

## Fluoride: The Thirst Mutilator

What do we know about Fluoride? Well, we know it's got what plants crave. It's got electrolytes. Wait that's Brawndo The Thirst Mutilator, from that movie where a former entertainment star holds the title of President of the United States, *Idiocracy* (2006). What's Fluoride again? Ah here's my script.

Beck (MD, PhD) and H.S. Micklem's (DPhil) very readable *The Case Against Fluoride* cleared up the mystery around water fluoridation for me in what felt like 100 pages. The facts below are taken straight from the book, intended to help you reach your own informed position on Fluoride in the water. This information will primarily focus on the public health implications of the issue, the scientific facts. For more information about the politics behind water fluoridation, I'd point you to the book. The short answer is: corruption and greed along with bureaucratic incompetence, plus an unwillingness to admit wrongdoing, in foolish pride as well as in fear of a towering wave of potential legal repercussion.

- The way fluoride benefits teeth is topical (via direct exposure) rather than systemic (from within the body)<sup>1</sup> (and 10 more) Drinking fluoridated water does little to nothing for dental health.
- Fluoride as a drug has not been approved by the FDA.
- There are no controlled double-blind trials that prove fluoridation benefits dental health. When controlling for age, income, and length of exposure to fluoride, there are little to no population-based data either.
- Over 99% of fluoridated water won't hit the population's teeth at all (think dishwashing, bathing, doing laundry...)
- In over 90% of fluoridated water in the U.S., the fluoride used is not pharmaceutical grade as in dental products, but rather comes as *hexafluorosilicic acid*, a waste product of the phosphate fertilizer industry. This chemical comes contaminated with arsenic, a known carcinogen<sup>2</sup>. Plus, water treated with silicofluorides is shown to elevate levels of blood lead<sup>3</sup>, which can damage developing brains.
- There is "a positive association between fluoride exposure and lowered IQ in children," demonstrated by at least twenty-four studies (150). Animal studies tell the same story, with higher fluoride levels impeding memory and learning.
- Fluoride exposure may increase risk of Alzheimer's disease, according to studies with rats<sup>4</sup>.
- Bottle-fed babies are exposed to fluoride at levels 25 to 250 times higher than in mother's milk<sup>5</sup>.
- There are many well-documented cases of fluoride poisoning due to fluoride at tap-water levels, the sickness rapidly reversed by the removal of fluoride from the patient's diet, and reappearing with the re-addition of fluoride<sup>6-7</sup>. This fluoride sensitivity may affect as many as 1 in 100 Americans subject to fluoridation. These fluoride-sensitive individuals could be around ten times more vulnerable than average to fluoride's probable harms (10).

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<sup>1</sup> O. Fejerskov, A. Thylstrup, and M.J. Larsen, "Rational Use of Fluorides in Caries Prevention: A Concept Based on Possible Cariostatic Mechanisms," *Acta Odontologica Scandinavica* 39, no. 4 (1981): 241-49.

<sup>2</sup> C. Wang, D.B. Smith, and G.M. Huntley, "Treatment Chemicals Contribute to Arsenic Levels," *Opflow* (a journal of the American Water Works Association), October 2000.

<sup>3</sup>R.D. Masters and M.J. Coplan, B.T. Hone, and J.E. Dykes, "Association of Silicofluoride Treated Water with Elevated Blood Lead," *Neurotoxicology* 21, no. 6 (2000): 1091-99.

<sup>4</sup> J.A. Varner, K.F. Jensen, W. Horvath, and R.L. Issacson, "Chronic Administration of Aluminum-Fluoride and Sodium-Fluoride to Rats in Drinking Water: Alterations in Neuronal and Cerebrovascular Integrity," *Brain Research* 784, no. 1-2 (1998): 284-98. Extended excerpts at <http://www.fluoride-journal.com/98-31-2/31291-95.htm>

<sup>5</sup> When given formula made from tap water

<sup>6</sup> H.T. Petrabor, "Chronic Fluoride Intoxication from Drinking Water (Preliminary Report)," *Fluoride* 7, no. 1 (1974): 47-52

<sup>7</sup> J.J. Shea, S.M. Gillespie, and G.L. Waldbott, "Allergy to Fluoride," *Annals of Allergy* 25 (2967): (165-169)

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- According to the National Research Council's 2006 report, fluoride itself may be carcinogenic.
- Fluoride appears to reduce thyroid function<sup>8</sup> (plus 9 more).
- Fluoride calcifies the pineal gland, though the effects of this are still largely up for debate (165).
- Fluoride in excess doses causes bone defects which increase the rate of bone fractures, particularly hip fractures<sup>9</sup>. It also causes (among other similar diseases) skeletal fluorosis, a condition with symptoms similar to arthritis<sup>10</sup>(plus 5).
- Fluoridation may cause osteosarcoma<sup>11</sup>, a condition which causes localized bone pain and swelling, and may need to be treated with radiation.
- Fluoride exposure over time, even at low levels, can cause kidney damage<sup>12</sup> as well as damage to the reproductive<sup>13</sup>, hepatic (liver), and immune systems<sup>14</sup>.
- Fluoride lowers melatonin levels and hastens the onset of puberty<sup>15</sup>.
- Fluoride causes dental fluorosis (spotting and discoloring of enamel) in children<sup>16</sup>. While fluorosis seems purely visual, the process of change is likely *systemic*, altering body chemistry in unintended and unknown ways (113). Fluorosis also damages children's self-esteem<sup>17</sup>.
- Fluoride exposure can increase blood glucose levels, potentially worsening the conditions of diabetics<sup>18</sup>.
- Fluoride is often used in laboratory settings to poison enzymes in vitro.
- Fluoride is already affordable and easily available in dental products and tablets. However, *avoiding* fluoride in water is usually expensive and inconvenient.
- Communities are generally fluoridated without informed consent to medication by local or state government.
- No government agency accepts responsibility for the safety of fluoridation.

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<sup>8</sup> H. Cristiani, "Alteration de la Glande Thyroïde dans L'intoxication Fluorée

<sup>9</sup> M.T. Alarcón-Herrerar, I.R. Martín-Domínguez, R. Trejo-Vásquez, et al., "Well Water Fluoride, Dental Fluorosis, Bone Fractures in the Guadiana Valley of Mexico," *Fluoride* 34, no. 2 (2001): 139-49, <http://www.fluoride-journal.com/01-34-2/342-139.pdf>.

<sup>10</sup> A. Singh, S.S. Jolly, B.C. Bansal, and C.C. Mathur, "Endemic Fluorosis: Epidemiological, Clinical, and Biochemical Study of Chronic Fluoride Intoxication in Punjab (India)," *Medicine* 42 (1963): 229-46.

<sup>11</sup> P. Connett et al., "Revisiting the Fluoride-Osteosarcoma Connection in the Context of Elise Bassin's Findings: Part I" submission to the National Research Council, National Academies Toxicologic Risk of Fluoride in Drinking Water, March 2 2005, <http://www.fluoridealert.org/health/cancer/fan-nrc.part1.pdf>

<sup>12</sup> J.A. Varner, K.F. Jensen, W. Horvath, and R.L. Issacson, "Chronic Administration of Aluminum-Fluoride or Sodium-Fluoride to Rats in Drinking Water: Alterations in Neuronal and Cerebrovascular Integrity," *Brain Research* 784, no. 1-2 (1998): 284-98. Extended excerpts at <http://www.fluoride-journal.com/98-31-2/31291-95.htm>

<sup>13</sup> H. Long, Y. Jin, M. Lin, et al., "Fluoride Toxicity in the Male Reproductive System," *Fluoride* 42, no. 4 (2009): 260-76, [http://www.fluorideresearch.org/424/files/FJ2009\\_v42\\_n4\\_p260-276.pdf](http://www.fluorideresearch.org/424/files/FJ2009_v42_n4_p260-276.pdf)

<sup>14</sup> National Research Council of the National Academies, *Fluoride in Drinking Water: A Scientific Review of EPA's Standards* (Washington, DC: National Academies Press, 2006), 280, [http://www.nap.edu/openbook.php?record\\_id=11571&page=280](http://www.nap.edu/openbook.php?record_id=11571&page=280)

<sup>15</sup> J. Luke, "The Effect of Fluoride on the Physiology of the Pineal Gland," PhD thesis, University of Surrey, Guildford, UK, 1997. Thesis online, with permission of author, at <http://fluoridealert.org/luke-1997.pdf>.

<sup>16</sup> E. Helleret al., "Dental Caries and Dental Fluorosis at Varying Water Fluoride Concentration"

<sup>17</sup> E. Dincer, "Why Do I Have White Spots on My Front Teeth," *New York State Dental Journal* 74, no. 1 (2008): 58-60, <http://www.nysdental.org/img/current-pdf/JrnJan2008.pdf>.

<sup>18</sup> National Research Council, of the National Academies, *Fluoride in Drinking Water: A Scientific Review of EPA's Standards* (Washington, DC: National Academies Press, 2006), 260, <http://www.nap.edu/openbook.php?isbn=030910128X&page=260>