

# Government Report: Multiple Studies Show Fluoridation Can Lower Child IQ

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Fluoride Action Network (FAN) – Today, National Toxicology Program (NTP) authors **published an article** in the Journal of the American Medical Association (JAMA) Pediatrics with details underpinning an NTP report **released** in August 2024 that concluded fluoride is neurotoxic and can lower the IQ of children. Today’s article adds to the science showing IQ losses can occur at exposure levels experienced by some people with artificially fluoridated water.

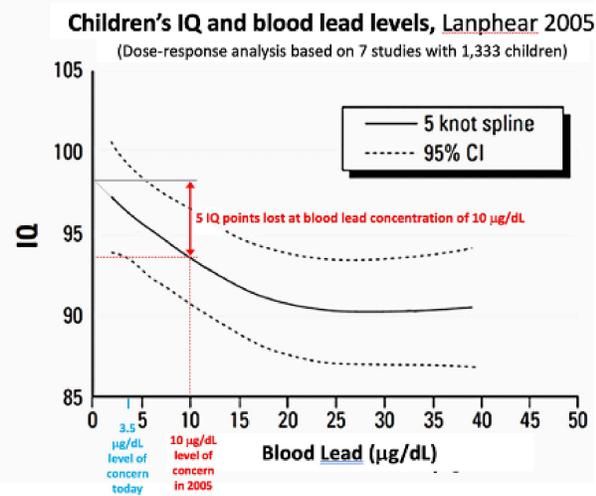
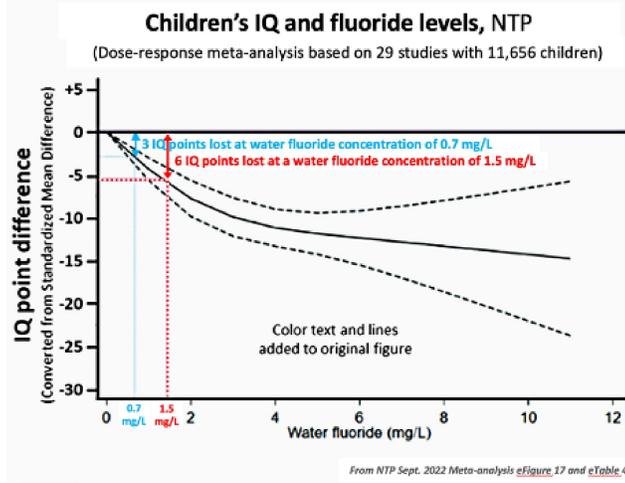
FAN’s Executive Director Stuart Cooper said, “The authors combined information from multiple studies to get a more reliable view of the total evidence that isn’t skewed by just one or two outlier studies. This approach is called meta-analysis. Out of 59 studies, 52 linked higher fluoride levels with lower IQ. The average loss was 7 points. Reduced IQ was also found in meta-analyses that combined seven high-quality studies having exposures below 1.5 milligrams fluoride per liter of water (mg/L), the range directly relevant to fluoridated areas. The authors emphasized the finding’s ‘consistency’ and ‘robustness.’ This report gives ammunition to the **scores** of cities around the country now considering stopping fluoridation.”

Chris Neurath, FAN’s Science Director, emphasized, “The report also found a clear trend between studies, with IQ losses increasing as study fluoride levels increased. This dose-response relationship strengthens the NTP’s conclusion that the effect is real and not an artifact of confounding factors or chance.” Neurath described what he considers another key finding that “deals a blow to claims by fluoridation defenders that loss of IQ has only been found in studies with exposures twice as high as in the US. Artificial fluoridation in the US has a target concentration of 0.7 mg/L. The report’s dose-response analyses had studies with concentrations as low as 0.3 mg/L finding loss of IQ. Seven studies had concentrations below 1.5 mg/L and an average IQ loss of about 3 points.”

The authors warned that:

*“Although the estimated decreases in IQ ... may seem small ... research on other neurotoxicants has shown that subtle shifts in IQ at the population level can affect people who fall within the high and low ranges of the population’s IQ distribution. For context, a 5-point decrease in a population’s IQ would nearly double the number of people classified as intellectually disabled.”*

Editors of *JAMA Pediatrics*, **responding** to a previous **study** published in their journal, noted that the effect of fluoride was “on par with lead.” Neurath confirmed the *JAMA* editors’ comments, explaining, “The similarities between effects of fluoride and lead on children’s IQ can be seen by comparing the two neurotoxicant’s dose-response graphs. The NTP produced a graph from its meta-analysis of multiple studies, which is compared to a graph of child blood lead and IQ from a pooled analysis **paper** that persuaded the CDC and EPA to lower the acceptable level of lead in children”:



On the left is the NTP's graph of IQ loss by water fluoride concentration. At 0.7 mg/L, the estimated average IQ loss is 3 points. According to Neurath, "3 IQ points is the average. Many children may experience no loss, while others will lose more than 3 points. To detect this effect required careful studies with many children. Observing the effect in the US is even harder because 2/3rds of the country is fluoridated so fluoride ends up in bottled beverages and many processed foods, making it difficult to find comparison groups with low exposure. That's why NTP combined multiple studies to get a clearer picture of what was happening at exposure levels common in the US. The dose-response curve shows statistically significant IQ losses down to the lowest fluoride levels.

Two editorials accompanied the article. The first authored by researchers Bruce Lanphear, MD, MPH, Pam Den Besten, DDS, MS, and Christine Till, PhD, is entitled "[Time to Reassess Systemic Fluoride Exposure, Again.](#)" The second was an [editorial](#) by dentist and fluoridation advocate Steven Levy. He questions the NTP's meta-analysis despite it having had six peer-reviews in the last five years with no substantive changes. Levy relies heavily on a meta-analysis by Kumar, another dentist fluoridation advocate. Kumar claimed his meta-analysis found no effect among studies below 1.5 mg/L. However, from emails obtained through Public Records requests, FAN has identified [serious concerns](#) that Kumar buried findings of a strong dose-response relationship below 1.5 mg/L because they contradicted his desired result.

The lead attorney in a recent [federal court case](#), Michael Connett, said "The NTP's meta-analysis was a major reason the court concluded that fluoridation at 0.7 mg/L posed an 'unreasonable risk' of IQ loss in children. The defendant, EPA, tried to argue there was not enough certainty of harm at levels below 1.5 mg/L, but the court concluded there was more than enough, [ruling](#):"

*"In all, there is substantial and scientifically credible evidence establishing that fluoride poses a risk to human health; it is associated with a reduction in the IQ of children and is hazardous at dosages that are far too close to fluoride levels in the drinking water of the United States .... Reduced IQ poses serious harm. Studies have linked IQ decrements of even one or two points to, e.g., reduced educational attainment, employment status, productivity, and earned wages."*

Connett added, "The court also noted that because humans vary in susceptibility to toxic agents – with some harmed at doses 10x lower than the average person – studies finding IQ loss at 1.5 mg/L provide sufficient evidence to conclude that even 0.15 mg/L poses an unreasonable risk of harm to the most susceptible."

FAN's founder and current senior advisor, Paul Connett PhD said "The second shoe of NTP's review has just dropped and should end fluoridation once and for all. The dental groups clinging to fluoridation should read this report instead of repeating their mantra that 'fluoridation is safe and effective'. No fluoridation promoter can still claim that the best science and scientific analysis shows that fluoridation is safe. Far from it. It is too risky to expose our babies and formula-fed infants to fluoride. There are much better ways to get fluoride's benefit against tooth decay, like fluoridated toothpaste, that don't require swallowing it. The latest Cochrane Collaboration [review](#) of fluoridation's effectiveness [found](#) that water fluoridation no longer provides more than a marginal reduction in cavities."



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