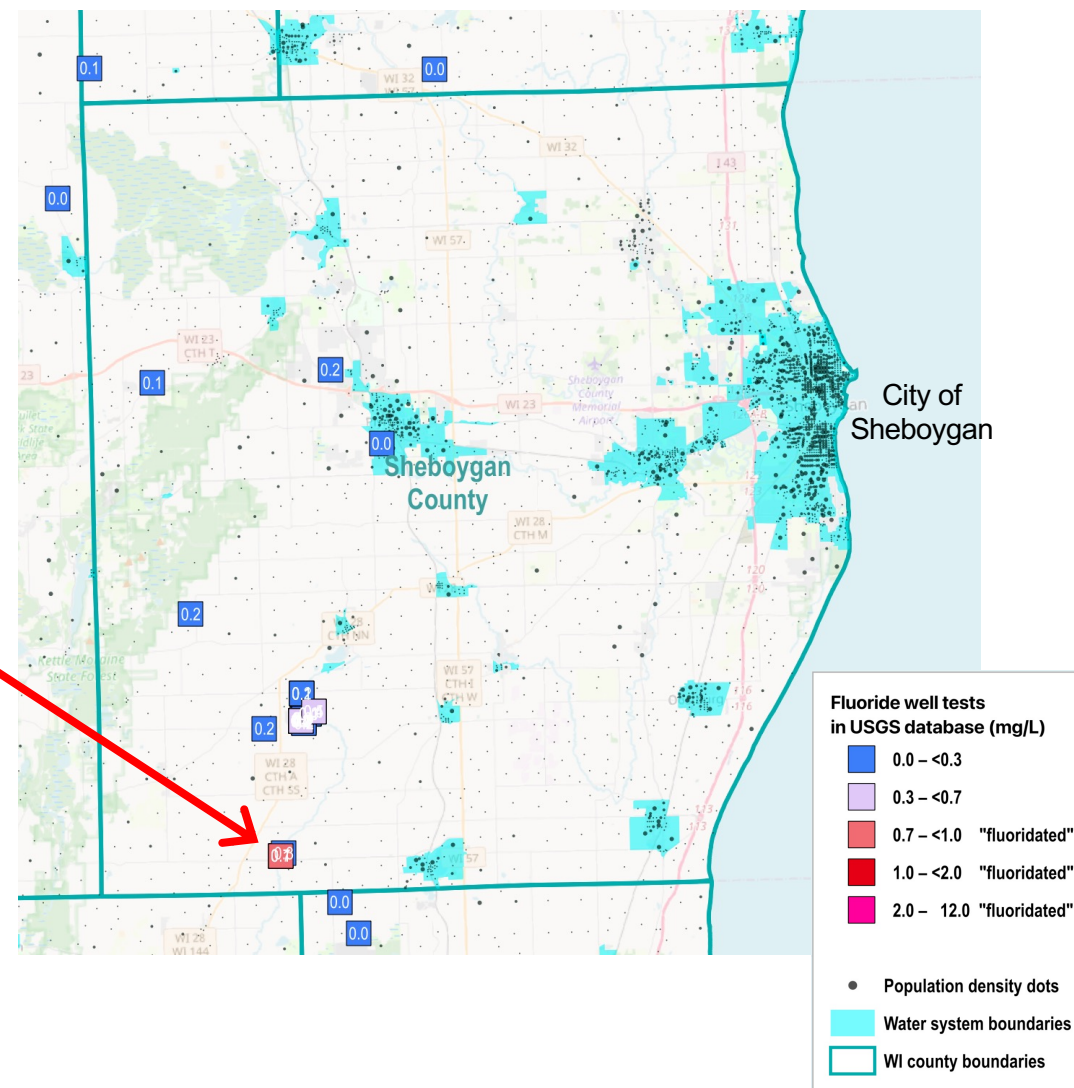


Warren's faulty method of assigning "fluoridated" exposure

- If just 1 groundwater well in a county had fluoride of 0.7 mg/L or greater, the entire population of the county was classified as "fluoridated"
- Yet in 1940, when the subjects were at their most susceptible ages, there was no CWF (Community Water Fluoridation) in Wisconsin or anywhere else in the U.S.
- Cities, where most of Wisconsin's population lives, mostly use surface water from lakes and rivers, which is always low in fluoride.
- Warren's "1 well per county" method falsely caused 100% of people in 8 Wisconsin counties to be classified as "exposed" based on a single well and 100% in 3 other counties based on just two wells, despite the large majority of wells in these counties being low fluoride.

Sheboygan County example

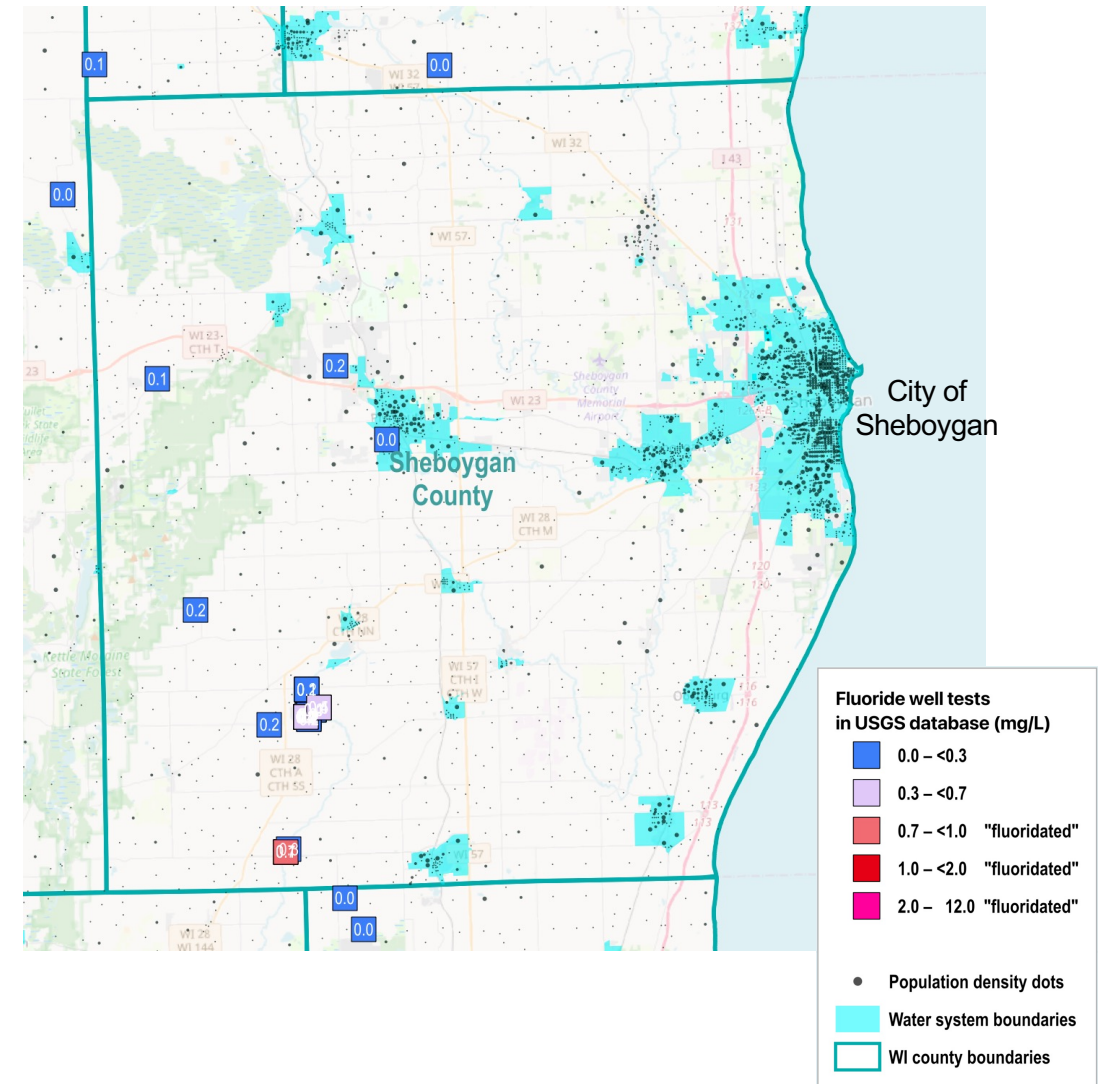
- Just 1 well in Sheboygan County in the USGS well database had fluoride of 0.7 mg/L or higher.
- Every other well in Sheboygan County tested below 0.7 mg/L, with the average concentration of them 0.2 mg/L.
- The City of Sheboygan is on Lake Michigan from which it gets most of its drinking water so it was irrelevant what the fluoride level was in a well in a distant corner of the county. In 1940 it was still another 6 years before the city would start intentionally adding fluoride.
- The 1 well that triggered Warren to classify the entire county as "fluoridated" wasn't even a drinking water well. It was a "monitoring well" that was literally a foot deep in the back of a farmer's field and was probably monitoring a pollution hot spot. A second monitoring well a few feet away had low fluoride, so this was just a tiny area that probably had illegal dumping that was far from any populated part of the county or even any private drinking water wells.



Warren's faulty method of assigning "fluoridated" exposure

The consequences for his study's validity

- He classified many children as "exposed" in 1940 who actually weren't because of his reliance on an inadequate set of data – the USGS groundwater well data – and the faulty criteria of using a single well to determine an entire county population's exposure.
- Furthermore, there was no Community Water Fluoridation in Wisconsin or anywhere else in the US in 1940, and there wouldn't be for 6 more years when children had reached 7 years old and were past the vulnerable period when their brains are most rapidly developing.
- Warren's faulty misclassification method led him to believe that 25% of his cohort were exposed to natural fluoridation during their early life. But using reliable and much larger databases on well fluoride in Wisconsin, and reliable data on the fluoride level in public water systems, the true percentage of people in Wisconsin who were exposed to natural fluoridation was only about 8%. Therefore, about 3/4ths of the children Warren classified as "exposed" in 1940 were actually not.
- The most fundamental requirement of an epidemiological study is that exposure is correctly determined. If you don't know who was actually exposed you can't know whether exposure causes harm. Warren's seriously faulty method means his results are invalid and his study can provide no evidence of fluoridation safety.
- **ANALOGY:** It's like trying to determine whether exposure to flaking lead paint lowers a child's IQ by checking whether one house somewhere in the county has peeling lead paint, rather than whether the child's own home does.



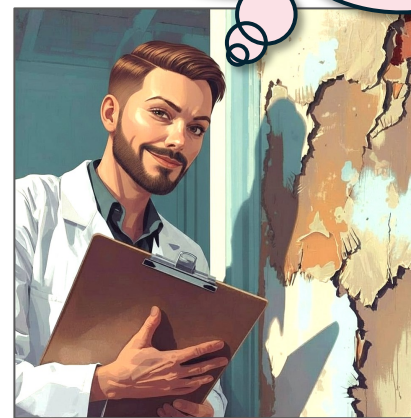
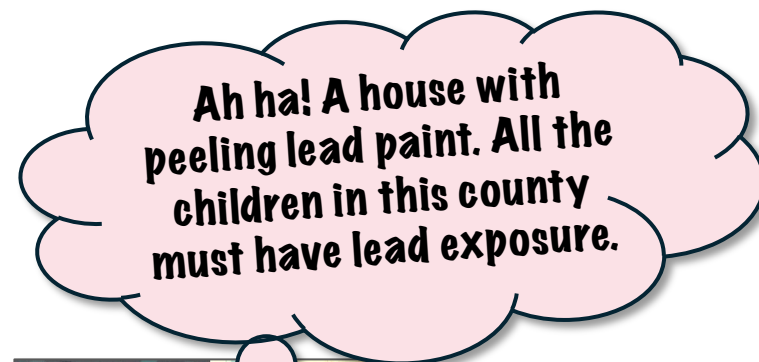
Warren's faulty method of assigning "fluoridated" exposure

The authors assumed that if ONE well in a county had "optimal" fluoride levels (0.7 mg/L) then EVERY CHILD in that county was exposed to fluoridated water. This assumption, which is critical to the study, has basically no connection to reality. Why? Because the level of fluoride in a single well tells you virtually nothing about the level of fluoride in other wells, let alone in *all* other wells, let alone in *public water supplies* (which are often derived from low fluoride surface waters, not well water).

Why does this matter? Because the study's use of a clearly erroneous measurement of early life exposure to fluoridated water made it virtually impossible for this study to detect an association between early-life fluoride exposure and IQ.



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