



Safe Drinking Water Protection By-law - Important Supplemental Information

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Dear Board of Health members, Board of Selectmen members, and Finance Committee members,

In advance of presenting to you at upcoming meetings, I am writing to provide you with context around the proposed Safe Drinking Water Protection By-law and hope you find the information helpful in making any determinations related to recommending, not recommending, or abstaining from making a recommendation on the proposed by-law. The overall intent of the by-law is to give the freedom of choice and right to informed consent back to the individual citizen.

Here is a summary of the 5 major points in support of passing this proposed by-law. More detailed information with references is presented for each of these points in the more detailed sections below the summary section.

Summary:

1. Freedom over what is done to our body is the most basic human freedom

- Is Fluoride safe & effective? Actually, answering that question is not even the point of the matter. The question is not 'whether or not we should be adding fluoride to the drinking water', but rather the question is 'who should make that decision'. The intent of the by-law is to restore the decision making to the individual and close the 'loophole' whereby an individual's right to informed consent is taken away when a town board makes that decision instead.

2. Massachusetts Department of Environmental Protection (DEP) references a publication that identifies Fluoride as a Development Neurotoxin alongside Manganese

- If the town is spending \$14.5 million dollars to build a biological manganese filtration plant to remove one developmental neurotoxin (manganese) from the water supply, why would the town ever want to add in another developmental neurotoxin (fluoride) into the water supply? For all the neurological and behavioral reasons given to remove Manganese, these same reasons would apply to why we wouldn't want to add fluoride to the drinking water. When age-specific drinking water intake rates are used to calculate dosage, formula-fed infants receive the highest doseage of fluoride from drinking water compared to all other age groups. This illustrates the concern for greater potential for adverse health effects among infants. Therefore, as a precaution, it is prudent to limit exposure to higher levels of fluoride in water so that sensitive populations (i.e., infants/young children) are best protected.

3. Massachusetts Department of Environmental Protection (DEP) references Fluoride as a Toxic Chemical

- Is fluoride good for my teeth? Again, this is only part of the story. The other part of that question is 'and at what cost to my general health'? While fluoride is usually portrayed as 'safe and effective', it is important to note that fluoride is a hazardous and toxic chemical. The Massachusetts DEP, Clean Water Act, and Clean Air Act all list fluoride as a hazardous and/or toxic substance; therefore, there are adverse health effects attributed to fluoride which should not be discounted. It is important to respect an individual's right to informed consent given the risks associated with consuming a toxic and hazardous chemical with potential adverse health effects.

4. The American Thyroid Association references a publication that raises concerns about a higher risk of developing hypothyroidism for those people residing in regions with drinking-water fluoridation

- Can everyone drink fluoridated drinking water? The answer to that question is NO. The 2006 National Research Council of the Academy of Sciences report on Fluoride in Drinking Water designated kidney patients, diabetics, seniors and babies as 'susceptible sub-populations' that are especially vulnerable to harm from ingested fluorides. Also, according to the NRC report, there is substantial evidence that fluoride exposure can impact thyroid function in some individuals. The American Thyroid Association published the latest research showing a relationship between artificial water fluoridation and an increased risk of

developing hypothyroidism than those living in regions without drinking-water fluoridation. It is important to respect an individual's right to informed consent given the risks associated with these many concerns about the safety of community drinking-water fluoridation and how those risks affect one's own medical situation and health.

5. Cochrane Collaboration scientific review finds little recent or high-quality evidence that fluoridation reduces tooth decay

- Is fluoridation the best way to prevent tooth decay? While the CDC states that water fluoridation has been identified as the most cost-effective method of delivering fluoride to all, it is still up to the individual to weigh the benefits, risks, and costs associated with treatment options. As more and more recent scientific and medical research show that ingesting fluoride poses serious health risks, the risks side of the equation is getting bigger. Moreover, new scientific research is bringing into question the extent of the benefits of water fluoridation. While this new research has not reduced the confidence in water fluoridation by the CDC's Division of Oral Health, again, it is the right of the individual to make that final determination for oneself and not the government's. It is important to respect an individual's right to informed consent given the concerns about the actual benefits of community drinking-water fluoridation and how those benefits affect one's own medical situation and health.

Detailed Information:

1. Freedom over what is done to our body is the most basic human freedom

If the United States federal government, Massachusetts state government, and our very own doctors and dentists cannot require that we take a substance for health care preventive purposes, there would seem to be a 'loophole' at the town government level whereby the Shrewsbury Board of Health is able to take our most basic human freedom away from us as individuals and require us as citizens of Shrewsbury to take a substance for health care preventive purposes via the town water supply (aka artificial water fluoridation) without our informed consent. This proposed by-law is intended to close that 'loophole' at the local town level just as the Federal Safe Drinking Water Act did at the federal level. The only person who has the right to make the decision on whether or not to take a substance for health care preventive purposes is the individual them self. So only 3 individuals living in the town (Board of Health members) are making a decision that should be made individually by the 35,000 citizens living in the town; and therefore, the Board of Health is currently violating the right to informed consent for approximately 35,000 individuals.

I believe Article 6 of the Universal Declaration on Bioethics and Human Rights in the Constitution of the United Nations Educational, Scientific and Cultural Organization (UNESCO) says it best on how important an individual's informed consent is in preventive intervention.

http://portal.unesco.org/en/ev.php-URL_ID=31058&URL_DO=DO_TOPIC&URL_SECTION=201.html

"Article 6 – Consent

1. Any preventive, diagnostic and therapeutic medical intervention is only to be carried out with the prior, free and informed consent of the person concerned, based on adequate information. The consent should, where appropriate, be express and may be withdrawn by the person concerned at any time and for any reason without disadvantage or prejudice.

2. Scientific research should only be carried out with the prior, free, express and informed consent of the person concerned. The information should be adequate, provided in a comprehensible form and should include modalities for withdrawal of consent. Consent may be withdrawn by the person concerned at any time and for any reason without any disadvantage or prejudice. Exceptions to this principle should be made only in accordance with ethical and legal standards adopted by States, consistent with the principles and provisions set out in this Declaration, in particular in Article 27, and international human rights law.

3. In appropriate cases of research carried out on a group of persons or a community, additional agreement of the legal representatives of the group or community concerned may be sought. **In no case should a collective community agreement or the consent of a community leader or other authority substitute for an individual's informed consent."**

Notice how dentists are not able to require an individual patient to take a substance for health care preventative purposes as seen in their list of Patient Rights.

ADA Dental Patient Rights and Responsibilities Statement

http://www.ada.org/~media/ADA/About%20the%20ADA/Files/statements_ethics_patient_rights.pdf

"Patient Rights

...

9. You have a right to accept, defer or decline any part of your treatment recommendations."

Notice how doctors are not able to require an individual patient to take a substance for health care preventative purposes as seen in their list of

AMA Code of Medical Ethics

<http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics.page>

Chapter 2: Opinions on Consent, Communication & Decision Making

"2.1.1 Informed Consent

Informed consent to medical treatment is fundamental in both ethics and law. **Patients have the right to receive information and ask questions about recommended treatments so that they can make well-considered decisions about care.** Successful communication in the patient-physician relationship fosters trust and supports shared decision making.

The process of informed consent occurs when communication between a patient and physician results in the patient's authorization or agreement to undergo a specific medical intervention."

While the above focuses on the core purpose of the by-law, I am including some new additional information that may help provide context as to why citizens may not want to consume fluoride.

2. Massachusetts Department of Environmental Protection (DEP) references a publication that identifies Fluoride as a Development Neurotoxin alongside Manganese

For several years, the town of Shrewsbury has been having problems with elevated levels of Manganese in our drinking water and has been looking into options to remove Manganese from our water supply. The town of Shrewsbury has chosen the option of building a new \$14.5 million dollar biological manganese filtration plant to fully address the manganese situation. While discolored water is an issue, another main driver for removing manganese is due to its neurological and behavioral effects in especially younger children as a developmental neurotoxicant. I would like to praise Mr. Tozeski's statement whereby he called for taking action now to protect our residents and not wait for regulation change.

RE: Manganese Standards for Drinking Water, Letter from Robert Tozeski to Board of Selectmen June 20, 2014 p.2

<https://shrewsburyma.gov/documentcenter/view/770>

"With the strong push to tighten manganese limits and health risks being further identified as possible neurological and behavioral effects in especially younger children, I strongly recommend the time to take action is now to protect our residents from present and future health concerns and not wait for the regulation change."

If you read the Town of Shrewsbury's 'Information About Manganese in Shrewsbury' webpage, at the end of the page, it references the following link for more information on Manganese.

Mass DEP - Manganese in Drinking Water Information

<http://www.mass.gov/eea/agencies/massdep/water/drinking/manganese-in-drinking-water.html>

And on that Mass DEP page on Manganese, it provides a comprehensive list of research published concerning elevated levels of manganese in drinking water.

References Relating to Manganese in Drinking Water

<http://www.mass.gov/eea/docs/dep/water/drinking/alpha/i-thru-z/mangrefs.pdf>

"Provides a comprehensive list of research that has been published concerning elevated levels of manganese in drinking water. Updated October 2014."

The Second Reference on that page references Manganese as a developmental neurotoxicant (as I noted above was referenced as a reason for the new water plant)

Bibliography of Selected Manganese Publications Related to Drinking Water Exposures and Infants and Children, p.1

Grandjean, P. and P. J. Landrigan (2014). "Neurobehavioural effects of developmental toxicity." The Lancet Neurology 13(3): 330-338. <http://www.thelancet.com/journals/lanneur/issue/current?tab=past>

"Abstract: Neurodevelopmental disabilities, including autism, attention-deficit hyperactivity disorder, dyslexia, and other cognitive impairments, affect millions of children worldwide, and some diagnoses seem to be increasing in frequency. Industrial chemicals that injure the developing brain are among the known causes for this rise in prevalence. In 2006, we did a systematic review and identified five industrial chemicals as developmental neurotoxicants: lead, methylmercury, polychlorinated biphenyls, arsenic, and toluene. **Since 2006, epidemiological studies have documented six additional developmental neurotoxicants?manganese, fluoride,** chlorpyrifos, dichlorodiphenyltrichloroethane, tetrachloroethylene, and the polybrominated diphenyl ethers. We postulate that even more neurotoxicants remain undiscovered. To control the pandemic of developmental neurotoxicity, we propose a global prevention strategy. Untested chemicals should not be presumed to be safe to brain development, and chemicals in existing use and all new chemicals must therefore be tested for developmental neurotoxicity. To coordinate these efforts and to accelerate translation of science into prevention, we propose the urgent formation of a new international clearinghouse."

What you will notice is that fluoride is listed alongside manganese (and lead, mercury, and arsenic for that matter) as a developmental neurotoxicant in this document prepared by the Massachusetts Department of Environmental Protection's Office of Research and Standards. Therefore, as a precaution, it is prudent to limit exposure to high levels of fluoride in water so that sensitive populations (i.e., infants/young children) are best protected.

3. Massachusetts Department of Environmental Protection (DEP) references Fluoride as a Toxic Chemical

The Massachusetts Toxic Use Reduction Act (TURA) established a list of toxic or hazardous substances which includes Fluoride.

<http://www.mass.gov/eea/agencies/massdep/toxics/tur/>

Complete List of TURA Chemicals - March 2016

<http://www.mass.gov/eea/docs/dep/toxics/approvals/chemlist.pdf>

"TURA reporting and planning requirements apply to all toxic substances listed. Updated to include chemicals the U.S. Environmental Protection Agency (EPA) has added to the Toxics Release Inventory (TRI) for TURA and TRI reports due in July 2016 and a notice of new TURA high hazard chemicals for reports due in July 2017."

MA TOXICS USE REDUCTION ACT - CURRENT CHEMICAL LIST

<http://www.mass.gov/eea/docs/dep/toxics/approvals/chemlist.pdf>

- Hydrogen Fluoride
- Hydrogen Fluoride (anhydrous)
- Sodium Fluoride

Fluoride is listed on the TURA Toxic Chemical list because it is designated as a hazardous substance by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—

<https://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol28/pdf/CFR-2011-title40-vol28-sec302-4.pdf>

- Hydrogen Fluoride
- Hydrofluoric acid
- Sodium Fluoride

Fluoride is listed on the CERCLA's List of Hazardous Substances because the statutory source for designating Fluoride as a CERCLA hazardous substance is section 311(b)(2) of the Clean Water Act.

4. The American Thyroid Association references a publication that raises concerns about a higher risk of developing hypothyroidism for those people residing in regions with drinking-water fluoridation

Women are more likely than men to have thyroid disease. One in eight women will develop thyroid problems during her lifetime. This is a large population that may be concerned about consuming fluoridated drinking water.

The Department of Health & Human Services Office on Women's Health references the American Thyroid Association for more information on thyroid disease.

The American Thyroid Association publishes a journal that references the most up-to-date, cutting edge thyroid research and provides the latest information on thyroid research and treatment.

CLINICAL THYROIDOLOGY FOR THE PUBLIC, Volume 8, Issue 6, June 2015, 3

http://www.thyroid.org/wp-content/uploads/publications/ctfp/volume8/issue6/ct_public_v86_3.pdf

"WHAT ARE THE IMPLICATIONS OF THIS STUDY? These data suggest that **people residing in regions with drinking-water fluoridation have a higher risk of developing hypothyroidism** than those living in regions without drinking-water fluoridation. The authors feel that these results raise concerns about the safety of community drinking-water fluoridation. However, others are skeptical of this conclusion and highlight significant limitations in the methodology used in this study, as well as the fact that these results are not consistent with previously published literature. **Thus, more study is needed to determine if low levels of fluoride in drinking water can affect thyroid function.**"

5. Cochrane Collaboration scientific review finds little recent or high-quality evidence that fluoridation reduces tooth decay.

A month after I presented at the May 2015 Annual Town Meeting, the Cochrane Collaboration, which is considered to provide the gold standard in evidence based reviews of health science by doctors and researchers, found no reliable evidence that fluoridation prevents cavities.

FLUORIDATION MAY NOT PREVENT CAVITIES, SCIENTIFIC REVIEW SHOWS

<http://www.newsweek.com/fluoridation-may-not-prevent-cavities-huge-study-shows-348251>

"Frankly, this is pretty shocking," says Thomas Zoeller, a scientist at UMass-Amherst uninvolved in the work. "This study does not support the use of fluoride in drinking water."

Note; Professor Thomas Zoeller has received the UMass Amherst's Chancellor's Medal, the highest recognition bestowed to faculty by the campus.

Water fluoridation for the prevention of dental caries

<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD010856.pub2/abstract>

"Authors' conclusions

There is very little contemporary evidence, meeting the review's inclusion criteria, that has evaluated the effectiveness of water fluoridation for the prevention of caries."

Please feel free to contact me with any questions. I am happy to discuss any of this information with you in advance of the meetings as well.

Thank you,
Bryan Moss
Town Meeting Member, Precinct 8