

# Current Science on Fluoride Risk

9.22.2020

## Neurological Impairment:

### **Fluoride exposure from infant formula and child IQ in a Canadian birth cohort. Environment International. 2020**

Till C, Green R, Flora D, Hornung R, Martinez-Miller EA, Blazer M, Farmus L, Ayotte P, Muckle G, Lanphear B.

<https://www.sciencedirect.com/science/article/pii/S0160412019326145>

Canadian Babies: Canadian bottle-fed babies have lower IQ in optimally fluoridated communities while breast fed babies have extremely low F and significantly higher IQ. MIREC.

### **Chronic Fluoride Exposure and the Risk of Autism Spectrum Disorder Int. J. Environ. Res. Public Health 2019, 16(18), 3431 • Strunecka A, Strunecky O.**

<https://www.mdpi.com/1660-4601/16/18/3431/htm>

Increased exposure to fluoride is associated with higher incidence of ASD in regions with fluoridated water or endemic fluorosis. Based on biological plausibility and incidence, authors hypothesize that increased fluoride exposure is an environmental risk factor for autism.

### **Association Between Maternal Fluoride Exposure During Pregnancy and IQ Scores in Offspring in Canada. JAMA Pediatrics. 2019 • Green R, Lanphear B, Hornung R, et al. (2019)**

<https://jamanetwork.com/journals/jamapediatrics/fullarticle/2748634>

Three measurements in high quality NIH sponsored prospective cohort study (MIREC) found significantly lowered IQ in offspring of mostly white, well-educated Canadian women living in 'optimally' fluoridated communities.

### **Prenatal fluoride exposure and attention deficit hyperactivity disorder (ADHD) symptoms in children at 6– 12 years of age in Mexico City. Environment International. Volume 121, Part 1, December 2018, Pages 658-666• Morteza Bashash,**

Maëlle Marchand, Howard Hu, Christine Till, Angeles Martinez-Mier, Brisa N. Sanchez, Niladri Basu, Karen Peterson, Rivka Green, Lourdes Schnaas, Adriana Mercado-García, Mauricio Hernández-Avila, Martha María Téllez-Rojo..

<https://www.sciencedirect.com/science/article/pii/S0160412018311814>

Over 200 children were individually tested. Study found attention deficit disorder apparently caused by their prenatal exposure to fluoride specific to dose. This is the 3rd report out of the NIH sponsored 12 year ELEMENT project that has confirmed low dose prenatal exposure to fluoride consistent with exposure in 'optimally' fluoridated communities causes subtle but permanent brain damage for many consumers. Excluded those with history of mental illness or conditions such as diabetes and renal disease.

## KIDNEY & LIVER:

### **Fluoride exposure and kidney and liver function among adolescents in the United States: NHANES, 2013–2016.**

**Environment International. August 8, 2019 [online ahead of print]. • Malin AJ, Lesueur C, Busgang SA, Curtin P, Wright RO, Sanders AP.**

<https://www.sciencedirect.com/science/article/pii/S0160412019309274>

Researchers at Mt. Sinai Medical School find American teens in optimally fluoridated American towns have markers for altered kidney & liver parameters that puts them at higher risk for kidney & liver disease as adults.

## IODINE:

**Fluoride Exposure Induces Inhibition of Sodium/Iodide Symporter (NIS) Contributing to Impaired Iodine Absorption and Iodine Deficiency: Molecular Mechanisms of Inhibition and Implications for Public Health.** *Int. J. Environ. Res. Public Health* 2019, 16. • Waugh DT

<https://www.mdpi.com/1660-4601/16/6/1086>

Identifies and discusses the biochemical and hormonal impact of fluoride and fluoridation policy on iodine metabolism with consideration of related neurodevelopmental and pathological disorders

## THYROID:

**Fluoride exposure and thyroid function among adults living in Canada: Effect modification by iodine status.**

*Environment International*. Volume 121, Part 1, December 2018, Pages 667-674. Ashley J. Malin, Julia Riddell, Hugh McCague, Christine Till. <https://www.sciencedirect.com/science/article/pii/S016041201830833X>

18% of people drinking 'optimally' fluoridated water in Canadian communities have a heightened risk of low thyroid function because fluoride interferes with iodine metabolism. Many of them will be sub-clinical and not know they are mildly hypothyroid, which nevertheless increases their risk for diabetes, high cholesterol, and other problems. Study excluded those already diagnosed with thyroid disease. (CHMS)

**Impact of Drinking Water Fluoride on Human Thyroid Hormones: A Case-Control Study.** *Scientific Reports*. volume 8. • Z. Kheradpisheh et al. (2018)

<https://www.NCBI.nlm.nih.gov/pmc/articles/PMC5805681/>

Even 0.5 ppm fluoride in water has an adverse impact on thyroid hormones.

## GENERAL:

**A new perspective on metals and other contaminants in fluoridation chemicals** *Int J Occup Environ Health*. 2014 Apr; 20(2): 157–166. Phyllis J Mullenix (2014)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4090869/>

Results show that metal content varies with batch, and all HFS samples contained arsenic (4.9–56.0 ppm) or arsenic in addition to lead (10.3 ppm). Two NaF samples contained barium (13.3–18.0 ppm) instead. All HFS (212–415 ppm) and NaF (3312–3630 ppm) additives contained a surprising amount of aluminum.

**Controversy: The evolving science of fluoride: when new evidence doesn't conform with existing beliefs** *Pediatric Research* (2020) Christine Till and Rivka Green

<https://www.nature.com/articles/s41390-020-0973-8>

A perspective on how to resolve the existing conflicts of opinions on the safety of water fluoridation when biases dominate new research.

**Water fluoridation: When current research contradicts public practices** *Public Health Nurs.* (2020) 37:475–477 Azita Amiri

<https://onlinelibrary.wiley.com/doi/full/10.1111/phn.12758>

An editorial discussing the challenges of reconciling conflicting attitudes on the safety of water fluoridation.

**International Academy of Oral Medicine and Toxicology (IAOMT) Position Paper against Fluoride Use in Water, Dental Materials, and Other Products for Dental and Medical Practitioners, Dental and Medical Students, Consumers, and Policy Makers** (2017) <https://files.iaomt.org/wp-content/uploads/IAOMT-Fluoride-Position-Paper.pdf>