

From: Meena Gasperino [<mailto:padha006@umn.edu>]
Sent: Monday, February 29, 2016 10:14 AM
To: DeLong, David J (DOH); Phillips, Theresa (DOH)
Cc: Halvorson, Clark R (DOH); Meena Gasperino
Subject: Water Fluoridation

Dear DOH Officials,

Thank you for your timely response! I am a current resident of Lake Forest Park, and I recently found out (today) about the public hearing to be held on March 9th regarding decreasing the level of water fluoridation. I was sorry to see that the formal comment period ended Feb. 23rd. I am also sorry that I will not be able to attend the hearing. Nonetheless, I hope that you will consider the position of extreme concern that community members like me have.

Based on new evidence, not available 70 years ago when the practice of fluoridation was implemented, and concerns over the practice by citizens, researchers, and doctors alike, we have the opportunity to change how we do things and not complacently accept it because, "that's how we have always done it." I whole heartedly support decreasing and even eliminating fluoridation because increasing scientific evidence points to unnecessarily high fluoride levels which builds up in our bodies, particularly in children, reaching toxic levels effecting brain development. Evidence also shows that daily brushing, flossing, and not giving little babies and toddlers sugar before they go to bed is the best way to prevent tooth decay.

Proper oral care is a public health issue and can be tackled in other ways (perhaps targeting your educational efforts in low income areas), but forcing medication on entire populations through the water supply is not the way to combat tooth decay simply because it is easy.

I wish the DOH would dispel the myth that fluoride is a nutrient and that it is safe for ingestion. It is supposed to be applied topically, under the supervision and advisement of a dentist, and is also supposed to be spit out not swallowed. How many of you or your colleagues would regularly swallow toothpaste or mouthwash or let your children swallow it because fluoride is supposedly "safe?"

Thank You,

Meena Gasperino, mom, registered nurse, and water drinker (only filtered tap water!)

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NEW FLUORIDATION LEVEL SHOULD BE ZERO

February 23, 2016

Read online at

www.fluoride-class-action.com/deal-to-board-of-health-2-23-16

Washington State Department of Health

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To the Washington State Department of Health

The Department of Health has proposed to authorize a new .7 ppm fluoridation level under WAC 246-290-460.

The new fluoridation should be zero.

See the proposed rule here:

<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/RegulationandCompliance/RuleMaking>

See the supporting document here:

<http://www.doh.wa.gov/Portals/1/Documents/4200/FluorideSA.pdf>

There are many grounds for opposing fluoridation, but I will focus on two, the fact that it is illegal, it leaches lead, it is ineffectual, and it has harmful side effects.

Fluoridation is Illegal Under Washington Law

www.fluoride-class-action.com/illegal

Section 7 of the proposed rule says:

Section 7: Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

This is an incorrect statement, as I will demonstrate.

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Fluoridation is illegal under Washington law. WAC 246-290-220 says that fluoridation may be done in Washington only with fluoridation materials which **“comply with”** the National Sanitation Foundation NSF Rule 60 standard. NSF 60 requires 1) that some 20 toxicological studies be done on drinking water additives and 2) that a risk estimation test must be done. The toxicological studies are not being done. The risk estimation tests are not being done. Fluoridation should stop until NSF or the suppliers produce their toxicological studies and they are approved by the Board of Health and after proper risk estimation tests are done.

Supporters of fluoridation say that NSF 60 as revised, has waived the requirement that toxicological studies be done. This is not so for the reasons given below. Even if NSF waives the toxicological studies, it does not waive the risk estimation tests.

Neither the toxicological studies is waived, and fluoridation fails both the toxicological studies and the risk estimation tests.

This is a partial list of the toxicological studies which the 2009 version of NSF 60 says must be done:

“assays of genetic toxicity, acute toxicity ..., short term toxicity ..., subchronic toxicity ..., reproductive toxicity, developmental toxicity, immunotoxicity, neurotoxicity, chronic toxicity (including carcinogenicity), and human data (clinical, epidemiological, or occupational) when available. To more fully understand the toxic potential of the substance, supplemental studies shall be reviewed, including, but not limited to, mode or mechanism of action, pharmacokinetics, pharmacodynamics, sensitization, endocrine disruption, and other endpoints, as well as studies using routes of exposure other than ingestion. Structure activity relationships, physical and chemical properties, and any other chemical specific information relevant to the risk assessment shall also be reviewed. ...

“A weight-of-evidence approach shall be employed in evaluating the results of the available toxicity data. This approach shall include considering the likelihood of hazard to human health and the conditions under which such hazard may be expressed. ...

“Toxicity testing requirements for the quantitative risk assessment procedure are defined in annex A, table A2. A minimum data set consisting of gene mutation assay, a chromosomal aberration assay, and

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a subchronic toxicity study shall be required for the performance of a quantitative risk assessment. ...”

The evidence that these studies are not being done is strong. See page 67 of a deposition in which NSF official Stan Hazen admits that the studies are not being done.

Dr. DeLong does not deny my assertion that the studies are not being done. His response is that the studies are not required and are waived in the express language of NSF 60-2013, Section A.3.2, which says:

“If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18) no additional collection of toxicological data shall be required ...”

There are several problems with Mr. DeLong’s logic.

1) Mr. DeLong cut off the rest of the sentence. The full sentence says:

“If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18) no additional collection of toxicological data shall be required **prior to performance of the risk estimation** (see annex A, section A.6.1).” [emphasis added]

Even if the EPA has set an MCL for fluoride and for the other contaminants in the fluorosilicic acid mixture, and even if the toxicological studies are waived, the risk estimation test in Section A.6.1 is not waived and must still be done. Fluoridation at .7 ppm fails the risk estimation test.

NSF 60 Section A.6.1 draws the two boxes below and uses it to illustrate the risk estimation test:

“To calculate the SPAC [single product allowable concentration], an estimate of the number of potential sources of the substance from all products in the drinking water treatment and distribution system shall be determined. The SPAC shall be calculated as follows:

SPAC (mg/l) =	$\frac{\text{promulgated regulatory value (mg/l)}}{\text{estimated number of drinking water sources}}$
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“In the absence of specific data regarding the number of potential sources of the substance in the drinking water treatment and distribution system, the SPAC shall be calculated as 10% of the promulgated regulatory value.

NSF 60 Section A.6.1 is awkwardly worded. A better diagram of the calculation would look like this:

SPAC (mg/l) =	$\frac{\text{promulgated regulatory value (mg/l)}}{\text{estimated \# of drinking water sources (or other sources of fluoride)}}$	X 10%
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SPAC is defined in Section 2.16 as follows:

“single product allowable concentration (SPAC): The maximum concentration of a contaminant in drinking water that a single product is allowed to contribute under annex A of this Standard.

According to the NSF 2008 Fluoride Fact Sheet, “The SPAC, as defined in NSF/ANSI Standard 60, is one tenth of the US EPA’s MCL”.

Let’s do the math: The EPA MCL [maximum contaminant level] for fluoride is 4.0 ppm. Divide 4.0 ppm by the number of fluoride sources, which NSF assumes to be one. The result is 4.0 ppm. Then multiply 4.0 ppm by 10%. The result is .4 ppm. The current .7 ppm for fluoride is higher than .4 ppm. Thus, fluoridation at .7 ppm fails the risk estimation test. Therefore, fluoridation at .7 ppm does not “comply with” NSF 60.

Even if the toxicological studies are not done, fluoridation materials still do not “comply with” NSF 60.

2) And we are not done yet with the risk estimation test. Notice that the denominator in the above formula: “estimated number of drinking water sources”. This should have been worded to say “estimated # of drinking water sources (or other sources of fluoride)”. The denominator would be 1.0 ppm in a district with no other sources of fluoride in the human diet. However, if there are significant other sources of fluoride in the human diet, the denominator will get larger, and the SPAC or allowed level of fluoride to be added will get smaller.

When fluoridation began in 1945, there were few other sources of fluoride in most newly fluoridated water districts. Today there are now many other sources of fluoride besides the fluoride added to drinking water: foods made with tap water; coffee, tea, soft drinks, beer and other beverages made with fluoridated tap water; juices reconstituted with tap water; bottled water made from tap water; common fruits, grains, and dried bulk products sprayed with sulfuryl fluoride; the many fluorinated drugs such as Prozac; and finally fluoridated toothpaste, which is absorbed through mouth tissues and swallowed.

The Environmental Working Group notes, for example, that the EPA allows up to 900 ppm fluoride in dried eggs. One-third of all eggs are dried and then added to a wide range of food products.

Therefore, the denominator used to calculate the SPAC would be more than 1.0. Assuming that the fluoride from other sources doubles the fluoride added to drinking water then the formula to apply would be:

$$\text{SPAC (mg/l)} = (\text{promulgated regulatory value (mg/l)} / \text{estimated number of drinking water sources}) \times 10\%.$$

Filling in the numbers we have $4.0 \text{ ppm} / 2 \times 10\% = .2 \text{ ppm}$. Using the NSF 60 formula, the maximum fluoride that could be added would be .2 ppm. Again, the current .7 ppm fluoridation level violates the NSF 60 maximum.

3) The 4.0 ppm MCL is much too high. The NRC in its 2006 report stated clearly that the 4.0 ppm level was not protective and should be lowered. For this reason, fluoridation at .7 ppm is even more likely to fail the risk estimation test. Fluoride is of roughly the same toxicity as lead and arsenic, and the MCLs for them are 15 ppb and 10 ppb. The 4.0 ppm level was picked out of the air. There is no scientific explanation whatsoever for why this level of fluoride poisoning was set. According to one report South Carolina had drinking water which contained naturally occurring fluoride at slightly under 4.0 ppm, and

authorities there did not want to have to install expensive de-fluoridation equipment. So the MCL was set at 4.0 ppm.

4) Likewise, the 10% multiplier used in the NSF risk estimation test was picked out of the air. There is no scientific basis for presuming that adding a toxin at an arbitrary 10% of an arbitrary 4.0 ppm MCL is harmless.

5) The current text of A.2.3 includes a blanket waiver for doing toxicological studies for all additives or contaminants for which there is an EPA MCL. However, in the original 1988 edition of NSF 60 there was no such blanket waiver. It was in 1988 that the EPA was putting NSF into the fluoride certifying business. The original 1988 version of Section A.3.2 says:

APPENDIX A **TOXICOLOGY REVIEW AND EVALUATION PROCEDURES**

GENERAL: These product review and test guidelines are to assist in establishing the toxicity, if any, of the products under anticipated use conditions. **Prior to initiating new toxicity testing, the applicant is strongly encouraged to discuss information requirements and test protocols with the certifying agency. If an EPA Maximum Contaminant Level (MCL) is available, no new toxicity testing and evaluation (Sections 2.0.6 and 2.0.7) may be necessary, but a risk estimate (Maximum Allowable Level or MAL) must be calculated** per Appendix A, Section 3.0.

The current NSF 60 version, at least going back to the 2009 version (the next oldest one I have been able to find), says “**no additional collection of toxicological data shall be required ...**”. The NSF 60 1988 version says “**no new toxicity testing and evaluation may be necessary**”.

The wording was changed at some point between the 1988 and 2009. There were NFS 60 versions published in the following years: 1996, 1997, 1999, 2000, 2001, 2002, 2003, 2004, 2005. I am searching for other versions, and I will send them to you if and when I locate them. The question is relevant, because when the date when NSF 60 was changed is compared to the date – 2000 – when Washington adopted its current version of WAC 246-290-220, it would indicate whether there was a time when Washington law was being violated.

See the NSF 60 1988 version at this link.

See the NSF 60 2009 version at this link.

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See the NSF 60 2013 version at this link.

The difference between “no new toxicity testing and evaluation **may be necessary**” and “no additional collection of toxicological data **shall be required** ...” is clear. Under the original version reliance on the EPA MCL to avoid toxicological testing was not automatic. It was a matter of good judgment. In the revised version of NSF 60 toxicological inquiry stops automatically if there is an EPA MCL.

The NSF 60 1988 version was in effect at least until 1996. It is not clear whether it was changed in 1996, 1997, 1999, 2000, 2001, 2002, 2003, 2004, or 2005.

Regarding WAC 246-290-220 there is a 2000 version which differs slightly from the current version. The 2000 version says “shall comply” instead of “must comply”. It was authorized in WSR-99-07-021-1999 and says:

Any treatment chemicals ... added to water intended for potable use **shall comply** with ANSI/NSF Standard 60. The maximum application dosage recommendation for the product certified by the ANSI/NSF standard 60 shall not be exceeded in practice.

Regarding WAC 246-290-220 the current version dates back to 2003. It says “must comply” instead of “shall comply”:

Any treatment chemicals ... added to water intended for potable use **must comply** with ANSI/NSF Standard 60. The maximum application dosage recommendation for the product certified by the ANSI/NSF standard 60 shall not be exceeded in practice.

The change from “shall” to “must” appears minor, however, it indicates that in changing WAC 246-290-220, the Board of Health was trying to make the waiver of toxicological studies more automatic and unconditional, and in effect never to be done for any additive or contaminant for which there was an EPA MCL.

It makes no sense for NSF 60 to say that 20 toxicological studies must be done but then to include a sentence which says they will, in effect, always be waived.

If the 1988 wording in NSF 60 was changed – “may” to “shall” – after the original version of WAC 246-290-220 was issued in 2000, there was a period during which there was no supposedly automatic waiver of the toxicological

tests, meaning the toxicological studies should have been done and NSF 60 was being violated between 1988 and 2000.

6) The 2009 version omits the previous sentence from the 1988 version:

“Prior to initiating new toxicity testing, the applicant is strongly encouraged to discuss information requirements and test protocols with the certifying agency.”

Why would NSF want to eliminate this sentence? First, NSF apparently preferred not to have to discuss requirements and protocols with other government agencies and apparently wanted to be able to approve fluoridation without any interference. Second, the reference to the “certifying agency” probably implies that the original pre-1988 plan was to have NSF make its proposed approval and then have a “certifying agency” validate it. The certifying agency was to have the last word. This was apparently an attempt at semi-privatization of fluoridation regulation. Privatization was popular during the Reagan-Bush years. By 2009 NSF realized the incriminating nature of this sentence and simply eliminated it.

This raises another question: Which agency would have been the “certifying agency”? FDA, EPA? CDC? The Washington Board of Health? The Lynnwood water district?

7) The practical effect of the “no additional collection of toxicological data shall be required” language is that toxicological studies will never be done on any contaminant in the list found on the EPA MCL and MCLG web page. To list some 20 toxicological studies and then negate doing any of them should not have been the intent of the FDA in 1979 when allegedly it was allegedly ceding authority over fluoridation to the EPA. It should not have been the intent of the EPA in 1978 when it was creating its EPA MCL and MCLG list and in 1988 when it was setting up NSF in the fluoride certification business. For that reason the “no additional collection of toxicological data shall be required” language is void and should be disregarded.

8) NSF’s 2008 Fluoride Fact Sheet says:

Standard 60 was developed to establish minimum requirements for the control of **potential adverse human health effects** from products added directly to water during its treatment, storage and distribution. The standard requires a **full formulation disclosure of each chemical ingredient** in a product. It also requires a **toxicology review** to determine that the **product is safe at its maximum use level** and to

evaluate potential contaminants in the product. The standard requires **testing of the treatment chemical products**, typically by dosing these in water at 10 times the maximum use level, so that trace levels of contaminants can be detected. A **toxicology evaluation of test results** is required to determine if any contaminant concentrations have the **potential to cause adverse human health effects**. ... NSF also developed a **testing and certification program** for these products, so that individual U.S. states and waterworks facilities would have a mechanism to determine which products were appropriate for use. The certification program requires **annual unannounced inspections** of production and distribution facilities to ensure that the products are properly formulated, packaged, and transported with **safe guards against potential contamination**. NSF also requires **annual testing and toxicological evaluation** of each NSF Certified product. NSF Certified products have the **NSF Mark**, the maximum use level, lot number or date code and production location on the product packaging or documentation shipped with the product. The use of this standard and the associated certification program have yielded benefits in **ensuring that drinking water additives meet the health objectives** that provide the basis for **public health protection**. ... The NSF **toxicology review** for a chemical product **considers all chemical ingredients** in the product as well as the manufacturing process, processing aids, and other factors that have an impact on the contaminants present in the finished drinking water. This formulation review **identifies all the contaminants** that need to be analyzed in testing the product. For example, fluosilicic acid is produced by adding sulfuric acid to phosphate ore. This is typically done during the production of phosphate additives for agricultural fertilizers. The manufacturing process is **documented by an NSF inspector** at an initial audit of the manufacturing site and during each annual unannounced inspection of the facility. The manufacturing process, ingredients, and potential contaminants are **reviewed annually by NSF toxicologists**, and the product is tested for any potential contaminants. A minimum **test battery for all fluoridation products** includes metals of toxicological concern and radionuclides.

The NSF's 2012 Fluoride Fact Sheet says almost the same thing, but it removes all references to "toxicological" except for one.

NSF in another document on its web site represents that it has **two toxicologists on staff**.

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The “no additional collection of toxicological data shall be required” language is hidden in a book which costs \$325 and which is hard to locate in libraries. The representations in NSF Fact Sheets make no mention of this language. There is a rule in contract and warranty law: The fine print cannot un-warrant what the large print warrants. The large and public print says there will be toxicological studies, testing, and safety of the product. Again, the “no additional collection of toxicological data shall be required” language is invalid.

9) Section A.2.3 wrongly interprets the EPA’s National Primary Drinking Water Regulations and the EPA’s MCL for fluoride, which is 4.00 ppm.

Many think that because the SDWA [Safe Drinking Water Act] has a 4 ppm maximum contaminant level (MCL) for fluoride, that the SDWA authorizes the insertion of fluoride up to a 4 ppm maximum. This is not so. The SDWA requires removal of fluoride if it exceeds 4 ppm. It does not authorize adding fluoride up to the 4 ppm level or adding any fluoride at all.

The 4.0 ppm MCL is a requirement that if the naturally occurring level of fluoride or pollution caused level of fluoride exceeds 4.0 ppm MCL action level, the water district must remove the fluoride or prevent it from being added to water. There is a secondary MCL of 2.0 ppm, and if fluoride in drinking water exceeds that level, the utility must give notice to water users of the risk of fluorosis.

You do not have to take my word as to whether this is the correct interpretation of the EPA MCLs. Take a look at what the National Research Council says at NRC 2006, Page 1:

“In 1986, EPA established an MCLG [maximum contaminant level goal] and MCL [maximum contaminant level] for fluoride at a concentration of 4 milligrams per liter (mg/L) and an SMCL [special contaminant level] of 2 mg/L. These guidelines are restrictions on the total amount of fluoride allowed in drinking water. ... **EPA’s drinking-water guidelines are not recommendations about adding fluoride to drinking water to protect the public from dental caries.** ... Instead, EPA’s guidelines are maximum allowable concentrations in drinking water intended to prevent toxic or other adverse effects that could result from exposure to fluoride.

Further, NRC 2006, Page 13, says:

It is important to make the distinction that EPA’s standards are guidelines for restricting the amount of naturally occurring fluoride in

drinking water; **they are not recommendations about the practice of adding fluoride to public drinking-water systems.**

This becomes more clear when you look at the list of contaminants regulated by EPA. Notice that the list includes biological contaminants such as cryptosporidium. This is clearly not an authorization to add cryptosporidium up to a certain level but a requirement to remove it if it is present or prohibit its addition to water.

Notice that the EPA list includes such man-made toxic waste chemicals such as atrazine. The MCL and MCLG for atrazine is .003 ppm or 3 ppb. This is clearly not an authorization to add atrazine up to 3 ppb but to require its removal from water if it exceeds that level or to prohibit its addition to water.

10) Arguably the type of fluoride referred to in the EPA MCL and MCLG list is “naturally occurring fluoride”, not man-made fluorosilicic acid intentionally added. This is what the National Research Council said, as noted above. See NRC 2006, Page 13:

It is important to make the distinction that EPA’s standards are guidelines for restricting the amount of **naturally occurring fluoride** in drinking water....

There is a big difference between naturally occurring calcium fluoride and the man-made forms. Calcium fluoride is the naturally occurring fluoride found most frequently. Calcium binds to fluoride and reduces its reactivity. Calcium fluoride is not as immediately poisonous as is fluorosilicic acid. The LD 50 for calcium fluoride is 3,750 mg/kg; for fluorosilicic acid it is 125 mg/kg.

For a 70 kilogram or 154 pound person it would take a quarter kilogram of calcium fluoride to kill 50 percent of us – while making the rest very ill. For fluorosilicic acid the LD50 for a 70 kilogram person would be only 8.7 grams, the weight of around eight 1.25” paper clips. Also, calcium fluoride does not leach lead from plumbing, whereas fluorosilicic acid does.

Others argue that the term “fluoride” in the EPA MCL and MCLG list includes all kinds of fluoride. Calcium fluoride, aluminum fluoride cryolite, and magnesium fluoride are also naturally occurring. The same EPA MCL list includes arsenic, barium, beryllium, and cadmium, and there are many forms in which all of these can exist. This would imply that any form of fluoride would be covered. However, this does not change the outcome. It is still true that EPA MCLs do not authorize the addition of any of the listed additives to

drinking water, only the removal of them if they exceed the MCL action level or the prevention of them from flowing into water.

11) Section A.3.2 is poorly worded, even nonsensical. A.3.2 says:

“If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18) no additional collection of toxicological data shall be required prior to performance of the risk estimation.”

What the amateurs who wrote A.3.2 were trying to say is:

“If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18), and if the MCL does not exceed 10% of the MCL set by the USEPA, no additional collection of toxicological data shall be required

Again, this paragraph is nonsensical, and therefore the change away from the 1988 version should be disregarded. Or the entirety of A.3.2 should be disregarded. If either is done, we return to the same conclusion: The toxicological studies must be done.

12) Compliance with A.2.3 is not enough for fluoridation materials to “comply with” NSF 60. The supplier of fluoridation materials and NSF must also “comply with” NSF 60-2013 section 3.2.1, which says:

3.2.1 The manufacturer shall submit, at a minimum, the following information for each product:

- a proposed maximum use level for the product, which is consistent with the requirements of Annex A;
- complete formulation information, which includes the following:
 - the composition of the formulation (in percent or parts by weight for each chemical in the formulation);
 - the reaction mixture used to manufacture the chemical, if applicable;

- chemical abstract number (CAS number), chemical name, and supplier for each chemical present in the formulation;
- a list of known or suspected impurities within the treatment chemical formulation and the maximum percent or parts by weight of each impurity; and
- the source and type of water used in the manufacture of the treatment chemical as well as any available documentation regarding quality monitoring of such water source, if applicable;
- a description or classification of the process in which the treatment chemical is manufactured, handled, and packaged;
- selected spectra (e.g. UV/visible, infrared) shall be required for some additive products or their principle constituents; and
- **when required by Annex A a list of published and unpublished toxicological studies relevant to the treatment chemical and the chemicals and impurities present in the treatment chemical.**

The most interesting of these is the last one, which says the supplier must supply:

a list of published and unpublished toxicological studies relevant to the treatment chemical and the chemicals and impurities present in the treatment chemical.

That would include the fluoride itself and the other contaminants that come along with it.

The toxicological studies must be “relevant”, and they must be real toxicological studies. Both published and unpublished studies must be submitted. The requirement that unpublished studies be submitted would imply that the supplier is required to commission studies.

If they were complying with NSF 60, suppliers should have submitted all these documents to NSF when they applied for NSF certification of their so-called fluoride. And NSF should have received these documents. So both the suppliers and NSF should have these documents.

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If the documents from the suppliers are not in good order or were never submitted (which is almost certainly the case), then the fluoridation materials we use to pollute our drinking water would not “comply with” NSF 60. It is the duty of the Board of Health to demand that Simplot and NSF turn over these documents and to confirm or deny that they exist. For the Board to do otherwise would imply that they do not want to know whether our fluoridation materials “comply with” NSF 60. It would be to allow a fraud to be perpetuated and a violation of federal and state consumer protection law.

ARSENIC FAILS RISK ESTIMATION TEST

NSF 60 does not apply only to fluoride. It applies to other contaminants that come with fluorosilicic acid, such as arsenic.

NSF admits that around 43% of all fluorosilicic acid batches contain some arsenic and that the maximum amount of arsenic added to water by fluoridation materials and which was fluoridated at 1.0 ppm was 1.66 ppb as documented by NSF in 2000.

With water now fluoridated at .7 ppm instead of 1.0 ppm, the effective level of arsenic added by the fluoridation materials would be $1.66 \text{ ppb} \times .7 = 1.16 \text{ ppb}$, which is still more than 10% of the 10 ppb MCL. Arsenic from fluorosilicic acid added to water at .7 ppm fails the risk estimation test.

Arsenic is a confirmed type 1A human carcinogen. A type 1A human carcinogen is one which has been confirmed to be cause cancer in humans. Arsenic can cause skin, liver, lung, kidney, and bladder cancer. Arsenic disrupts the cellular process that produces ATP, the molecule in charge of transporting energy throughout your body's cells so they can perform the tasks that keep you alive. Arsenic both blocks and competes with the chemicals that form ATP, leaving the body short of what it takes to keep up even the most basic cellular processes. A peer reviewed 1992 article in Environmental Health Perspectives says that consuming 50 ppb arsenic per liter of water daily (1992 MCL) can be expected to cause cancer in 13 of 1,000 people. See:

Small amounts of arsenic become trapped permanently under skin and can eventually lead to skin cancer decades later. This is described in the Agency for Toxic Substances and Disease Registry on arsenic.

The snow melt drinking water of western Washington is lower in naturally occurring arsenic than is ground water used elsewhere. But that does not mean we should feel free to add so-called fluoride which is laden with arsenic to our drinking water and then drink it from conception to death.

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In 2001 the EPA lowered the MCL for arsenic from 50 ppb to its current level of 10 ppb.

The National Resources Defense Council position is that the 10 ppb MCL should be even lower:

“Given the risk estimates for all internal cancers provided in the NAS’s 1999 report, the current EPA MCL for arsenic must be revised downward to no higher than a value at the Practical Quantitation Level (PQL) of 3 ppb.”

Highly specialized machines can measure arsenic levels even below 1 ppb.

A water district must remove arsenic if it exceeds the 10 ppb MCL action level. The MCLG, maximum contaminant level goal for arsenic, is zero. If your goal is zero, you do not get closer to that goal by adding any amount of arsenic.

With water now fluoridated at .7 ppm instead of 1.0 ppm, the effective level of arsenic added by the fluoridation materials would be $1.66 \text{ ppb} \times .7 = 1.16 \text{ ppb}$, which is still more than 10% of the 10 ppb MCL. Arsenic from fluorosilicic acid added to water at .7 ppm fails the risk estimation test. Because the “no additional collection of toxicological data shall be required” language is void, toxicological studies must be done. The Washington Board of Health should demand to see them.

Further, bear in mind that as with fluoride, the EPA MCL is not an authorization to add any amount of arsenic, only to remove arsenic if it exceeds the MCL action level or to prevent its addition to water if the amount added from pollution exceeds that action level. Fluoridation adds arsenic to our drinking water and should therefore cease.

Further, bear in mind that as with fluoride, if there are sources of arsenic ingestion other than from drinking water, the denominator in the NSF formula should be raised from 1.0 to a higher number, which would lower the SPAC and make it less likely that arsenic would pass the risk estimation test.

Fluoridation defenders might say that 1.66 ppb or 1.16 ppb is a small amount of arsenic and that it can be disregarded. But where is the science that says that a small amount of arsenic consumed daily for life from conception to death is harmless? Where is the science which says that the combined effect of arsenic and the many other contaminants in our so-called fluoride? There is no such science. One-third of us will contract cancer, and one-fourth of us will die

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of cancer, so we should be cautious and not reckless when dealing with a known type 1A human carcinogen. Fluoridation is reckless if for no other reason than that fluorosilicic acid comes with arsenic.

The 2014 Seattle water quality report does not even mention arsenic, implying there is none present in water fluoridated at .8 ppm fluoride. This would mean there was no arsenic in the fluorosilicic acid.

However, Simplot's Certificates of Analysis say fluorosilicic acid delivered to Seattle contains arsenic present at 10.47 ppm undiluted in the tanker truck.

The 2012 NSF Fact Sheet on Fluoridation says arsenic is present in 43% of tanker loads tested.

Likewise, the 2012 Everett water quality report does not even mention arsenic, implying that none is present in water fluoridated at .7 ppm fluoride.

However, Simplot's Certificates of Analysis says that arsenic is delivered to Everett Utilities in the fluorosilicic acid at 11.16 ppm.

And according to the Lynnwood water quality report, the average arsenic level is .2 ppb and "arsenic [is] monitored at the treatment plant effluent". The Lynnwood report says that its water comes from Everett.

Someone in the Seattle and Everett utility departments appears to have "cooked the books". The Board of Health should look into these discrepancies.

FLUORIDATION MATERIALS CONTAIN LEAD AND LEACH LEAD

Fluorosilicic acid is contaminated with lead. I rely on NSF's own reports to prove that, plus Simplot's Certificates of Analysis and Seattle and Everett reports.

Fluorosilicic acid is diluted down 230,000 times to get it from 23% fluorosilicic acid in the tanker truck down to 1 ppm fluoride ion, NSF admits that the amount which fluorosilicic acid adds to drinking water is 1.1 ppb in a 2000 NSF report and at .6 ppb in 2008 and 2012 NSF Fluoride Fact Sheets.

For a full discussion of the lead and fluoridation issue see my 2011 lead letter to HHS and EPA.

Lead permeates all cells in the body, reduces IQ, shortens life span, exacerbates kidney disease, and worsens high blood pressure. It causes

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anemia, worsens osteoporosis, disrupts thyroid function, alters immune function, and affects brain function. See [ATSDR report starting at page 22](#). See a [National Center for Biotechnology Information](#) report on lead toxicity. See a report on [lead and high blood pressure](#). See a report on lead and [IQ in children](#).

The EPA MCL for lead is 15 ppb.

However, the MCLG, maximum contaminant level lead, is zero. If your goal is zero, you do not get closer to that goal by adding any amount of lead. In effect, the MCLG of zero prohibits fluoridation because the fluoridation materials contain arsenic.

Now that the level of added fluoride has been lowered from 1.0 to .7 ppm, fluorosilicic acid is being diluted 328,000 times instead of 230,000 times to reduce the fluorosilicic acid concentration to .7 ppm instead of 1.0 ppm. The amount of lead being contributed along with the so-called fluoride we drink at .7 ppm would be 70% of 1.1 ppb or .77 ppb. A mechanical application of the “no additional collection of toxicological data shall be required” language in the current version of NSF 60 would say that arsenic passes the risk estimation test when water is fluoridated at .7 ppm – because .77 ppb is under 10% of the 15 ppb MCLG. Likewise, toxicological studies would not be required simply because there is an MCL for lead.

However, the “no additional collection of toxicological data shall be required” language is void for reasons discussed above in the context of fluoride.

And as with fluoride, the existence of a 15 ppb MCL for lead is not an authorization to add any amount of lead, only to remove lead if it exceeds the MCL action level or to prevent the addition of lead to water if the amount added from pollution exceeds that action level.

Further, there are other sources of lead in the environment, and this changes the calculation under the risk estimation test. There is lead paint in older homes. There is lead in old service lines running out to the street, in brass faucets up to 8.0%, in copper-lead solder, in soil as a result of burning gasoline containing tetraethyl lead from the 1920s into the 1980s, and from piston engine aircraft which still burn leaded avgas. Therefore, the denominator in the NSF formula should be raised from 1.0 to a higher number, which would lower the level at which lead passes the risk estimation test. And of course, toxicological studies should be required because the “no additional collection of toxicological data shall be required” language is void.

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Fluoridation defenders might say that this is only a small amount of lead and that it can be disregarded. But where is the science that says that a small amount of lead consumed daily for life from conception to death is harmless? There is no such science. Fluoridation is reckless if for no other reason than that fluorosilicic acid comes with lead.

But our consideration of lead is not over. Fluorosilicic acid not only contains lead, it leaches lead from plumbing.

In 1992 Tacoma was fluoridating city water with fluorosilicic acid. The percentage of homes in Tacoma exceeding the action level for fluoride - then 50 ppb - was 9.8%. Because Tacoma was experiencing equipment problems and a drought, Tacoma Public Utilities stopped fluoridating temporarily. When fluoridation stopped, 90th percentile lead levels dropped from 32 ppb to 17 ppb. The 90th percentile test means that 10% of randomly selected homes had lead coming from their taps at 32 ppb and then 17 ppb.

Also in 1992 Thurmont, Maryland, stopped fluoridating. Lead levels in Thurmont dropped 78%. Thurmont turned off the fluoridation equipment permanently. Tacoma soon returned to fluoridating. The horse ran back into the burning barn.

Why would there be more lead in drinking water when water is fluoridated? The first reason is that there is lead in fluorosilicic acid. There is lead in the raw phosphate ore used to make super phosphate fertilizer, and so there is lead in fluorosilicic acid scrubber liquor. But this alone cannot account the relatively small lead levels in the water out in the water mains compared to the lead levels at the tap. The second reason is that there is lead in plumbing in most homes, and fluorosilicic acid leaches lead from plumbing.

LEAD LEACHING

Fluorosilicic acid, when dissolved in water down to 1.0 ppm fluoride or now down to .7 ppm fluoride, breaks down into fluoride ion, hydrogen fluoride, and silicic acid, H_4SiO_4 , as confirmed in the 2006 National Research Council study on fluoride at page 53.

Even though there is relatively little lead in water in the water mains, even including the lead which came along with the fluorosilicic acid, lead levels at the tap can be much higher. It is the silicic acid which dissolves lead in plumbing.

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Coplan, Masters, Maas, and Sawan showed that that there is much more lead in tap water fluoridated with fluorosilicic acid than with sodium fluoride. However, they do not explain the mechanism by which fluorosilicic acid dissolves lead.

Silicofluoride, more so than sodium fluoride, leaches lead out of pipes and brass fittings.

Silicic acid is classed as a weak acid and is often dismissed as relatively harmless. Unfortunately for our health, it is able to dissolve – slowly but surely – the lead in lead based pipes and fittings and lead-brass faucets. The dissociation constant of silicic acid in water is very low, 2×10^{-10} . This means that the amount of sodium carbonate, Na_2CO_3 , also known as soda ash, added to neutralize the fluoride ion and hydrogen fluoride is not sufficient to neutralize the silicic acid. Although silicic acid is classed as a weak acid, it is also hard to neutralize and therefore persists and dissolves lead in plumbing.

See Dr. Richard Sauerheber explanation of the process whereby fluorosilicic acid breaks down into silicic acid and then leaches lead.

Silicic acid has another name. Supporters of fluoridation avoid calling it “acid” and instead call it silicate ion in water. When it is written as $\text{Si}(\text{OH})_4$, there is the implication that it is not an acid. When it is written as H_4SiO_4 , there is the implication that it is an acid. Beginning the chemical formula with “H” would indicate that it is an acid. See a diagram which illustrates the issue. The 2012 NSF Fluoride Fact Sheet does not even mention silicic acid. It refers only to “silicate ions in water”. $\text{Si}(\text{OH})_4$ and H_4SiO_4 have exactly the same number of atoms of silicon, oxygen, and hydrogen.

NSF then makes the inaccurate and inappropriate statement that

“sodium, fluoride, and silicates all have toxicological studies, fluoride has an MCL regulatory level, and silicate has an NSF maximum usage assessment. Fluorosilicates do not need a toxicological assessment specifically for the fluorosilicate ion, because it does not exist in potable water at the fluoride concentrations and pH levels of public drinking water”.

Yes, there is very little fluorosilicic acid after dilution, but there is a lot of silicic acid, a point which NSF glides over. Silicic acid needs a toxicological assessment, but NSF does not provide for it.

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Lead leaching can be extreme. In 2004 Seattle papers reported lead at 1,600 ppb (parts per billion) in old Seattle schools, far above the 15 ppb EPA action level and the zero ppb goal. New brass pipes and faucets contain around 8% lead and older pipes contain as much as 30% lead. Old schools, homes, apartments, hospitals, office buildings, and factories have pipes containing lead, which silicic acid will leach. When water districts stop fluoridating, lead levels in water and in blood drop, as happened in Tacoma in 1992. Seattle commissioned reports on the lead in schools, but had a blind spot to the possibility that silicic acid was a factor. It is a political sin to blaspheme the fluoridation deity. Seattle replace lead pipes in schools at great cost, which was a good thing. It should also have terminated fluoridation.

And let's not forget that even if we replace all the lead pipes in schools we will have solved only a small part of the problem. We will solve the lead problem in schools, but the lead problem will remain in other structures. We cannot build our way out of the lead leaching problem. We must stop fluoridating.

Sodium fluoride, used to fluoridate around 8% of water users does not break down to form silicic acid, and therefore does not leach as much lead as does fluorosilicic acid, however, that does not mean that fluoridating with sodium fluoride is acceptable. Sodium fluoride breaks down into fluoride ion, which at acidic pH, such as in the stomach, forms hydrogen fluoride, which is a very tiny, neutral molecule, which is able to penetrate the fatty lipid layer of the stomach and enter the blood stream.

Dr. Roger Masters and Myron Coplan have worked jointly for years researching and publishing extensively regarding the effects of fluoride, specifically fluorosilicic acid and sodium silicofluoride, on violent and other abnormal behavior. The silicofluorides leach more lead and are more harmful than sodium fluoride. See the following articles written by these two authorities:

Roger Masters on Toxins, Health, and Behavior

Toxins like lead are associated with higher rates of violent crime, learning disabilities, and substance abuse.

Roger Masters – The Harmful Side-Effects of Water Treated with Silicofluorides

When either of these silicofluorides (SiF) is added to a water supply, published research has identified biological effects of the "residue" of partially dissociated silicofluoride molecules. These effects increase both immediate "uptake" of environmental lead to

blood and long term “absorption” of lead in body organs. Resulting changes in brain chemistry influence social behavior and call into question the policy of using these chemicals in treating public water supplies in the U.S.

Roger Masters and Myron Coplan, Neurotoxicity and Violent Crime

Lead, for example, lowers intelligence and learning ability, as Ben Franklin learned from British printers. More recently, neurotoxicologists have shown an association between lead uptake and poor impulse control, learning disabilities, and violence.

Roger Masters – Publications Relating to Fluorosilicic Acid

LEAD DISCLOSURE LAW IGNORED

Federal law at 42 U.S. Code § 300g-6 says:

Each owner or operator of a public water system ... shall identify and provide notice to persons that may be affected by lead contamination of their drinking water where such contamination results from ... lead content in the construction materials of the public water distribution system [or] corrosivity of the water supply sufficient to cause leaching of lead. ... Notice under this paragraph shall be provided notwithstanding the absence of a violation of any national drinking water standard. [emphasis added].

Washington utilities are disregarding federal laws which require reporting of lead concentrations in drinking water.

WAC 246-290-220(5) contains the following language regarding leaching:

(5) The department may accept continued use of, and proposals involving, certain noncertified chemicals or materials on a case-by-case basis, if all of the following criteria are met: ...

(b) There exists no substantial evidence that the use of the chemical or material has caused consumers to register complaints about aesthetic issues, or health related concerns, that could be associated with leachable residues from the material; and

(c) The chemical or material has undergone testing through a protocol acceptable to the department and has been found to not contribute leachable compounds into drinking water at levels that would be of public health concern.

The Washington Board of Health ignores this regulation.

CLEAN WATER ACT - FEDERAL WATER POLLUTION CONTROL ACT

We drink and cook with maybe one percent of the water that flows through our homes. The other 99 percent goes down the shower, sink, and commode or out of the washing machine and then to the treatment facility. The treatment facility is unable to filter out the tiny fluoride ion, and so fluoride flows into our rivers. Four cities dump their fluoridated sewer water into the Snohomish River, Monroe, Snohomish, Everett, and Marysville. The fluoride content of sewer effluent is high enough to repel salmon and cause salmon runs to crash, as has happened in the Snohomish, Columbia and Sacramento Rivers.

The Clean Water Act of 1972 states:

SEC. 101. (a) The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this Act— (1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985: ... (3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited....”

Fluoride is a pollutant and should not be discharged into our rivers.

Fluoridation violates the Clean Water Act and thus violates NSF Rule 60 and WAC 246-290-220, which build on the Clean Water Act.

SAFE DRINKING WATER ACT

The EPA MCLs and MCLGs mentioned in NFS 60 come from the SDWA, which is found in Title 42 of the US Code, and so the SDWA is an implied part of WAC 246-290-220. Relevant provisions of the SDWA are quoted here:

When proposing any national primary drinking water regulation that includes a maximum contaminant level, ... the Administrator shall ... use ... an analysis of ... [t]he effects of the contaminant on the general population and on groups within the general population such as infants, children, pregnant women, the elderly, individuals with a history of serious illness, or other subpopulations that are identified as likely to be at greater risk of adverse health effects due to exposure to contaminants in drinking water than the general population.

Each maximum contaminant level goal established under this subsection shall be set at the level at which no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety.

Fetuses are highly sensitive to fluoride and its co-contaminants because their cells are rapidly dividing. Fluoride and its co-contaminants pass the placental barrier and lower IQ. The FDA banned prenatal supplements containing fluoride. Babies too are highly sensitive. Their cells too are still dividing, and they drink four times as much fluids per their body weight as do adults. Babies' kidneys are not mature and excrete only 20% of fluoride consumed. CDC, ADA, AMA, and the surgeon general have advised that if formula is mixed using fluoridated water fluorosis will result, an admission that other harms are being done.

Fluoride builds up in kidneys, reducing ability to excrete. Water used for dialysis must be fluoride free. After drinking fluoridated water for years, bone will contain 3,000 to 12,000 ppm fluoride, depending on water hardness and diet. At 3,000 ppm bones weaken and become brittle. Fractured pelvises are twice as common in fluoridated areas. All fluorides affects bones, joints, and tendons and exacerbate arthritis.

Fluoridated water fails to protect these sensitive populations and thus violates the SDWA and NSF Rule 60.

NSF SHOULD NOT BE APPROVING FLUORIDATION MATERIALS

Now that I have completed my analysis of fluoridation and NSF 60, I should add that EPA should never have privatized the regulation of fluoridation by passing its own responsibility off to a trade association where the industries regulated by NSF sit on the NSF board. And the FDA should be enraged that NSF has usurped its role by approving a drug to be safe for human consumption when only the FDA is authorized to do that.

Nevertheless, Washington has chosen to convert NSF 60 into some kind of regulation and to consider it binding. So it should be applied, and if it is applied, fluoridation will have to stop.

I should also add that there is a core part of NSF 60 which has validity, and that is the list of toxicological studies which must be done. It is my theory that this list was prepared by the FDA back in 1979 when it transferred authority over fluoridation to the EPA. Toxicological studies should be done on

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fluoridation materials, and if they were done, the results would be so horrifying that fluoridation would end immediately.

CDC ADMITS THAT FLUORIDATION MAKES NO SENSE

Why should you believe me instead of guys in white coats? Because I quote from the white coats. Consider three important admissions which come from the CDC web site itself:

- a) that fluoridation reduces caries only 18% to 25% (Other evidence says it does not reduce caries at all);
- b) that 41% of adolescents suffer from some degree of dental fluorosis, with around 12% of adolescents suffering from mild, moderate, and severe fluorosis, which is noticeable, embarrassing and ugly; and
- c) that “fluoride prevents dental caries predominately after eruption of the tooth into the mouth, and its actions primarily are topical for both adults and children”.

Thus, according to CDC’s own admission, fluoridation would not seem to be a good bargain.

Add to this the studies which indicate that there are much more effective ways to reduce and even eliminate tooth decay than fluoridation, and the issue becomes even clearer. The fixation on fluoridation distracts the dental profession from teaching methods which really do reduce caries and do so without any harm.

If we have sound teeth it is in spite of fluoridation not because of it.

CONCLUSION

You have probably heard all your life that fluoridation is a good thing. But fluoridation supporters including medical, dental, and public health advisers have been deceived by a big lie and are trapped and lost in a fluoridation maze. Fluoridation is a maze of half-truths and lies, and for some people it is hard to find the exit.

There is a tendency for people to say “I’ll just take the word of the doctors and dentists” when it comes to such scientific subjects. However, if you did well in high school math, chemistry, and physics, you should easily understand the

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health, safety, and effectiveness issues. As a lawyer, you should be able to understand how fluoridation violates numerous laws.

I hope you will honestly study this issue and do the right thing. As you study, bear in mind what Mark Twain said: It is a lot easier to defraud a man than it is to convince him he has been defrauded.

The right thing for you to do would be to put a halt to fluoridation and initiate a state class action suit against NSF and Simplot. The suit would be first for the money which rate payers have paid for unnecessary and harmful fluoridation chemicals and next for physical harm incurred.

MORE INFORMATION

I suggest you study this subject by reading the following documents. These will give you a general introduction to the folly of fluoridation. See:

For a general orientation to this subject, read the Safewater flier first:
www.fluoride-class-action.com/safewater.

Read “National Sanitation Foundation – Sham FDA – Fraudulent Certifier of Fluoridation Materials”, posted online at www.fluoride-class-action.com/sham

Read: “[What Is In It?](http://www.fluoride-class-action.com/what-is-in-it)” a quantification of the contaminants contributed to drinking water through fluoridation. <http://www.fluoride-class-action.com/what-is-in-it>

Read about why there are [much better ways to prevent tooth decay](http://www.fluoride-class-action.com/much-better-ways-to-prevent-tooth-decay) than fluoridation posted online.

Read “[How Does Fluorosilicic Acid Leach Lead?](http://www.fluoride-class-action.com/silicic-acid-2)” <http://www.fluoride-class-action.com/silicic-acid-2>

[Read about the illegality of fluoridation](http://www.fluoride-class-action.com/illegal-fluoridation) and the coming class action against NSF, suppliers of fluoridation materials, the water districts which fluoridate, and the state which authorizes it.

[Read my Fluoride Report Card For HHS and EPA.](http://www.fluoride-class-action.com/report-card)

[Read my 2011 letter to HHS and EPA regarding lead in fluoridation materials.](http://www.fluoride-class-action.com/2011-letter)

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Read the Clean Water Act of 1972.

Read the Safe Drinking Water Act of 1974.

Read about the mechanism of mass propaganda as engineered by Edward Bernays, double nephew of Sigmund Freud to manipulate women to take up cigarette smoking, and to promote the toxic use tetraethyl lead in gasoline and the fluoridation of our drinking water.

Read about how to an exit from the fluoridation maze.

EPA MCL and MCLG list.

NSF 60 Standard, 1988 version.

NSF 60 Standard, 2009, version:

NSF 60 Standard 2013.

2000 NSF letter.

2008 NSF Fact Sheet on Fluoridation.

2012 NSF Fact Sheet on Fluoridation.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Deal". The signature is stylized with loops and a long horizontal stroke at the end.

James Robert Deal, Attorney
WSBA Number 8103

From: [James Robert Deal](#)
To: [Phillips, Theresa \(DOH\)](#)
Cc: [Audrey Adams](#); [Scott Shock](#); [Alli Larkin](#); [Julie Simms](#); [Pam Pollock](#); [Jeff Woiton](#); [Jeanne Gleason](#); [Olemara Peters](#); [Brian Richard](#)
Subject: comment on new .7 ppm fluoridation rule
Date: Tuesday, February 23, 2016 11:58:27 AM
Attachments: [Deal-to-Board-of-Health-2-23-2016.pdf](#)

**Comment on
Fluoridation of Drinking Water, WAC 246-290-460**

Please acknowledge receipt.

Sincerely,

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February 23, 2016

Washington State Board of Health

Subject: Proposed changes to WAC 246-290-460, Fluoridation of drinking water

Dear Board,

While I cannot argue the benefits of lowering the fluoride concentration in public water from the previous 1.0ppm down to 0.7ppm, as the petition proposes, I must continue to urge that NO fluoride should be added because 0.7ppm is not safe for many water consumers who will be forced to drink it. I have previously given you testimony of my own family's great harm from fluoride chemicals in tap water, but I continue to be most concerned for those families who have NOT discovered what I have---that fluoride harms children and adults alike, even those who are not known to be hypersensitive as my son Kyle is, and that the claimed benefit does NOT justify the risk.

I have attached a letter from pediatrician, Dr. Yolanda Whyte, MD, who has mathematically shown that formula fed infants receiving fluoridated water at 0.7ppm are receiving toxic doses of fluoride, far above the EPA's Reference Dose for safety (0.114mg/kg/d). This calculation of toxic overdosing of infants must be taken into consideration especially for low income families who cannot afford effective fluoride filtration systems or reverse osmosis bottled water for their babies.

Further, the lifelong negative impacts of fluoride overdosing of formula fed infants affects black (and Hispanic) babies more than white babies, permanently harming low income black infants the most. See my second attachment or http://fluoridealert.org/studies/dental_fluorosis02/ for studies of greater harm to blacks, as evidenced by significantly more dental fluorosis and more severe cases of fluorosis than white children. The only cause of dental fluorosis is, of course, too much fluoride.

As you well know, cities and water purveyors in Washington rely specifically on the Washington State Board of Health for assurances of safety of their fluoridation programs. By passing this new proposed rule, the BOH is maintaining that 0.7ppm is safe for all citizens, including infants, and no risks have been disclosed by BOH to those water purveyors. This rule change, if passed, solidifies the BOH's claims and assurances to water purveyors that the benefits outweigh any risks of fluoride and perpetuates the assumption that no overdosing will occur once the fluoride levels are reduced to 0.7ppm. However, there is not one shred of scientific evidence that supports this presumption for infants who face a lifetime of potential harm by the negligence of public health authorities to warn water purveyors and the public of infant overdosing by fluoride.

Fluoridation chemicals added to tap water at 0.7ppm are not safe for 100% of the consuming public, as is claimed, and the failure of the Board of Health to disclose risks of fluoride infant overdosing is a gross negligence of the board's responsibilities to Washington citizens who rely on you.

Sincerely,

Audrey Adams
President, King County Citizens Against Fluoridation
Board, Washington Action for Safe Water
10939 SE 183rd Ct
Renton, WA 98055

Yolanda Whyte, M.D.
Dr. Yolanda Whyte Pediatrics, P.C.
P.O. Box 500457 Atlanta, GA 31150
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www.yolandawhytemd.com yolanda@yolandawhytemd.com

May 20th, 2013

Jill Jennings-McElheney
Micahsmission@aol.com

Toxic dose of fluoride for infants on Athens-Clarke County tap water

Dear Ms. Jennings-McElheney,

As a Georgia pediatrician, I am responding to your request regarding health concerns for your infant granddaughter who lives in Athens-Clarke County (ACC) and is drinking formula reconstituted with ACC tap water. Your infant granddaughter and other infants who consume ACC tap water, fluoridated at the current concentration 0.7 ppm, are at high risk for fluoride toxicity.

I came to this conclusion based on the following pediatric vulnerabilities that I am hoping you will take into consideration:

1. **Children receive a greater dose per body weight than adults.** For example, an average 2 week old newborn, weighing 6lbs 11 oz, and drinking formula reconstituted with ACC tap water, at a rate of 2-3 oz every 2-3 hrs (approximately 24 oz/d) is receiving toxic doses of fluoride, as shown in the following calculations.

Exhibit I. Generic Exposure Dose Equation

		$D = C \times IR \times AF \times EF / BW$
where,		
D	=	exposure dose
C	=	contaminant concentration
IR	=	intake rate of contaminated medium
AF	=	bioavailability factor ¹
EF	=	exposure factor
BW	=	body weight

Fluoride exposure dose (D) = $0.7 \text{ ppm or } 1\text{mg/L (C)} \times 24\text{oz/d}^* \text{ (IR)} \times 1 \text{ (AF)} \times \text{subjective loss of value caused by a risk (EF)} / 6\text{lbs } 11\text{oz}^{**} \text{ (BW)}$

*24 oz = 0.7L

**6lbs 11oz = 3.033 kg

Fluoride exposure dose (D) = $\frac{0.7\text{mg/L (C)} \times 0.7\text{L/d (IR)} \times \text{subjective \% (EF)}}{3.033\text{kg}}$

Fluoride exposure dose = 0.161 mg/kg/d

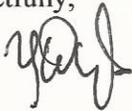
This dose is toxic, being considerably greater than the U.S. Environmental Protection Agency's (EPA) Reference Dose for safety, set at 0.114mg/kg/d. Oral consumption fluoride is not recommended or she will be at risk for conditions like dental and skeletal fluorosis, neurodevelopmental problems, IQ deficits, hypothyroidism and other conditions. She should only consume purified water via reverse osmosis, distillation or de-ionization.

2. **In pediatric toxicology, it is the early timing that determines the poison.** Children experience more severe health effects when exposed to a toxin while their organs have not completed development. For example,

- The kidneys are less able to detoxify and excrete fluoride as efficiently as adults
- The immune system is less able to defend itself
- Babies/skin is more permeable to skin absorption of fluoride when bathing
- Newborn skeleton absorbs 90% of fluoride, significantly more than an adult
- Fluoride is able to cross the blood brain barrier and damage the brain and nervous system
- Fluoride can also cross the placenta and affect the unborn child

Please consider requesting that ACC provide a safe alternative water source for your granddaughter, other infants and people in other high-risk groups, such as pregnant women, seniors, those with kidney, bone, thyroid, brain or nervous system conditions. The medical profession has not established any safe dose fluoride consumption for infants. Therefore, you should consider urging the Georgia General Assembly to discontinue this outdated statewide mandated practice of water fluoridation that can result in toxic doses of fluoride in infants. Feel free to contact me with any additional questions about these health hazards.

Respectfully,



Yolanda Whyte, M.D.

Racial Disparities in Dental Fluorosis

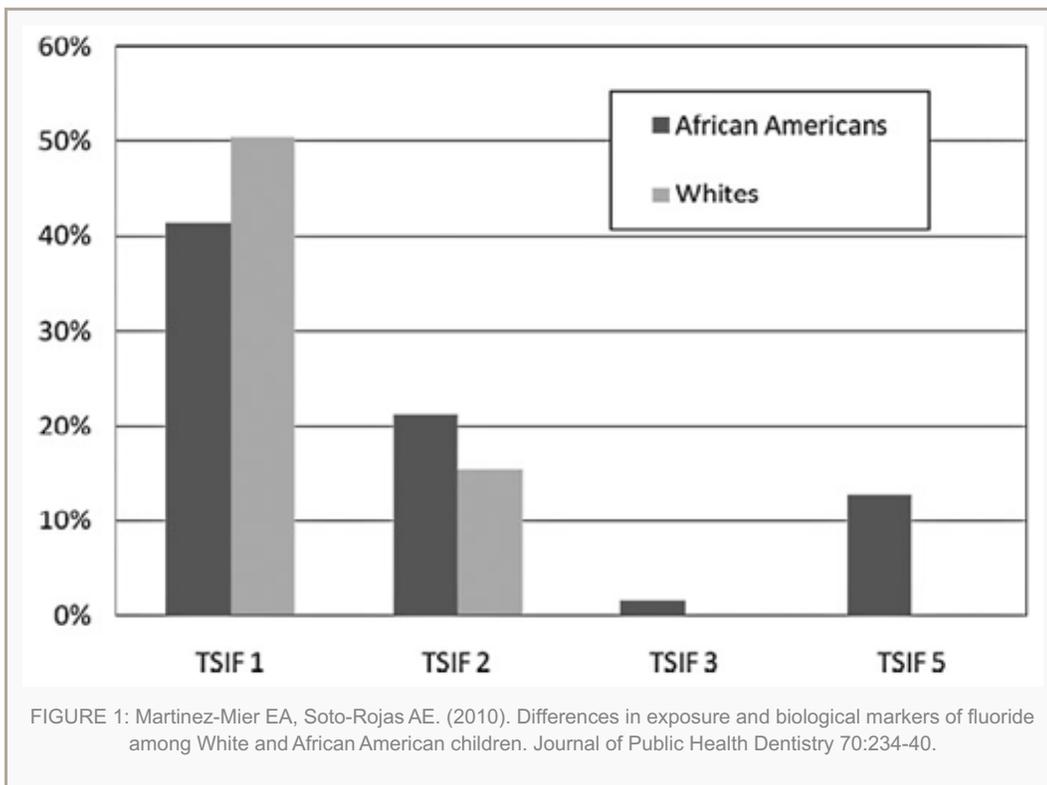
In 2005, the Centers for Disease Control published the results of a national survey of [dental fluorosis](#) conducted between 1999 and 2002. According to the CDC, black children in the United States have significantly higher rates of dental fluorosis than either white or Hispanic children. As the CDC noted, this was not the first time that black children were found to suffer higher rates of dental fluorosis. Indeed, as documented below, at least five other studies — dating as far back as the 1960s — have found black children in the United States are disproportionately impacted by dental fluorosis.

Not only do black children have higher rates of fluorosis, they have more severe forms of the condition. A 2010 study from fluoridated Indianapolis found that over 12% of surveyed black children, but none of the surveyed white children, had pitting (“a definite physical defect” of the enamel) as a result of too much fluoride exposure. (Martinez-Mier 2010). Similarly, a 1990 study from Georgia found that over 16% of black children (versus 9% of white children) had moderate or severe fluorosis, involving either “light to very dark brown” staining, pitting; and/or “large areas” of “missing” enamel with “dark-brown stain” and “altered” tooth structure. (Williams & Zermer 1990).

It is not yet known why blacks suffer higher rates of dental fluorosis. According to the CDC, it may be a result of “biologic susceptibility or greater fluoride intake.” (CDC 2005). Whatever the explanation, it is clear that the black community is being disproportionately harmed by current fluoride policies in the United States.

martinez-mier (2010) — fluorosis survey in Indianapolis, Indiana:

A fluorosis survey was conducted among 83 black children and 102 white children in Indianapolis, Indiana (a fluoridated community). As noted by the authors, “the prevalence [of dental fluorosis] in African American children (80.1 percent) was significantly higher than in Whites (62.5 percent).” Not only was the fluorosis rate higher in the black community, but the severity of the fluorosis was significantly greater ($P < 0.001$). Whereas the maximum fluorosis score in the white community registered as a two on the [TSIF Scale](#), the maximum fluorosis score in the black community registered as a five. A TSIF score of [two](#) refers to teeth with white staining covering “at least one-third of the visible surface, but less than two-thirds.” A TSIF score of [five](#) refers to pitting of the enamel, which is defined as “a definite physical defect in the enamel surface” which “is usually stained or differs in color from the surrounding enamel.” As the following table shows, none of the white children had a fluorosis score of five, but 12.7% of the surveyed black children did.



Centers for disease control — national survey of dental fluorosis (1999-2002):

This study by the CDC provides national fluorosis data from the 1999-2002 NHANES survey. As noted by the CDC:

“Non-Hispanic blacks had higher proportions of very mild and mild fluorosis than did non-Hispanic white participants (Figure 19). . . . No clear explanation exists why fluorosis was more severe among non-Hispanic black children than among non-Hispanic white or Mexican-American children. This observation has been reported elsewhere, and different hypotheses have been proposed, including biologic susceptibility or greater fluoride intake.”

SOURCE: Beltran-Aguilar ED et al. (2005). Surveillance for dental caries, dental sealants, tooth retention, edentulism, and enamel fluorosis — United States, 1988–1994 and 1999–2002. *MMWR Surveillance Summaries* 54(3): 1-44.

The following chart provides the fluorosis rates for each racial group. As can be seen, the rate of **moderate/severe** dental fluorosis in the black community is almost twice as high as the rate in the white community (3.43% vs. 1.92%) and the rate of **mild** fluorosis is more than twice as high (8.24% vs. 3.87%). It is important to bear in mind when viewing this data that these figures are the national average, and thus include fluoridated *and unfluoridated* communities. Were the data limited to fluoridated communities, the fluorosis rates for all racial groups would be higher. The rates would also be higher if the chart excluded adults. For, as the chart shows, children and adolescents have higher fluorosis rates than the adults (due to the increase in fluoride exposure amongst the younger generation). Thus, the percentage of children and adolescents in fluoridated communities is almost certainly higher than the rates displayed in this table.

Characteristic	Unaffected		Very mild		Mild		Moderate/Severe	
	% [†]	SE [§]	%	SE	%	SE	%	SE
Age group (yrs)								
6–11	59.81	4.07	19.85	2.12	5.83	0.73	2.71	0.59
12–15	51.46	3.51	25.33	1.98	7.68	0.93	3.56	0.59
16–19	58.32	3.30	20.79	1.78	6.65	0.67	4.03	0.77
20–39	74.86	2.28	11.15	1.22	3.34	0.58	1.81	0.39
Sex								
Male	67.65	2.63	15.65	1.52	4.58	0.54	2.12	0.39
Female	66.97	2.84	15.58	1.36	4.84	0.61	2.78	0.49
Race/Ethnicity[¶]								
White, non-Hispanic	69.69	3.13	14.09	1.56	3.87	0.60	1.92	0.48
Black, non-Hispanic	56.72	3.30	21.21	2.16	8.24	0.82	3.43	0.54
Mexican-American	65.25	3.89	15.93	2.24	5.05	0.72	4.82**	1.81
Poverty status^{††}								
<100% FPL	68.02	3.21	14.28	1.73	4.07	0.69	2.97	0.66
100%–199% FPL	66.92	2.91	16.11	1.46	5.21	0.78	2.65	0.56
≥200% FPL	66.88	2.75	15.56	1.56	4.83	0.50	2.00	0.37
Total	67.40	2.65	15.55	1.37	4.69	0.49	2.45	0.40

TABLE 23: Enamel fluorosis among persons aged 6–39 years, by selected characteristics — United States, National Health and Nutrition Examination Survey, 1999–2002.

Kumar (1999, 2000) — fluorosis Survey in Newburgh & Kingston New York:

These two studies report the results of a fluorosis survey of children in a fluoridated (Newburgh) and unfluoridated (Kingston) town in New York. In both the fluoridated and unfluoridated communities, black children were found to have higher rates of dental fluorosis. Specifically, being black doubled the odds of getting very mild to severe dental fluorosis (odds ratio = 2.3). According to the authors:

“African-American children studied in 1995 were at higher risk for dental fluorosis than children of other racial groups. . . . The higher risk for dental fluorosis observed among African-American children is consistent with several other studies. Russell noted that dental fluorosis was twice as prevalent among African-American children than white children in the Grand Rapids fluoridation study. Because this study was conducted in an era when other sources of fluoride products were not available, this finding suggests either that fluorosis is more likely to occur in African-American children due to biologic susceptibility, or that their fluoride intake was greater.”

SOURCE: Kumar JV, Swango PA. (1999). Fluoride exposure and dental fluorosis in Newburgh and Kingston, New York: policy implications. *Community Dentistry & Oral Epidemiology* 27:171-80.

After finding higher rates of fluorosis in the black community, the authors attempted to determine if the rate could be explained by low-birth weight. In their follow-up analysis in 2000, the authors again found higher rates of fluorosis among black children. The higher rate, however, was not explained by low birth weight. According to the authors:

“The results support our earlier findings that African-American children were at higher risk for dental fluorosis in the fluoridated area. Even in the nonfluoridated area, there was a suggestion that African-American children were at higher risk. Whether this higher risk for African-American children is the result of their lower threshold for fluoride or due to other unknown sources of fluoride is not known. It has been reported that African-American children in the United States drink more water and less milk compared to white children. In Newburgh, this difference in the fluid consumption may have resulted in a higher prevalence of fluorosis in African-American children. . . . Because a race fluorosis association could have important policy implications, a large-scale study in a representative sample should be conducted to test specifically the hypothesis that African-American children are at higher risk for fluorosis.”

SOURCE: Kumar JV, Swango PA. 2000. Low birth weight and dental fluorosis: is there an association? *Journal of Public Health Dentistry* 60(3):167-71.

Williams & Zerner (1990) — Fluorosis Survey in Georgia:

In this study, the authors examined the rate of fluorosis in 374 children with lifelong residence in two fluoridated areas of Georgia: Augusta (0.9 to 1.2 mg/l) and Richmond County (0.2 to 0.9 mg/l). The authors found a very high

fluorosis rate (81%) among the children in fluoridated Augusta, with 14% of the children having moderate or severe fluorosis. The fluorosis rate in Richmond County (54%) was also high. The authors attributed the high fluorosis rate to inappropriate fluoride supplementation by local pediatricians and dentists, as well as an increase in overall fluoride exposure from other sources. As the following table shows, black children were found to have higher rates of moderate/severe fluorosis (TSIF score of 4 to 7) in both communities. A TSIF score of 4 refers to teeth with “light to very dark brown” staining, a TSIF score of 5 refers to teeth with a “definite physical defect” (pitting); and a TSIF score of 7 refers to teeth where “large areas of enamel may be missing and the anatomy of the tooth may be altered. Dark-brown stain is usually present.” As the table shows, 16.7% of black children in Augusta had moderates/severe fluorosis versus 9.1% of white children. In Richmond County, the respective rates were 3.3% vs 0%.

Dental Fluorosis Rates in Augusta & Richmond County, Georgia

Residence/Race	No Fluorosis (TSIF Score = 0)	Very Mild/Mild Fluorosis (TSIF Score = 1 – 3)	Moderate/Severe Fluorosis (TSIF Score = 4 – 7)
City/ Black	19.6%	63.7%	16.7%
City/White	18.2%	72.7%	9.1%
County/ Black	47.8%	48.9%	3.3%
County/White	44.9%	55.1%	0%

SOURCE: Williams JE, Zwemer JD. (1990). Community water fluoride levels, preschool dietary patterns, and the occurrence of fluoride enamel opacities. *Journal of Public Health Dentistry* 50:276-81.

Butler (1985) — Fluorosis Survey in 16 Texas Communities:

“The severity of dental mottling in 2,592 school-aged, lifetime residents of 16 Texas communities was investigated in 1980-81 to identify factors associated with mottling and to construct a prediction model for the prevalence of mottling. The communities were selected to obtain a wide range of levels of fluoride in the drinking water. The children within each of the communities were contacted through their schools and received a dental examination to assess the severity of mottling. Information on demographic, dental health practice, and other candidate predictor variables was obtained from a questionnaire completed by a parent. A number of water quality measurements were also recorded for each community. White and Spanish-surname children had about the same prevalence of mottling while Blacks had a higher prevalence, odds ratio (OR) = 2.3, 95% confidence interval = 1.4, 3.7.”

SOURCE: Butler WJ, et al. (1985). Prevalence of dental mottling in school-aged lifetime residents of 16 Texas communities. *American Journal of Public Health* 75:1408-1412.

Russell (1962): Fluorosis survey in grand rapids, michigan:

“Russell (1962), in the Grand Rapids fluoridation study, noted that fluorosis was twice as prevalent among African-American children than white children.”

SOURCE: National Research Council. (1993). Health effects of ingested fluoride. National Academy Press, Washington DC. p. 44.

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From: [Audrey Adams](#)
To: [Phillips, Theresa \(DOH\)](#)
Subject: Comment on Proposed Changes to Fluoridation of Drinking Water (correction)
Date: Tuesday, February 23, 2016 1:34:44 PM
Attachments: [Comment to BOH Petition re Fluoride Rule Change 2-23-16.pdf](#)
[Dr Yolanda Whyte Fluoridation & Infant Toxicity letter 5-20-13.pdf](#)
[Racial Disparities in Dental Fluorosis.pdf](#)

Theresa,

I am sending you a corrected comment letter---I had erroneously left out my full affiliations in my earlier email. All else is the same. Please delete my previous email and attachments.

Thank you!

Audrey Adams

From: Audrey Adams [mailto:audrey55@comcast.net]
Sent: Tuesday, February 23, 2016 1:06 PM
To: 'theresa.phillips@doh.wa.gov'
Subject: Proposed Changes to Fluoridation of Drinking Water

Theresa,

Please find my attached comment, plus two accompanying attachments, for the proposed rule change to **WAC 246-290-460** regarding the concentration of fluoridation chemicals in drinking water. Please let me know if there is any trouble opening these PDF attachments.

Thank you!

Audrey

KYLE'S FLUORIDE STORY:

Why Any Fluoride in Tap Water is Too Much Fluoride for Vulnerable Citizens

By Audrey Adams

January 29, 2016

PART ONE - What I didn't know hurt him

I'm the mom of a delightful young man with autism, Kyle, age 30, who is severely hypersensitive to fluoride. I didn't know it for the first 14 years of his life and I didn't even know of the countless other chemical sensitivities. We've traveled a very long and painful road together, his pain physical and my pain emotional when I couldn't help him.

When Kyle was in his early teens, 13-14, he was in pain constantly, all over, but especially his head, the back of his neck and his extremities (hands, feet, lips, tongue). The chronic pain had skyrocketed after what I'll call a "toxological event" at age 13 from a horrific reaction to a doctor prescribed OTC treatment that is completely benign to most people, or rather, benign to most people *without* autism.

He cried inconsolably when the pain in his fingers got so bad that he couldn't play his beloved cello in the orchestra at school. He had to quit playing piano, too, and he could barely hold a fork to eat. There were mysterious pain "peaks", especially in the middle of the night, but other times, too. He screamed and raced around the house as if pursued by killer bees. His school sent him home repeatedly with horrific headaches. At night the house shook wildly with the leg-pounding on the bed that was more like a 4-hour grand mal seizure than "restless leg". His screaming was deafening. So little sleep....

We went to 8 medical specialists and not one of them could diagnose the source of the pain, let alone help relieve it. Tylenol guaranteed a full-blown migraine the next day so was useless, as were other pain-relievers. I became aware that he was completely intolerant of chemicals in the air and his food, so I changed his entire diet to organic, stopped using any cleaners or scented products and got the school to cooperate with a low-chemical environment. He only drank water---nothing else.

With all of these changes over the next year, he improved, but still had pain every day, with screaming, racing, jumping, sweating, heart racing---gasping from the exertion...and crying, begging me to "Make it go away!"

In 2000 a mom with two autistic teenagers first suggested to me that fluoride in tap water might be a problem for Kyle (as it was for her children) and recommended reverse osmosis or spring water. Once implemented, Kyle had a profound improvement in 3 days. Our lives improved dramatically.

No, he was not (is not) completely free of all pain---sadly, unexpected chemicals lurk everywhere. But by providing Kyle with fluoride-free water, chronic pain was no longer the 24/7 "norm", so detecting the other chemical triggers was finally more achievable and allowed much greater success at avoidance. Fluoride remains the worst, and most difficult, to avoid. It took me many years to understand the many sources of fluoride, and to fully realize the extent of Kyle's sensitivity to it.

PART TWO - Showers that hurt

There are many who believe that acute transdermal fluoride poisoning by showering or bathing in fluoridated tap water is simply impossible. In 2008 I was one of them. After 8 years of hauling thousands of gallons of reverse osmosis and spring water to my home, I was still a non-believer that a shower could harm Kyle. I used a carbon shower filter to protect him from chlorine fumes, and although I knew fluoride would not be filtered out, I naively thought it could not be absorbed through the skin. I had a strong bias against such a possibility because of the potential added burden to me.

Compared to those insanely hard, painful years prior to our initial "fluoride discovery", Kyle was doing decently in 2008 and I thought I was an expert at protecting him from chemicals by then. It turned out that I still had a whole lot to learn.

His vastly improved quality of life had enabled him to work a part-time office job at Highline Community College. But I was stumped about morning headaches he'd been having and had multiple conversations with his doctor about it. We investigated various possible causes---was it mold? Or something in his completely organic, highly specialized breakfast? My detective skills failed me. Each morning he woke up without a headache, but before he left for work his head was throbbing.

We were rescued again by another mother of an autistic teenager. During our first 3-hour conversation, she talked about her son's fluoride hyper-sensitivity, and her own which was even much worse. She told me of a visit to Seattle, and one bath in fluoridated water there that resulted in nasty red, itchy welts at the bath water line and below, which then bled and peeled over the next 2 weeks. I began to wonder about my own mysterious itchy rash---tiny red bumps on my scalp, chest and back---and began to wonder about Kyle's morning headaches.

The next day I had Kyle skip his morning shower. No morning headache. Then I had him shower before bed. Déjà vu! It had been many years since Kyle's once-common, middle of the night bedroom "earth-shakes"---wildly pounding, so-called "restless legs" and many hours of screaming. Now, seeing it again, I remembered that back in those old days I gave him Epsom Salt baths before bed to reduce pain...in fluorinated (but de-chlorinated) water.

I stopped the showers entirely the next week and heated bottled water on the stove for my 220 pound grown man to sponge-bathe. No morning headaches. I conducted several more "shower trials", still using the carbon shower filter, and all were followed by head pain around 5-15 minutes after showering (even before any food had been eaten). I tried the evening shower only once more, with the same screaming aftermath into the middle of the night. Clearly, the pain was much worse with the bedtime showers, but I have no idea why.

Over the next 6 months or so, I tried many different shower filters, but none protected Kyle from fluoridation chemicals enough to avoid the after-shower headaches, so I continued to heat water on the stove.

When we'd go camping, I'd call ahead about the fluoridation status. Campgrounds almost never have added fluoride, but do have chlorine. Kyle does not get headaches when showering at campgrounds with no fluoride. Once, I neglected to check a campground water source. I always buy gallons of spring

water for drinking and cooking when we travel, but I had Kyle take a shower, assuming it was safe. His painful reaction is still vivid in my mind as one of his worst, lasting into the next day. I asked the park ranger and, yes, the campground had fluoridated municipal water. Guilt tortures me at such times.

When we'd visit relatives in Oregon with no fluoridation, but with chlorination, there were no after-shower headaches. Same with motels---in fluoridated towns, headaches followed the shower. In non-fluoridated motels, even in the absence of a chlorine filter, he did not get headaches after showering.

Now that I was connecting the fluoride dots, I also noticed that my itchy rash disappeared after 3-4 days of no fluoridated showers and returned about a week after resuming. Oddly, I've never seen a similar rash on Kyle, but I have since talked to several other women who also get tiny red itchy bumps on their scalp from fluoridated showers. Could we be reacting to a different fluoridation contaminant, I wonder?

Kyle's respite provider, a young woman who has a sister with Down Syndrome, experiences gut pain when drinking fluoridated water and has many food and chemical sensitivities herself.

After all those months of bottled water sponge baths, I finally found a shower filter that removes enough of the fluoridation chemicals for Kyle to be able to shower IF we do all 4 of these things: 1) limit the shower to 4 minutes; 2) use warm water, not hot; 3) keep water pressure at the lowest possible, about 1 gal/min; and 4) change filter at 3 months, not 6 as the manufacturer suggests.

PART THREE - What's wrong with that turkey?!...and other food troubles

The trouble with food is that it is very inconsistent. Fluoride is never labeled unless on a dental product. I had been completely unprepared to safely feed my profoundly chemically sensitive---but hungry---teenage autistic son. I learned as I went and, since I had stopped his chronic 24/7 pain by halting his fluoridated drinking water, I could finally see the results of my food mistakes...and rather quickly.

I remember a particular trip---I was taking an intimidating stack of paperwork regarding Kyle's disability to a state agency. As we drove, Kyle was calm and happy...that is, until he ate the "natural" protein bar I handed him. In barely more than a minute, Kyle's 220 pound frame was madly butt-pounding the seat next to me (that's what happens when you "jump" while still wearing a seat belt---he's compliant with rules). My car was literally jumping down the road. It was hard to control the car, but impossible to control my son---screaming in pain, heart pounding, sweating profusely. It was a terrible day, but it did get the attention of the otherwise bored state worker as we arrived. I didn't know then that the chocolate in the "natural" protein bar could contain high levels of fluoride due to pesticides.

Another food event, this time Thanksgiving, when Kyle was in his early 20's. There were 14 eager eaters and I had had the (not so) bright idea of cooking an "all natural" turkey breast instead of a whole bird. The very few ingredients on the label were all safe. Kyle adores family, but he cherishes food above nearly all things. He was the first one eagerly seated at the Thanksgiving table and, without waiting, helped himself to the turkey I had just put on the table. In approximately 5 bites' time (for Kyle that's about 60 seconds), he shot up out of his chair, instantly screaming, running, jumping, all over the house---heart pounding so hard it was literally visible through his shirt---cherry red ears and large red blotches on his face, neck and chest. He didn't stop for about a half hour when he finally collapsed on the couch,

panting and sweating, in pain. He finally slept, unable to eat. Everyone was traumatized. I hadn't even spiced the meat. So what on earth was wrong with that turkey breast?!

FAN's website answered my question---it advised to avoid "mechanically deboned poultry", due to high fluoride content. About 2 years later I bravely (or stupidly) tried organic chicken breast. Kyle had an identical reaction, but much less severe and not as long. The next day I called the 800 number on the chicken package and learned that the very same mechanical deboning method is used for organic poultry. Kyle can eat any poultry still on the bone, organic or conventional, with no pain.

The good news is that I can describe certain events that were the result of *acute* fluoride exposures ONLY because Kyle is not suffering from *chronic* fluoride toxicity from fluoridated water anymore.

PART FOUR - Fluoride is everywhere

And thanks to my awareness of fluoride due to Kyle's hyper-sensitivity, I made some discoveries about my own reactions to fluoride ingestion that I would not have understood otherwise. I do not get headaches (and I don't scream and jump either!), but I do get mild to very severe pain in certain joints---specifically, the joint that was at the lowest point during sleep (whichever hip) or the joint most used during the day---about 4-5 hours after consuming certain non-organic chocolate products.

I do not have arthritis, but I do love chocolate and I have experienced more than a dozen acute arthritic-like pain events (over several years' time) for stupidly eating conventional chocolate. Sometimes even just tiny amounts of it. Unfortunately, it's like Russian Roulette with chocolate because many conventionally grown cocoa products are okay while others can be very high in fluoride, depending on the (unlabeled) pesticide levels. But the only way I can determine with certainty that the pain was caused by a specific food item is to wait a month or more, and free of any pain, then re-test that same chocolate product on myself. Unfortunately, I have positively confirmed the pain culprit every time I have done this, which really takes the fun out of chocolate.

I wasn't brave enough, however, to re-test myself when I had a horrible reaction to organic green tea. I knew both green and black tea can be very high in fluoride, but I had a momentary lack of judgment. (Organic tea can be better, but wasn't this time.) I drank it in late morning and, according to my own special "fluoride clock" started feeling an uncomfortable right shoulder at 2-ish and crying in pain by 5pm. As I often do, I had been "mousing" on the computer all day, right-handed. Tea was the only unusual thing that day. From these, and other events, it appears that ingested fluoride settles in my "weakest link" at the time. Fluoride sources are many, are hard to discover, and difficult to avoid.

Pain from fluoride is a very mysterious thing and I don't pretend to fully understand it, but I do want to stress that if a person is chronically exposed to fluoride---for example by drinking tea, mocha lattes or fluoridated water every day---they cannot know for sure that seemingly unrelated chronic symptoms are **not** caused by the "stack" of fluoride sources. I have no answers except avoidance, which can be done, but only if you've learned many hard lessons to get there. Very sadly, most families with autistic children and adults have not yet discovered what I have learned. Like my son, many with autism are reacting to fluoridated tap water, yet their lives literally depend on the daily consumption and use of it.

The unfairness of forcing ANY drug on EVERY person---and the tragic cruelty of it---is heart-wrenching.

From: [Audrey Adams](#)
To: [Phillips, Theresa \(DOH\)](#)
Subject: Comment: Proposed Changes to Fluoridation of Drinking Water
Date: Tuesday, February 23, 2016 4:57:05 PM
Attachments: [Kyle"s Story for BOH Petition re Fluoride Rule Change 2-23-16.pdf](#)

Theresa,

I am attaching a second Comment for **WAC 246-290-460** regarding the concentration of fluoridation chemicals in drinking water. It is a document that I presented to the Pharmacy Quality Assurance Commission in January 2016, but I would like it officially entered in the comments for this petition for rule change. It explains, in very human terms, why lowering the fluoride concentration to 0.7ppm isn't nearly low enough. To protect vulnerable citizens like my son---most who have no voice in what they eat, drink or are exposed to and who rely on the integrity of the public health agencies to protect them---water fluoridation must be stopped entirely.

Thank you,

Audrey Adams
President, King County Citizens Against Fluoridation
Board, Washington Action for Safe Water
10939 SE 183rd Ct
Renton, WA 98055

From: Audrey Adams [mailto:audrey55@comcast.net]
Sent: Tuesday, February 23, 2016 1:06 PM
To: 'theresa.phillips@doh.wa.gov'
Subject: Proposed Changes to Fluoridation of Drinking Water

Theresa,

Please find my attached comment, plus two accompanying attachments, for the proposed rule change to **WAC 246-290-460** regarding the concentration of fluoridation chemicals in drinking water. Please let me know if there is any trouble opening these PDF attachments.

Thank you!

Audrey

From: [Karen Spencer](#)
To: [Phillips, Theresa \(DOH\)](#)
Subject: Fwd: Fluoridation of Drinking Water - Public Hearing 2/23/2016
Date: Tuesday, February 02, 2016 1:53:41 PM

Given that the prestigious Cochrane group's 2015 review of fluoridation literature confirmed the finding of the similarly impressive 2000 York panel, where both found that the evidence of benefit to children was small and highly suspect because of the high risk of bias in those dental studies and contained no evidence of whole health safety but proved that approximately 12% of all children in fluoridated communities would have dental fluorosis to such a degree to be 'aesthetically displeasing,' I can't fathom why any state or municipal body would be considering doing anything other than mandating that fluoridation immediately cease in all municipalities as a public health emergency order.

Add to this damning indictment of the historical political/scientific machinations in order to implement fluoridation, the 2006 National Academy of Science/National Research Council (NRC) report unequivocally states that there is no scientific evidence of any safe level of water fluoridation for susceptible populations such as pregnant women and their fetuses, infants and young children, the elderly, or those with prolonged health conditions such as diabetes, kidney disease or thyroid disorder. However, the NRC had only one charge - to determine if the EPA 4ppm MCLG is safe. The NRC advised the EPA that the 4 ppm MCLG was decidedly unsafe. The EPA has done nothing in ten years to address that finding or any of the other issues raised in the 2006 report.

Moreover, we have science since 2006 that confirms and expands on the 800 items of science the NRC referenced regarding the adverse impact of fluoridation on the health of thyroid, kidney, and developing brains of fetuses and young children. Not only that, the evidence from the CDC's own data and communications unearthed by recent FOIA requests clearly show that the Environmental Injustice of fluoridation to non-white and poor populations is staggering, which is why Civil Rights leaders are calling for the cessation of fluoridation programs which ruin teeth, damage kidneys and even worsen diabetes in their communities, while leaching additional lead from the pipes to further poison their poor children.

Ironically, the CDC had asked Cochrane to do the 2015 review. The CDC and their fluoride partners are trying to spin it as they tried to spin the York review and NRC report. The best the CDC and dental lobbyists have managed has been to cast aspersions on the internationally renowned gold standard Cochrane principles, offer opinion pieces mostly written by dentists and bloggers "refuting" rigorous science and making denigrating comments about "antis." In other words, those whose paychecks and professional reputations are tied to promoting fluoridation policy are doing their best to deceive the public and to lobby state officials to cement fluoridation in place regardless of its ineffectiveness and dangerousness.

Additionally, we know that fluoride is highly corrosive and leaches lead and other metals out of the piping. We know that when chloramine is added to fluoride, the corrosiveness multiplies. That we add more chemicals to the water in an attempt to adjust the PH is neither a guarantee of potable water nor a guarantee that corrosiveness is consistently reduced. Several large studies with hundreds of thousands of blood samples from children have proven this fact, albeit not as dramatically as in Flint, but nevertheless, children drinking fluoridated water have higher lead levels in their blood. This is apart from the 25 years of science confirming that when fluoridated water is consumed by pregnant women and their young children, there is

an increase in learning disabilities.

My comment is that Washington should save their municipalities money and their citizens misery. Get on the right side of history and issues an immediate cease and desist order to all water departments based on 21st century science.

A FEW MODERN RESOURCES:

1. 2014 legal analysis by Prof. Rita Barnett-Rose (*ethical & legal considerations*):
http://works.bepress.com/rita_barnett/3/
2. 2014 Peel Canada legal memo and scientific affidavit 2006 NRC panelist, Dr. Kathleen Thiessen (*disproportionate harm to susceptible populations*):
<http://momsagainstfluoridation.org/sites/default/files/Fluoridation-Legal-Opinion-June-24-14.pdf>

A few 2014-2015 studies and reports plus two on fluoride and lead:

1. S Peckham, D Lowery, S Spencer. Are fluoride levels in drinking water associated with hypothyroidism prevalence in England? A large observational study of GP practice data and fluoride levels in drinking water. *J Epidemiol Community Health*. 24 February 2015. doi:10.1136/jech-2014-204971. <http://jech.bmj.com/content/early/2015/02/09/jech-2014-204971>
2. Navneet Singh, et al. A comparative study of fluoride ingestion levels, serum thyroid hormone & TSH level derangements, dental fluorosis status. *Springerplus*. 2014; 3: 7. 2014 Jan 3.
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3890436/pdf/40064_2013_Article_766.pdf
3. I. Gutowska, et al. Fluoride as a factor initiating and potentiating inflammation in THP1 differentiated monocytes/macrophages. *Toxicology in Vitro*. Volume 29, Issue 7, October 2015, Pages 1661–1668.
<http://www.sciencedirect.com/science/article/pii/S0887233315001605>
4. Louveau A, et al. Structural and functional features of central nervous system lymphatic vessels. *Nature*. 2015 Jul 16;523(7560):337-41. Epub 2015 Jun 1. <http://www.ncbi.nlm.nih.gov/pubmed/26030524>
5. A Malin and C Till. Exposure to fluoridated water and attention deficit hyperactivity disorder prevalence. *Environmental Health* 2015, 14:17 doi:10.1186/s12940-015-0003-1. <http://www.ehjournal.net/content/pdf/s12940-015-0003-1.pdf>
6. Zhang S, et al. Modifying Effect of COMT Gene Polymorphism and a Predictive Role for Proteomics Analysis in Children's Intelligence in Endemic Fluorosis Area in Tianjin, China. *Toxicol Sci*. 2015 Apr;144(2):238-45. doi: 10.1093/toxsci/kfu311. Epub 2015 Jan 1. PMID: 25556215. <http://www.ncbi.nlm.nih.gov/pubmed/25556215>
7. Anna L. Choi, Ying Zhang, Guifan Sun, David C. Bellinger, d, Kanglin Wang, Xiao Jing Yang, Jin Shu Li, Quanmei Zheng, Yuanli Fug, Philippe Grandjean, Association of lifetime exposure to fluoride and cognitive functions in Chinese children: A pilot study. *Neurotoxicology and Teratology*. Volume 47, January–February 2015, Pages 96–101.
<http://www.sciencedirect.com/science/article/pii/S0892036214001809>
8. Khan SA, Singh RK, Navit S, Chadha D, Johri N, Navit P, Sharma A, Bahuguna R. Relationship Between Dental Fluorosis and Intelligence Quotient of School Going Children In and Around Lucknow District: A Cross-Sectional Study. *J Clin Diagn Res*. 2015 Nov;9(11):ZC10-5. doi: 10.7860/JCDR/2015/15518.6726. Epub 2015 Nov 1.
<http://www.ncbi.nlm.nih.gov/pubmed/26673535>
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10. F. Liu et al.. Fluoride exposure during development affects both cognition and emotion in mice. *Physiol Behav*. 2014 Jan 30;124:1-7. <http://www.ncbi.nlm.nih.gov/pubmed/24184405>
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Karen Favazza Spencer
67 Langsford Street
Gloucester, MA 01930
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Begin forwarded message:

theresa.phillips@doh.wa.gov



Communities support the national standard for community water fluoridation

February 23, 2016

Dear Members of the Washington State Board of Health,

As the Chief Operations Officer & Strategist at Whatcom Alliance for Health Advancement (WAHA), I am excited to provide my full support in adjusting WAC 246-290-460 to follow the recommendations of the US Department of Health and Human Services to support community water fluoridation at the optimal standard of 0.7 mg/L. Community water fluoridation remains one of the most cost effective and safest ways to prevent dental decay.

Oral health matters. People of all ages and demographics suffer when they experience dental disease. Community water fluoridation has been used and extensively studied for 70 years in cities all across America. It has been proven to help reduce cavities by at least 25 percent over a person's lifetime. This will save money, time, eliminate pain and help prevent dental disease which has been linked to heart disease, stroke and other serious health conditions.

Community water fluoridation is supported by the American Academy of Pediatrics, American Dental Association, and the Institute for Science and Medicine among many others. Please support the national standard for community water fluoridation as it is one of the most highly recommended ways to improve oral health within a community.

Thank you for your time and consideration on this matter, which WAHA believes will improve the health of all residents affected.

Sincerely,



James A. Diegel, FACHE
Chief Operations Officer & Strategist

From: [Edlin, Tiffany R.](#)
To: [Phillips, Theresa \(DOH\)](#)
Subject: Letter of Support for Community Water Fluoridation
Date: Tuesday, February 23, 2016 10:52:51 AM
Attachments: [image001.png](#)
[Letter of Support Community water fluoridation.PDF](#)

Hello Ms. Phillips,

Please find WAHA's letter of support for community water fluoridation.

Please let me know if you have any questions or concerns.

Regards,
Tiffany Edlin

Tiffany Edlin
Administrative & Governance Coordinator

Whatcom Alliance for Health Advancement
360.788.6509 | (TTY) 1.800.833.6388
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800 E. Chestnut St., Lower Level, Ste. 2
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2-8-2013 8-49-51 AM



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mailgate.hinet.org made the following annotations

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From: [Carol S. Kopf](#)
To: [Phillips, Theresa \(DOH\)](#)
Subject: No Fluoridation Safety Studies Exist
Date: Tuesday, February 23, 2016 6:36:41 AM

The Centers for Disease Control says on its fluoridation page that "[The safety and benefits of fluoride are well documented](#)," but provides no such documentation. In fact, they provide absence of evidence or evidence to the contrary.

These are the fluoridation safety [references](#) the CDC provides:

1) The US Community Preventive Services Task Force [Preventing Dental Caries: Community Water Fluoridation, 2000 and 2013](#)

According to the Task Force, the basis of its 2000 fluoridation report was a systematic review by McDonagh et al. (2000) dubbed the "York Review." Since officials such as the CDC, organized dentistry and other fluoridation promoters continually misrepresent the York Review as favoring fluoridation, the York reviewers were forced to explain, "[We are concerned about the continuing misinterpretations of the evidence...We were unable to discover any reliable good-quality evidence in the fluoridation literature world-wide.](#)"

The 2013 Task Force findings are also [based on most of the same unreliable studies](#) included in the York Review.

The Task Force admitted poor data quality. It reports, "Quality issues across studies included failure to measure or acknowledge relevant factors such as the contribution of fluoride from other sources or access to dental care. Most of the studies also had measurement issues; many did not blind the examiners, and across studies there was a lack of consistency among indices used to measure caries and fluorosis."

[They admitted they couldn't evaluate how race, ethnicity and total fluoride intake influenced fluoridation effectiveness because of limited data. "Few studies provided data on socioeconomic status."](#)

2) National Research Council (NRC): [Fluoride in Drinking Water: A Scientific Review of EPA's Standards, 2006](#)

NRC reveals that fluoride poses risks to the thyroid gland, bones, diabetics, kidney patients, high water drinkers and others and can severely damage children's teeth. NRC concluded that EPA's current MCLG [Maximum Contaminant Level Goal] is too high to protect health. EPA failed to heed NRC's advice even though EPA asked NRC to do this fluoride toxicology research for them. Warnings to avoid mixing infant formula with fluoridated water emerged after NRC's conclusions were publicized, with the [American Dental Association](#) leading the [standpede of government and health organizations](#) issuing cautionary advice.

NRC members were shocked at how little fluoride safety research has been done. [NRC recommends many safety studies be finally conducted and report that fluoride's link to lower IQ and cancer are plausible.](#)

So consider yourself a guinea pig in this ongoing human experiment.

3) US Public Health Service, [Oral Health in America: A Report of the Surgeon General, 2000](#)

The Surgeon General's 2000 report identified oral health as a "silent epidemic," despite 55 years of fluoridation, at that time. And, nothing changed since then. [Tooth decay is a crisis](#) in all fluoridated cities and states despite dozens of reports, meetings, hearings, webinars, conferences, the hiring of state fluoridation consultants, dental directors and conducting fluoridation spokesperson training.

4) Centers for Disease Control and Prevention, [Achievements in Public Health 1900–1999 — Fluoridation of Drinking Water to Prevent Dental Caries, 1999](#)[PDF-133KB]

This is neither a peer-reviewed published study nor objective. It's an outdated article written by the CDC to promote fluoridation.

5) [Institute of Medicine Dietary Reference Guidelines, 1997](#)

This is not a safety study but sets limits on fluoride intake by age group and describes different fluoride sources, some of which have higher fluoride levels than the EPA allows in public water supplies. For example, "brewed tea contains fluoride at concentrations ranging from 1 to 6 mg/liter depending on the

amount of dry tea used, the water fluoride concentration, and brewing time." EPA set 4 mg/L as the maximum contaminant level of fluoride in public water supplies - a level too high to protect health according to the NRC Fluoride Panel in 2006. Yet, the CDC doesn't inform Americans that this level found in some teas can be equally as harmful as consuming highly fluoridated water.

6) [National Health and Medical Research Council, Australian Government. A Systematic Review of the Efficacy and Safety of Fluoridation. 2007](#)

"This report has been used extensively in Australia in efforts to get more communities fluoridated there, especially in Queensland. However, this report is little more than a duplication of large chunks of the York Review but without the caveats the York Review provided," according to Connett, Beck, and Miklem in their carefully referenced book "The Case Against Fluoride." Even though this report came out after the extensive and detailed US NRC report of 2006, the only reference this report made to the NRC report and its 1100 references was a brief mention in its introduction.

"Moreover, while claiming that there was no evidence to support any health effects from fluoridation at 1 ppm, nowhere did [they] acknowledge that practically no health studies had been conducted on this matter in Australia or, indeed, in any other fluoridating country," says Connett, et al.

7) [World Health Organization. Nutrients in Drinking Water. 2005](#)

This report mainly discusses desalination as a source of drinking water.

"WHO emphasizes that in setting national standards for fluoride it is particularly important to consider climatic conditions, volumes of water intake, and intake of fluoride from other sources (e.g. food and air)," which the CDC and no other US government agency does.

"

And, by the way, fluoride is neither a nutrient nor essential for healthy teeth See:

<http://fluoridealert.org/studies/essential-nutrient/>

Carol S. Kopf

From: [Gerald Steel](#)
To: [Phillips, Theresa \(DOH\)](#)
Subject: Please confirm receipt today of seven emailed comments on proposed WAC 246-290-460 from Gerald Steel
Date: Tuesday, February 23, 2016 1:18:09 PM

Theresa,

Please confirm receipt today of seven emailed comments on proposed WAC 246-290-460 from Gerald Steel (not including this current request).

Gerald Steel PE
Attorney at Law
7303 Young Rd. NW
Olympia WA 98502
360.867.1166

From: spdk8@aol.com
To: [Phillips, Theresa \(DOH\)](#); [DeLong, David J \(DOH\)](#)
Cc: spdk8@aol.com
Subject: Please reduce or eliminate added fluoride to our water supply.
Date: Tuesday, February 09, 2016 10:24:15 PM

Public Comment.

Please reduce or eliminate added fluoride to our water supply.

- 1) The dosage can not be controlled. People drink different amounts of water. Some will get too much fluoride.
- 2) Water drains to streams. We do not know the effect of this runoff on ecosystems.
- 3) Fluoride is intended to treat teeth. But ingesting it, systemically, instead of applying it topically to teeth, is wasteful and may be harmful.
- 4) Government should not have the power to medicate us via the water supply. It sets a very dangerous precedent. There is no consent.
- 5) Fluoridation is expensive and hazardous to the workers who must handle it. Municipalities are exposing themselves to liability risk for future worker injury claims.
- 6) It erodes pipes, and causes unnecessary expense at a time when budgets are tight.
- 7) We get fluoride in our toothpaste and at the Dentist's office. We don't need it in the water supply.
- 8) Some studies show higher fluoride levels are associated with lower child IQ.

It is not worth the risk and the expense. It sets a dangerous precedent. Please reduce or eliminate added fluoride in the water supply.

Thank you for your consideration.

Bruce Guthrie
Edmonds, WA

JAMES ROBERT DEAL ATTORNEY PLLC

4130 166th Place SW, Lynnwood, Washington 98037

Telephone 425-771-1110, Fax 425-776-8081

James@JamesDeal.com

NEW FLUORIDATION LEVEL SHOULD BE ZERO

February 23, 2016

Read online at

www.fluoride-class-action.com/deal-to-board-of-health-2-23-16

Washington State Department of Health

Attention: Theresa Phillips

PO Box 47820

Olympia WA 98504-7820

Also sent by email to: theresa.phillips@doh.wa.gov

Telephone: 360-236-3147.

To the Washington State Department of Health

The Department of Health has proposed to authorize a new .7 ppm fluoridation level under WAC 246-290-460.

The new fluoridation should be zero.

See the proposed rule here:

<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/RegulationandCompliance/RuleMaking>

See the supporting document here:

<http://www.doh.wa.gov/Portals/1/Documents/4200/FluorideSA.pdf>

There are many grounds for opposing fluoridation, but I will focus primarily on two, the fact that it is illegal and that it leaches lead. I will also touch on the fact that it is ineffectual and that it has harmful side effects.

Fluoridation is Illegal Under Washington Law

www.fluoride-class-action.com/illegal

Section 7 of the proposed rule says:

Section 7: Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

This is an incorrect statement, as I will demonstrate.

Washington State Department of Health
Attention: Theresa Phillips
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Fluoridation is illegal under Washington law. WAC 246-290-220 says that fluoridation may be done in Washington only with fluoridation materials which **“comply with”** the National Sanitation Foundation NSF Rule 60 standard. NSF 60 requires 1) that some 20 toxicological studies be done on drinking water additives and 2) that a risk estimation test must be done. The toxicological studies are not being done. The risk estimation tests are not being done. Fluoridation should stop until NSF or the suppliers produce their toxicological studies and they are approved by the Board of Health and after proper risk estimation tests are done.

Supporters of fluoridation say that NSF 60 as revised, has waived the requirement that toxicological studies be done. This is not so for the reasons given below. Even if NSF waives the toxicological studies, it does not waive the risk estimation tests.

Neither the toxicological studies is waived, and fluoridation fails both the toxicological studies and the risk estimation tests.

This is a partial list of the toxicological studies which the 2009 version of NSF 60 says must be done:

“assays of genetic toxicity, acute toxicity ..., short term toxicity ..., subchronic toxicity ..., reproductive toxicity, developmental toxicity, immunotoxicity, neurotoxicity, chronic toxicity (including carcinogenicity), and human data (clinical, epidemiological, or occupational) when available. To more fully understand the toxic potential of the substance, supplemental studies shall be reviewed, including, but not limited to, mode or mechanism of action, pharmacokinetics, pharmacodynamics, sensitization, endocrine disruption, and other endpoints, as well as studies using routes of exposure other than ingestion. Structure activity relationships, physical and chemical properties, and any other chemical specific information relevant to the risk assessment shall also be reviewed. ...

“A weight-of-evidence approach shall be employed in evaluating the results of the available toxicity data. This approach shall include considering the likelihood of hazard to human health and the conditions under which such hazard may be expressed. ...

“Toxicity testing requirements for the quantitative risk assessment procedure are defined in annex A, table A2. A minimum data set consisting of gene mutation assay, a chromosomal aberration assay, and

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a subchronic toxicity study shall be required for the performance of a quantitative risk assessment. ...”

The evidence that these studies are not being done is strong. See page 67 of a deposition in which NSF official Stan Hazen admits that the studies are not being done.

Dr. DeLong does not deny my assertion that the studies are not being done. His response is that the studies are not required and are waived in the express language of NSF 60-2013, Section A.3.2, which says:

“If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18) no additional collection of toxicological data shall be required ...”

There are several problems with Mr. DeLong’s logic.

1) Mr. DeLong cut off the rest of the sentence. The full sentence says:

“If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18) no additional collection of toxicological data shall be required **prior to performance of the risk estimation** (see annex A, section A.6.1).” [emphasis added]

Even if the EPA has set an MCL for fluoride and for the other contaminants in the fluorosilicic acid mixture, and even if the toxicological studies are waived, the risk estimation test in Section A.6.1 is not waived and must still be done. Fluoridation at .7 ppm fails the risk estimation test.

NSF 60 Section A.6.1 draws the two boxes below and uses it to illustrate the risk estimation test:

“To calculate the SPAC [single product allowable concentration], an estimate of the number of potential sources of the substance from all products in the drinking water treatment and distribution system shall be determined. The SPAC shall be calculated as follows:

SPAC (mg/l) =	$\frac{\text{promulgated regulatory value (mg/l)}}{\text{estimated number of drinking water sources}}$
---------------	--

“In the absence of specific data regarding the number of potential sources of the substance in the drinking water treatment and distribution system, the SPAC shall be calculated as 10% of the promulgated regulatory value.

NSF 60 Section A.6.1 is awkwardly worded. A better diagram of the calculation would look like this:

SPAC (mg/l) =	$\frac{\text{promulgated regulatory value (mg/l)}}{\text{estimated \# of drinking water sources (or other sources of fluoride)}}$	X 10%
---------------	---	-------

SPAC is defined in Section 2.16 as follows:

“single product allowable concentration (SPAC): The maximum concentration of a contaminant in drinking water that a single product is allowed to contribute under annex A of this Standard.

According to the NSF 2008 Fluoride Fact Sheet, “The SPAC, as defined in NSF/ANSI Standard 60, is one tenth of the US EPA’s MCL”.

Let’s do the math: The EPA MCL [maximum contaminant level] for fluoride is 4.0 ppm. Divide 4.0 ppm by the number of fluoride sources, which NSF assumes to be one. The result is 4.0 ppm. Then multiply 4.0 ppm by 10%. The result is .4 ppm. The current .7 ppm for fluoride is higher than .4 ppm. Thus, fluoridation at .7 ppm fails the risk estimation test. Therefore, fluoridation at .7 ppm does not “comply with” NSF 60.

Even if the toxicological studies are not done, fluoridation materials still do not “comply with” NSF 60.

2) And we are not done yet with the risk estimation test. Notice that the denominator in the above formula: “estimated number of drinking water sources”. This should have been worded to say “estimated # of drinking water sources (or other sources of fluoride)”. The denominator would be 1.0 ppm in a district with no other sources of fluoride in the human diet. However, if there are significant other sources of fluoride in the human diet, the denominator will get larger, and the SPAC or allowed level of fluoride to be added will get smaller.

When fluoridation began in 1945, there were few other sources of fluoride in most newly fluoridated water districts. Today there are now many other sources of fluoride besides the fluoride added to drinking water: foods made with tap water; coffee, tea, soft drinks, beer and other beverages made with fluoridated tap water; juices reconstituted with tap water; bottled water made from tap water; common fruits, grains, and dried bulk products sprayed with sulfuryl fluoride; the many fluorinated drugs such as Prozac; and finally fluoridated toothpaste, which is absorbed through mouth tissues and swallowed.

The Environmental Working Group notes, for example, that the EPA allows up to 900 ppm fluoride in dried eggs. One-third of all eggs are dried and then added to a wide range of food products.

Therefore, the denominator used to calculate the SPAC would be more than 1.0. Assuming that the fluoride from other sources doubles the fluoride added to drinking water then the formula to apply would be:

$$\text{SPAC (mg/l)} = (\text{promulgated regulatory value (mg/l)} / \text{estimated number of drinking water sources}) \times 10\%.$$

Filling in the numbers we have $4.0 \text{ ppm} / 2 \times 10\% = .2 \text{ ppm}$. Using the NSF 60 formula, the maximum fluoride that could be added would be .2 ppm. Again, the current .7 ppm fluoridation level violates the NSF 60 maximum.

3) The 4.0 ppm MCL is much too high. The NRC in its 2006 report stated clearly that the 4.0 ppm level was not protective and should be lowered. For this reason, fluoridation at .7 ppm is even more likely to fail the risk estimation test. Fluoride is of roughly the same toxicity as lead and arsenic, and the MCLs for them are 15 ppb and 10 ppb. The 4.0 ppm level was picked out of the air. There is no scientific explanation whatsoever for why this level of fluoride poisoning was set. According to one report South Carolina had drinking water which contained naturally occurring fluoride at slightly under 4.0 ppm, and

authorities there did not want to have to install expensive de-fluoridation equipment. So the MCL was set at 4.0 ppm.

4) Likewise, the 10% multiplier used in the NSF risk estimation test was picked out of the air. There is no scientific basis for presuming that adding a toxin at an arbitrary 10% of an arbitrary 4.0 ppm MCL is harmless.

5) The current text of A.2.3 includes a blanket waiver for doing toxicological studies for all additives or contaminants for which there is an EPA MCL. However, in the original 1988 edition of NSF 60 there was no such blanket waiver. It was in 1988 that the EPA was putting NSF into the fluoride certifying business. The original 1988 version of Section A.3.2 says:

APPENDIX A **TOXICOLOGY REVIEW AND EVALUATION PROCEDURES**

GENERAL: These product review and test guidelines are to assist in establishing the toxicity, if any, of the products under anticipated use conditions. **Prior to initiating new toxicity testing, the applicant is strongly encouraged to discuss information requirements and test protocols with the certifying agency. If an EPA Maximum Contaminant Level (MCL) is available, no new toxicity testing and evaluation (Sections 2.0.6 and 2.0.7) may be necessary, but a risk estimate (Maximum Allowable Level or MAL) must be calculated** per Appendix A, Section 3.0.

The current NSF 60 version, at least going back to the 2009 version (the next oldest one I have been able to find), says “**no additional collection of toxicological data shall be required ...**”. The NSF 60 1988 version says “**no new toxicity testing and evaluation may be necessary**”.

The wording was changed at some point between the 1988 and 2009. There were NFS 60 versions published in the following years: 1996, 1997, 1999, 2000, 2001, 2002, 2003, 2004, 2005. I am searching for other versions, and I will send them to you if and when I locate them. The question is relevant, because when the date when NSF 60 was changed is compared to the date – 2000 – when Washington adopted its current version of WAC 246-290-220, it would indicate whether there was a time when Washington law was being violated.

See the NSF 60 1988 version at this link.

See the NSF 60 2009 version at this link.

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See the [NSF 60 2013 version](#) at this link.

The difference between “no new toxicity testing and evaluation **may be necessary**” and “no additional collection of toxicological data **shall be required** ...” is clear. Under the original version reliance on the [EPA MCL](#) to avoid toxicological testing was not automatic. It was a matter of good judgment. In the revised version of NSF 60 toxicological inquiry stops automatically if there is an [EPA MCL](#).

The NSF 60 1988 version was in effect at least until 1996. It is not clear whether it was changed in 1996, 1997, 1999, 2000, 2001, 2002, 2003, 2004, or 2005.

Regarding [WAC 246-290-220](#) there is a [2000 version](#) which differs slightly from the current version. The 2000 version says “shall comply” instead of “must comply”. It was authorized in [WSR-99-07-021-1999](#) and says:

Any treatment chemicals ... added to water intended for potable use **shall comply** with ANSI/NSF Standard 60. The maximum application dosage recommendation for the product certified by the ANSI/NSF standard 60 shall not be exceeded in practice.

Regarding [WAC 246-290-220](#) the current version dates back to 2003. It says “must comply” instead of “shall comply”:

Any treatment chemicals ... added to water intended for potable use **must comply** with ANSI/NSF Standard 60. The maximum application dosage recommendation for the product certified by the ANSI/NSF standard 60 shall not be exceeded in practice.

The change from “shall” to “must” appears minor, however, it indicates that in changing [WAC 246-290-220](#), the Board of Health was trying to make the waiver of toxicological studies more automatic and unconditional, and in effect never to be done for any additive or contaminant for which there was an [EPA MCL](#).

It makes no sense for NSF 60 to say that 20 toxicological studies must be done but then to include a sentence which says they will, in effect, always be waived.

If the 1988 wording in NSF 60 was changed – “may” to “shall” – after the original version of [WAC 246-290-220](#) was issued in 2000, there was a period during which there was no supposedly automatic waiver of the toxicological

tests, meaning the toxicological studies should have been done and NSF 60 was being violated between 1988 and 2000.

6) The 2009 version omits the previous sentence from the 1988 version:

“Prior to initiating new toxicity testing, the applicant is strongly encouraged to discuss information requirements and test protocols with the certifying agency.”

Why would NSF want to eliminate this sentence? First, NSF apparently preferred not to have to discuss requirements and protocols with other government agencies and apparently wanted to be able to approve fluoridation without any interference. Second, the reference to the “certifying agency” probably implies that the original pre-1988 plan was to have NSF make its proposed approval and then have a “certifying agency” validate it. The certifying agency was to have the last word. This was apparently an attempt at semi-privatization of fluoridation regulation. Privatization was popular during the Reagan-Bush years. By 2009 NSF realized the incriminating nature of this sentence and simply eliminated it.

This raises another question: Which agency would have been the “certifying agency”? FDA, EPA? CDC? The Washington Board of Health? The Lynnwood water district?

7) The practical effect of the “no additional collection of toxicological data shall be required” language is that toxicological studies will never be done on any contaminant in the list found on the [EPA MCL and MCLG web page](#). To list some 20 toxicological studies and then negate doing any of them should not have been the intent of the [FDA in 1979 when allegedly it was allegedly ceding authority over fluoridation to the EPA](#). It should not have been the intent of the EPA in 1978 when it was creating its [EPA MCL and MCLG list](#) and in 1988 when it was setting up NSF in the fluoride certification business. For that reason the “no additional collection of toxicological data shall be required” language is void and should be disregarded.

8) [NSF’s 2008 Fluoride Fact Sheet](#) says:

Standard 60 was developed to establish minimum requirements for the control of **potential adverse human health effects** from products added directly to water during its treatment, storage and distribution. The standard requires a **full formulation disclosure of each chemical ingredient** in a product. It also requires a **toxicology review** to determine that the **product is safe at its maximum use level** and to

evaluate potential contaminants in the product. The standard requires **testing of the treatment chemical products**, typically by dosing these in water at 10 times the maximum use level, so that trace levels of contaminants can be detected. A **toxicology evaluation of test results** is required to determine if any contaminant concentrations have the **potential to cause adverse human health effects**. ... NSF also developed a **testing and certification program** for these products, so that individual U.S. states and waterworks facilities would have a mechanism to determine which products were appropriate for use. The certification program requires **annual unannounced inspections** of production and distribution facilities to ensure that the products are properly formulated, packaged, and transported with **safe guards against potential contamination**. NSF also requires **annual testing and toxicological evaluation** of each NSF Certified product. NSF Certified products have the **NSF Mark**, the maximum use level, lot number or date code and production location on the product packaging or documentation shipped with the product. The use of this standard and the associated certification program have yielded benefits in **ensuring that drinking water additives meet the health objectives** that provide the basis for **public health protection**. ... The NSF **toxicology review** for a chemical product **considers all chemical ingredients** in the product as well as the manufacturing process, processing aids, and other factors that have an impact on the contaminants present in the finished drinking water. This formulation review **identifies all the contaminants** that need to be analyzed in testing the product. For example, fluosilicic acid is produced by adding sulfuric acid to phosphate ore. This is typically done during the production of phosphate additives for agricultural fertilizers. The manufacturing process is **documented by an NSF inspector** at an initial audit of the manufacturing site and during each annual unannounced inspection of the facility. The manufacturing process, ingredients, and potential contaminants are **reviewed annually by NSF toxicologists**, and the product is tested for any potential contaminants. A minimum **test battery for all fluoridation products** includes metals of toxicological concern and radionuclides.

The NSF's 2012 Fluoride Fact Sheet says almost the same thing, but it removes all references to "toxicological" except for one.

NSF in another document on its web site represents that it has **two toxicologists on staff**.

Washington State Department of Health
Attention: Theresa Phillips
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The “no additional collection of toxicological data shall be required” language is hidden in a book which costs \$325 and which is hard to locate in libraries. The representations in NSF Fact Sheets make no mention of this language. There is a rule in contract and warranty law: The fine print cannot un-warrant what the large print warrants. The large and public print says there will be toxicological studies, testing, and safety of the product. Again, the “no additional collection of toxicological data shall be required” language is invalid.

9) Section A.2.3 wrongly interprets the EPA’s National Primary Drinking Water Regulations and the EPA’s MCL for fluoride, which is 4.00 ppm.

Many think that because the SDWA [Safe Drinking Water Act] has a 4 ppm maximum contaminant level (MCL) for fluoride, that the SDWA authorizes the insertion of fluoride up to a 4 ppm maximum. This is not so. The SDWA requires removal of fluoride if it exceeds 4 ppm. It does not authorize adding fluoride up to the 4 ppm level or adding any fluoride at all.

The 4.0 ppm MCL is a requirement that if the naturally occurring level of fluoride or pollution caused level of fluoride exceeds 4.0 ppm MCL action level, the water district must remove the fluoride or prevent it from being added to water. There is a secondary MCL of 2.0 ppm, and if fluoride in drinking water exceeds that level, the utility must give notice to water users of the risk of fluorosis.

You do not have to take my word as to whether this is the correct interpretation of the EPA MCLs. Take a look at what the National Research Council says at NRC 2006, Page 1:

“In 1986, EPA established an MCLG [maximum contaminant level goal] and MCL [maximum contaminant level] for fluoride at a concentration of 4 milligrams per liter (mg/L) and an SMCL [special contaminant level] of 2 mg/L. These guidelines are restrictions on the total amount of fluoride allowed in drinking water. ... **EPA’s drinking-water guidelines are not recommendations about adding fluoride to drinking water to protect the public from dental caries.** ... Instead, EPA’s guidelines are maximum allowable concentrations in drinking water intended to prevent toxic or other adverse effects that could result from exposure to fluoride.

Further, NRC 2006, Page 13, says:

It is important to make the distinction that EPA’s standards are guidelines for restricting the amount of naturally occurring fluoride in

drinking water; **they are not recommendations about the practice of adding fluoride to public drinking-water systems.**

This becomes more clear when you look at the list of contaminants regulated by EPA. Notice that the list includes biological contaminants such as cryptosporidium. This is clearly not an authorization to add cryptosporidium up to a certain level but a requirement to remove it if it is present or prohibit its addition to water.

Notice that the EPA list includes such man-made toxic waste chemicals such as atrazine. The MCL and MCLG for atrazine is .003 ppm or 3 ppb. This is clearly not an authorization to add atrazine up to 3 ppb but to require its removal from water if it exceeds that level or to prohibit its addition to water.

10) Arguably the type of fluoride referred to in the EPA MCL and MCLG list is “naturally occurring fluoride”, not man-made fluorosilicic acid intentionally added. This is what the National Research Council said, as noted above. See NRC 2006, Page 13:

It is important to make the distinction that EPA’s standards are guidelines for restricting the amount of **naturally occurring fluoride** in drinking water....

There is a big difference between naturally occurring calcium fluoride and the man-made forms. Calcium fluoride is the naturally occurring fluoride found most frequently. Calcium binds to fluoride and reduces its reactivity. Calcium fluoride is not as immediately poisonous as is fluorosilicic acid. The LD 50 for calcium fluoride is 3,750 mg/kg; for fluorosilicic acid it is 125 mg/kg.

For a 70 kilogram or 154 pound person it would take a quarter kilogram of calcium fluoride to kill 50 percent of us – while making the rest very ill. For fluorosilicic acid the LD50 for a 70 kilogram person would be only 8.7 grams, the weight of around eight 1.25” paper clips. Also, calcium fluoride does not leach lead from plumbing, whereas fluorosilicic acid does.

Others argue that the term “fluoride” in the EPA MCL and MCLG list includes all kinds of fluoride. Calcium fluoride, aluminum fluoride cryolite, and magnesium fluoride are also naturally occurring. The same EPA MCL list includes arsenic, barium, beryllium, and cadmium, and there are many forms in which all of these can exist. This would imply that any form of fluoride would be covered. However, this does not change the outcome. It is still true that EPA MCLs do not authorize the addition of any of the listed additives to

drinking water, only the removal of them if they exceed the MCL action level or the prevention of them from flowing into water.

11) Section A.3.2 is poorly worded, even nonsensical. A.3.2 says:

“If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18) no additional collection of toxicological data shall be required prior to performance of the risk estimation.”

What the amateurs who wrote A.3.2 were trying to say is:

“If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18), and if the MCL does not exceed 10% of the MCL set by the USEPA, no additional collection of toxicological data shall be required

Again, this paragraph is nonsensical, and therefore the change away from the 1988 version should be disregarded. Or the entirety of A.3.2 should be disregarded. If either is done, we return to the same conclusion: The toxicological studies must be done.

12) Compliance with A.2.3 is not enough for fluoridation materials to “comply with” NSF 60. The supplier of fluoridation materials and NSF must also “comply with” NSF 60-2013 section 3.2.1, which says:

3.2.1 The manufacturer shall submit, at a minimum, the following information for each product:

- a proposed maximum use level for the product, which is consistent with the requirements of Annex A;
- complete formulation information, which includes the following:
 - the composition of the formulation (in percent or parts by weight for each chemical in the formulation);
 - the reaction mixture used to manufacture the chemical, if applicable;

- chemical abstract number (CAS number), chemical name, and supplier for each chemical present in the formulation;
- a list of known or suspected impurities within the treatment chemical formulation and the maximum percent or parts by weight of each impurity; and
- the source and type of water used in the manufacture of the treatment chemical as well as any available documentation regarding quality monitoring of such water source, if applicable;
- a description or classification of the process in which the treatment chemical is manufactured, handled, and packaged;
- selected spectra (e.g. UV/visible, infrared) shall be required for some additive products or their principle constituents; and
- **when required by Annex A a list of published and unpublished toxicological studies relevant to the treatment chemical and the chemicals and impurities present in the treatment chemical.**

The most interesting of these is the last one, which says the supplier must supply:

a list of published and unpublished toxicological studies relevant to the treatment chemical and the chemicals and impurities present in the treatment chemical.

That would include the fluoride itself and the other contaminants that come along with it.

The toxicological studies must be “relevant”, and they must be real toxicological studies. Both published and unpublished studies must be submitted. The requirement that unpublished studies be submitted would imply that the supplier is required to commission studies.

If they were complying with NSF 60, suppliers should have submitted all these documents to NSF when they applied for NSF certification of their so-called fluoride. And NSF should have received these documents. So both the suppliers and NSF should have these documents.

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If the documents from the suppliers are not in good order or were never submitted (which is almost certainly the case), then the fluoridation materials we use to pollute our drinking water would not “comply with” NSF 60. It is the duty of the Board of Health to demand that Simplot and NSF turn over these documents and to confirm or deny that they exist. For the Board to do otherwise would imply that they do not want to know whether our fluoridation materials “comply with” NSF 60. It would be to allow a fraud to be perpetuated and a violation of federal and state consumer protection law.

ARSENIC FAILS RISK ESTIMATION TEST

NSF 60 does not apply only to fluoride. It applies to other contaminants that come with fluorosilicic acid, such as arsenic.

NSF admits that around 43% of all fluorosilicic acid batches contain some arsenic and that the maximum amount of arsenic added to water by fluoridation materials and which was fluoridated at 1.0 ppm was 1.66 ppb as documented by NSF in 2000.

With water now fluoridated at .7 ppm instead of 1.0 ppm, the effective level of arsenic added by the fluoridation materials would be $1.66 \text{ ppb} \times .7 = 1.16 \text{ ppb}$, which is still more than 10% of the 10 ppb MCL. Arsenic from fluorosilicic acid added to water at .7 ppm fails the risk estimation test.

Arsenic is a confirmed type 1A human carcinogen. A type 1A human carcinogen is one which has been confirmed to be cause cancer in humans. Arsenic can cause skin, liver, lung, kidney, and bladder cancer. Arsenic disrupts the cellular process that produces ATP, the molecule in charge of transporting energy throughout your body's cells so they can perform the tasks that keep you alive. Arsenic both blocks and competes with the chemicals that form ATP, leaving the body short of what it takes to keep up even the most basic cellular processes. A peer reviewed 1992 article in Environmental Health Perspectives says that consuming 50 ppb arsenic per liter of water daily (1992 MCL) can be expected to cause cancer in 13 of 1,000 people. See:

Small amounts of arsenic become trapped permanently under skin and can eventually lead to skin cancer decades later. This is described in the Agency for Toxic Substances and Disease Registry on arsenic.

The snow melt drinking water of western Washington is lower in naturally occurring arsenic than is ground water used elsewhere. But that does not mean we should feel free to add so-called fluoride which is laden with arsenic to our drinking water and then drink it from conception to death.

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In 2001 the EPA lowered the MCL for arsenic from 50 ppb to its current level of 10 ppb.

The National Resources Defense Council position is that the 10 ppb MCL should be even lower:

“Given the risk estimates for all internal cancers provided in the NAS’s 1999 report, the current EPA MCL for arsenic must be revised downward to no higher than a value at the Practical Quantitation Level (PQL) of 3 ppb.”

Highly specialized machines can measure arsenic levels even below 1 ppb.

A water district must remove arsenic if it exceeds the 10 ppb MCL action level. The MCLG, maximum contaminant level goal for arsenic, is zero. If your goal is zero, you do not get closer to that goal by adding any amount of arsenic.

With water now fluoridated at .7 ppm instead of 1.0 ppm, the effective level of arsenic added by the fluoridation materials would be $1.66 \text{ ppb} \times .7 = 1.16 \text{ ppb}$, which is still more than 10% of the 10 ppb MCL. Arsenic from fluorosilicic acid added to water at .7 ppm fails the risk estimation test. Because the “no additional collection of toxicological data shall be required” language is void, toxicological studies must be done. The Washington Board of Health should demand to see them.

Further, bear in mind that as with fluoride, the EPA MCL is not an authorization to add any amount of arsenic, only to remove arsenic if it exceeds the MCL action level or to prevent its addition to water if the amount added from pollution exceeds that action level. Fluoridation adds arsenic to our drinking water and should therefore cease.

Further, bear in mind that as with fluoride, if there are sources of arsenic ingestion other than from drinking water, the denominator in the NSF formula should be raised from 1.0 to a higher number, which would lower the SPAC and make it less likely that arsenic would pass the risk estimation test.

Fluoridation defenders might say that 1.66 ppb or 1.16 ppb is a small amount of arsenic and that it can be disregarded. But where is the science that says that a small amount of arsenic consumed daily for life from conception to death is harmless? Where is the science which says that the combined effect of arsenic and the many other contaminants in our so-called fluoride? There is no such science. One-third of us will contract cancer, and one-fourth of us will die

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of cancer, so we should be cautious and not reckless when dealing with a known type 1A human carcinogen. Fluoridation is reckless if for no other reason than that fluorosilicic acid comes with arsenic.

The 2014 Seattle water quality report does not even mention arsenic, implying there is none present in water fluoridated at .8 ppm fluoride. This would mean there was no arsenic in the fluorosilicic acid.

However, Simplot's Certificates of Analysis say fluorosilicic acid delivered to Seattle contains arsenic present at 10.47 ppm undiluted in the tanker truck.

The 2012 NSF Fact Sheet on Fluoridation says arsenic is present in 43% of tanker loads tested.

Likewise, the 2012 Everett water quality report does not even mention arsenic, implying that none is present in water fluoridated at .7 ppm fluoride.

However, Simplot's Certificates of Analysis says that arsenic is delivered to Everett Utilities in the fluorosilicic acid at 11.16 ppm.

And according to the Lynnwood water quality report, the average arsenic level is .2 ppb and "arsenic [is] monitored at the treatment plant effluent". The Lynnwood report says that its water comes from Everett.

Someone in the Seattle and Everett utility departments appears to have "cooked the books". The Board of Health should look into these discrepancies.

FLUORIDATION MATERIALS CONTAIN LEAD AND LEACH LEAD

Fluorosilicic acid is contaminated with lead. I rely on NSF's own reports to prove that, plus Simplot's Certificates of Analysis and Seattle and Everett reports.

Fluorosilicic acid is diluted down 230,000 times to get it from 23% fluorosilicic acid in the tanker truck down to 1 ppm fluoride ion, NSF admits that the amount which fluorosilicic acid adds to drinking water is 1.1 ppb in a 2000 NSF report and at .6 ppb in 2008 and 2012 NSF Fluoride Fact Sheets.

For a full discussion of the lead and fluoridation issue see my 2011 lead letter to HHS and EPA.

Lead permeates all cells in the body, reduces IQ, shortens life span, exacerbates kidney disease, and worsens high blood pressure. It causes

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anemia, worsens osteoporosis, disrupts thyroid function, alters immune function, and affects brain function. See [ATSDR report starting at page 22](#). See a [National Center for Biotechnology Information](#) report on lead toxicity. See a report on [lead and high blood pressure](#). See a report on lead and [IQ in children](#).

The EPA MCL for lead is 15 ppb.

However, the MCLG, maximum contaminant level lead, is zero. If your goal is zero, you do not get closer to that goal by adding any amount of lead. In effect, the MCLG of zero prohibits fluoridation because the fluoridation materials contain arsenic.

Now that the level of added fluoride has been lowered from 1.0 to .7 ppm, fluorosilicic acid is being diluted 328,000 times instead of 230,000 times to reduce the fluorosilicic acid concentration to .7 ppm instead of 1.0 ppm. The amount of lead being contributed along with the so-called fluoride we drink at .7 ppm would be 70% of 1.1 ppb or .77 ppb. A mechanical application of the “no additional collection of toxicological data shall be required” language in the current version of NSF 60 would say that arsenic passes the risk estimation test when water is fluoridated at .7 ppm – because .77 ppb is under 10% of the 15 ppb MCLG. Likewise, toxicological studies would not be required simply because there is an MCL for lead.

However, the “no additional collection of toxicological data shall be required” language is void for reasons discussed above in the context of fluoride.

And as with fluoride, the existence of a 15 ppb MCL for lead is not an authorization to add any amount of lead, only to remove lead if it exceeds the MCL action level or to prevent the addition of lead to water if the amount added from pollution exceeds that action level.

Further, there are other sources of lead in the environment, and this changes the calculation under the risk estimation test. There is lead paint in older homes. There is lead in old service lines running out to the street, in brass faucets up to 8.0%, in copper-lead solder, in soil as a result of burning gasoline containing tetraethyl lead from the 1920s into the 1980s, and from piston engine aircraft which still burn leaded avgas. Therefore, the denominator in the NSF formula should be raised from 1.0 to a higher number, which would lower the level at which lead passes the risk estimation test. And of course, toxicological studies should be required because the “no additional collection of toxicological data shall be required” language is void.