

Natural Medicine Views on Fluoride and Effects on Your IQ – 53 Studies

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As of June 2018, a total of 60 studies have investigated their relationship between fluoride and human intelligence, and over 40 studies have investigated the relationship fluoride and learning/memory in animals. Of these investigations, 53 studies have found that elevated fluoride exposure is associated with reduced IQ in humans, while 45 animal studies (<http://www.fluoridealert.org/studies/brain02>) have found that fluoride exposure impairs the learning and/or memory capacity of animals. The human studies, which are based on IQ examinations of over 15,000 children, provide compelling evidence that based on IQ examinations of over 15,000 children, provide compelling evidence that fluoride exposure during the early years of life can damage a child's developing brain.

After reviewing 27 of the human IQ studies, a team of Harvard scientists (http://www.fluoridealert.org/articles/hsph_2012/) concluded that fluoride's effect on the young brain should not be a "high research priority". (Choi, et al 2012). Other reviewers have reached similar conclusions, including the prestigious National Research Council (<http://www.fluoridealert.org/researchers/nrc/findings/>). (NRC), and scientists in the Neurotoxicology Division (http://www.fluoridealert.org/uploads/epa_mundy.pdf) of the Environmental Protection Agency (Mundy, et al). In the table below, summarized are the results from the 51 studies that have found associations between fluoride and reduced IQ and provide links to full-text copies of the studies. For a discussion of the 7 studies that did not find an association between fluoride and IQ go to (<http://www.fluoridealert.org/studies/brain07/>).

Quick Facts About the 53 Studies:

Location of Studies: China (33), India (13), Iran (4) and Mexico (3)

Sources of Fluoride Exposure: 43 of the 53 IQ studies involved communities where the predominant source of fluoride exposure was water, seven studies investigated fluoride exposure from coal burning.

Fluoride Levels in Water: IQ reductions have been significantly associated with fluoride levels of just 0.15 to 1.38 mg/L (Bashash 2017); 0.7 to 1.2 mg/L (Sudhir 2009); 0.88 ,g/L among children with iodine deficiency.

(<http://www.fluoridealert.org/studies/thyroid01/>) (Lin 1991) Other studies have found IQ is directly proportional with the amount of fluoride in the body. The following are the amounts and studies: 0.3 – 3.0 ppm,(Ding 2011); 2.0ppm (Yao 1996, 1997); 2.1 ppm (Das 2016); 2.1-3.2 ppm (An 1992); 2.2 ppm (Choi 2015); 2.3 ppm (Trivedi 2012); 2.38 ppm (Poureslami 2011); 2.4-3.5 ppm (Nagarajappa 2013); 2.45 ppm (Esware 2011); 2.5 ppm (Sera 2006); 2.5-3.5ppm (Shivaprakash 2011); 2.85 ppm (Hong 2001); 2.97 (Wang2001, Yang 1994); 3.1 ppm (Seraj 2012); 3.15 ppm (Lu 2000); 3.94 ppm (Karimzade 2014); and 4.12 ppm (Zhao 1996).

Fluoride Levels in Urine: About a quarter of the IQ studies have provided data on the level of fluoride in the children’s urine, with the majority of these studies reporting that the average urine fluoride level was **below 3 mg/L**. To put this level in perspective, a study from England found that 5.6% of the adult population in fluoridated areas have urinary fluoride levels exceeding 3 mg/L, and 1.1% have levels exceeding 4 mg/L. (Mansfield 1999

(<http://www.fluoridealert.org/uploads/mansfield - 1999.pdf>). Although there is an appalling absence of urinary fluoride data among children in the United States, the excess ingestion of fluoride toothpaste

(<http://www.fluoridealert.org/content/toothpaste-exposure/>), among some young children is almost certain to produce urinary fluoride levels that exceed 2 ppm in a portion of the child population.

In Utero Exposure: Bas (<http://ehp.niehs.nih.gov/ehp655/hash2017> (<http://ehp.niehs.gov/ehp655/>) and ValdezJimenez 2017 ([http://fluoridealert.org/studytracker\(27898/\)](http://fluoridealert.org/studytracker(27898/))) evaluated the association of in utero exposure to fluoride on the offspring. The determination of the fluoride exposure was through urine analysis during the pregnancy.

Methodological Limitation

As both the NRC and Harvard reviews have correctly pointed out, many of the fluoride/IQ studies have used relatively simple designs and have failed to adequately control for all of the factors that can impact a child’s intelligence (e.g. parental education, socioeconomic status, lead and arsenic exposure). For several

reasons, however, it is unlikely that these limitations can explain the association between fluoride and IQ.

First, some of the fluoride/IQ studies have controlled for the key relevant factors, and significant associations between fluoride and reduced IQ were still observed. This fact was confirmed in the Harvard review, which reported that the association between fluoride and IQ remains significant when considering only those studies that controlled for certain key factors (e.g., arsenic; iodine, etc). Indeed, the two studies that controlled for the largest number of factors (Rocha Amador 2007 (http://http://www.fluoridealert.org/uploads/rocha_amador-2007.pdf); Xiang 2003a.b (<http://http://www.fluoridealert.org/uploads/xiang-2003a.pdf>) reported some of the largest associations between fluoride and IQ to date.

Second, the association between fluoride and reduced IQ in children is predicted by, and entirely consistent with, a large body of other evidence,. Other human studies (<http://fluoridealert.org/studies/brain02/>), for example, have found associations between fluoride, cognition, and neurobehavior in ways consistent with fluoride being a neurotoxin. In addition, animal studies have repeatedly found (<http://fluoridealert.org/studies/brain02/>) that fluoride impairs the learning and memory capacity of rats under carefully controlled laboratory conditions. An even larger body (<http://fluoridealert.org/studies/brain04/>) of animal research has found that fluoride can directly damage the brain, a finding that has been confirmed in studies of aborted human fetuses (<http://www.fluoridealert.org/studies/brain05/>) from high-fluoride areas.

Finally, it is worth considering that before any of the studies finding reduced IQ in humans were known in the western world, a team of U.S. scientists at a Harvard – affiliated research center predicted (based on behavioral effects they observed in fluoride-treated animals) that fluoride might be capable of reducing IQ in humans. (Mullenix 1995

Summary:

When considering their consistency with numerous animal studies, it is very unlikely that the 53 human studies finding associations between fluoride and reduced IQ can all be a random fluke. The question today, therefore, is less whether fluoride reduces IQ, but at what dose, at what time, and how this dose and time varies based on an individuals' nutritional status, health status, and

exposure to other contaminants (e.g., aluminum, arsenic, lead, etc.). Of particular concern is fluoride's effect on children born to women with suboptimal iodine intake (<http://www.fluopridealert.org/studies/thyroid01>) during the intake themselves. According to the U.S. Center for Disease Control approximately 12% of the U. S. population (http://www.fluoridealter.org/articles/iodine_intake/) has deficiency exposure to iodine.

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