fluoride exposure was estimated using creatinine-adjusted maternal urine-fluoride concentrations, and child IQ was determined at age 7 years. No clear association was found at the relatively low levels of exposure.
- Merging these results with data from two more highly exposed cohorts strengthened the dose–response assessment and allowed calculation of more accurate benchmark concentrations for developmental fluoride neurotoxicity.
- Because fluoride excretion may vary over time and sources of fluoride intake were not assessed, the exposure assessment in the three cohorts may involve some degree of imprecision that could dilute the findings.
- While analyses were controlled for child sex, parental education, and prematurity, population differences may not have been fully captured by adjustment for covariables.
- The joint benchmark concentration results reflect an approximate threshold for fluoride neurotoxicity at about 0.3 mg/l in urine, which is more reliable than previous results, as now based on more than 1500 mother–child pairs from prospective studies.

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