

The finding's of the NTP's 6-year fluoride neurotoxicity evaluation

May 4, 2023



American **Environmental** Health **Studies** Project

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Science Director

What did the NTP find?

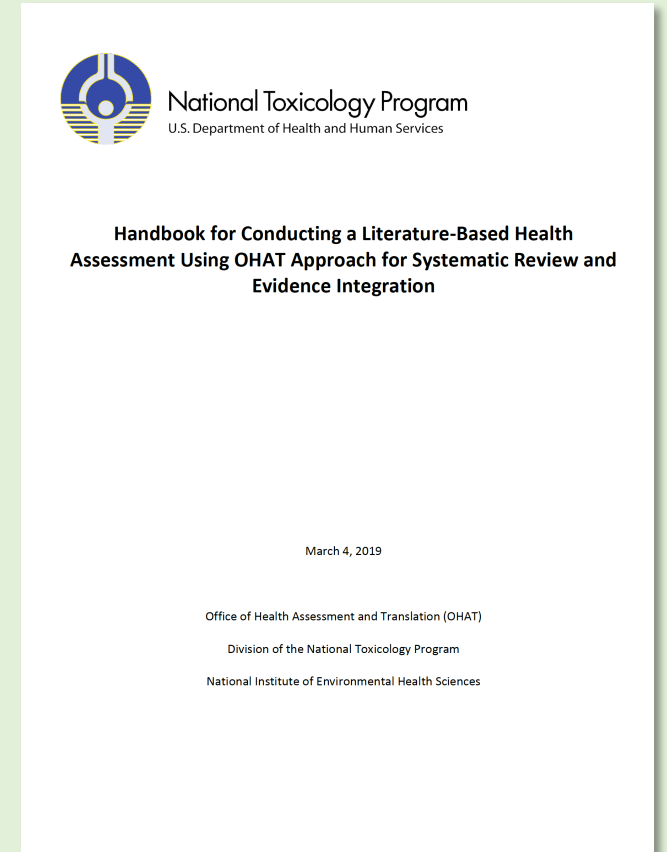
The NTP's

“moderate confidence”

conclusion for developmental neurotoxicity
in human studies supports a

“presumed hazard”

conclusion when applying NTP's OHAT
methodology.



“Moderate confidence” is the 2nd highest OHAT confidence conclusion.

“Presumed hazard” is the 2nd highest OHAT hazard conclusion and is applied when human studies give “moderate confidence” and there is a **“relatively large and consistent body of evidence”**

Did NTP find a “relatively large and consistent body of evidence”?

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“Presumed hazard” is the 2nd highest OHAT hazard conclusion and is applied when human studies give “moderate confidence” and there is a “relatively large and consistent body of evidence”

Latest NTP 2022 monograph

- **52 of 55** human studies found reduction in IQ from fluoride
- **18 of 19** human studies rated low Risk of Bias by NTP found reduction in IQ from fluoride

“The pattern of results across the 55 studies was consistent; **52 (95%) reported an inverse association**”

“Subgroup analyses by sex, age group, study location, outcome assessment type, and exposure assessment type further support the **consistent and robust pattern** of an inverse association between fluoride exposure and children’s IQ”

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When NTP was still making hazard assessments in 2020, how large and consistent was the body of evidence needed to support a “presumed hazard” conclusion?

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Earlier NTP 2020 monograph

- **44 of 46** human studies found reduction in IQ from fluoride
- **8 of 9** human studies rated low Risk of Bias by NTP found reduction in IQ from fluoride

NTP 2020 monograph concluded fluoride posed a **“presumed hazard”** of developmental neurotoxicity

The body of evidence has strengthened

Dose-Response

Did NTP find a safe threshold?

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Did NTP find a safe threshold?

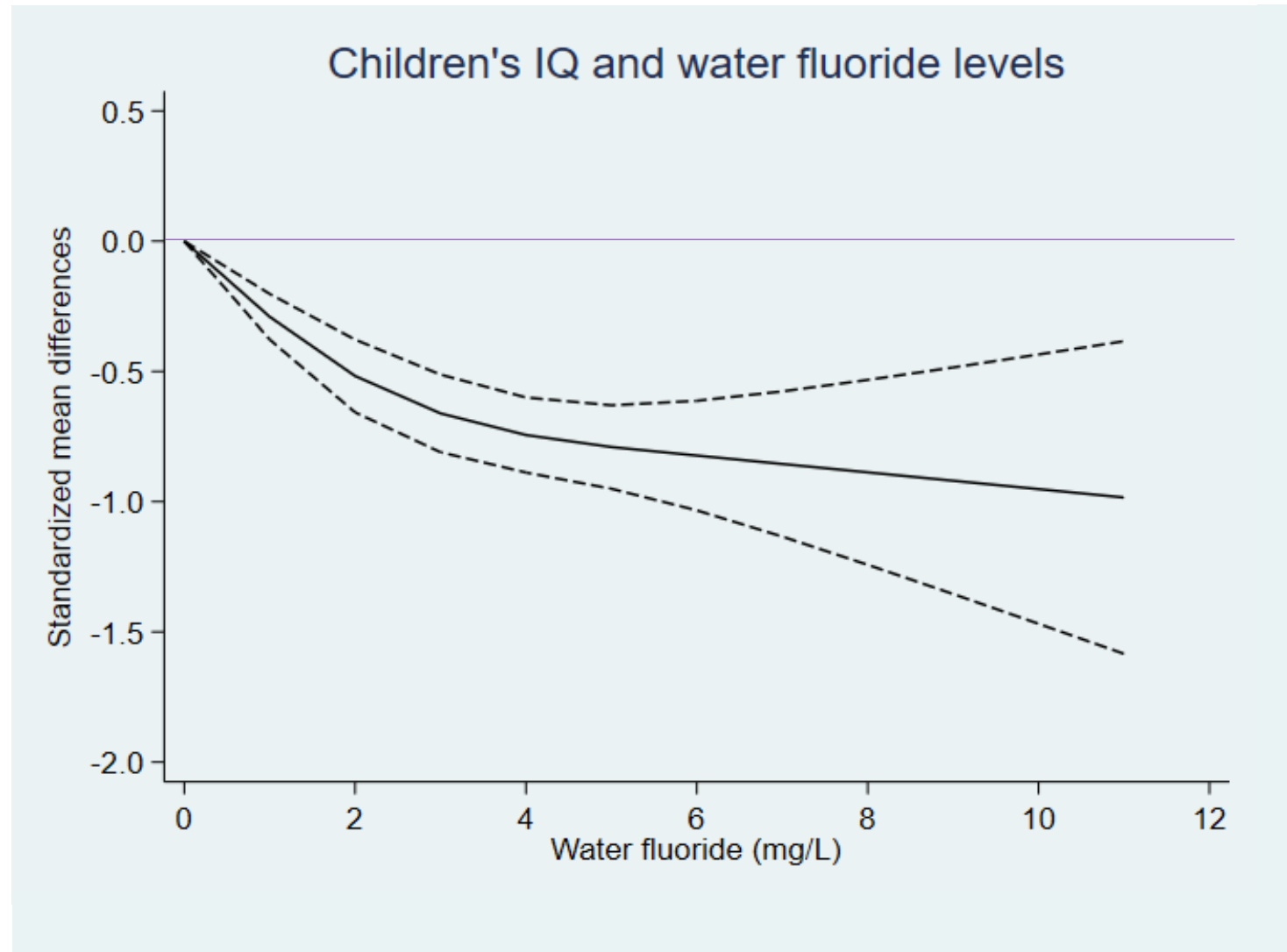
“there was no obvious threshold as illustrated by the figure ...”

[BSC WG report page 326]

July 2022

Dose-Response Meta-Analysis

eFigure 17

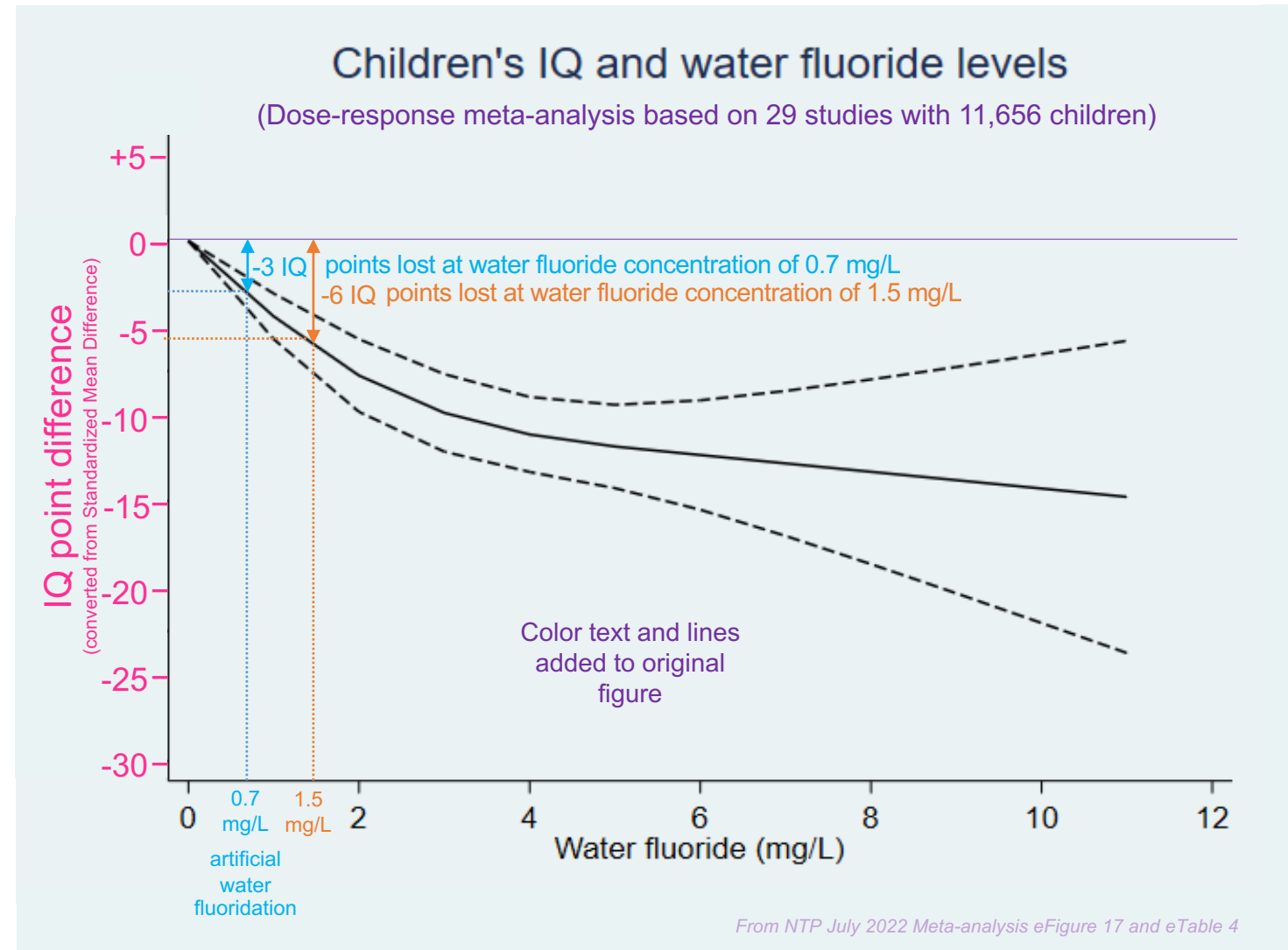


July 2022

Dose-Response Meta-Analysis

eFigure 17

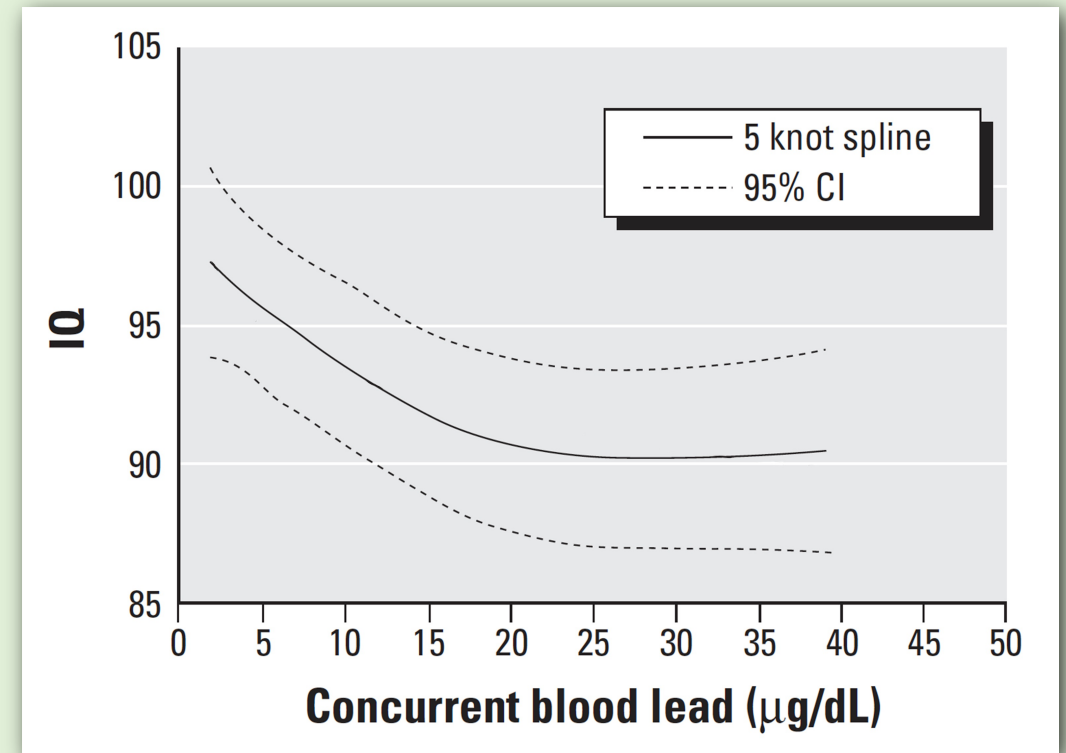
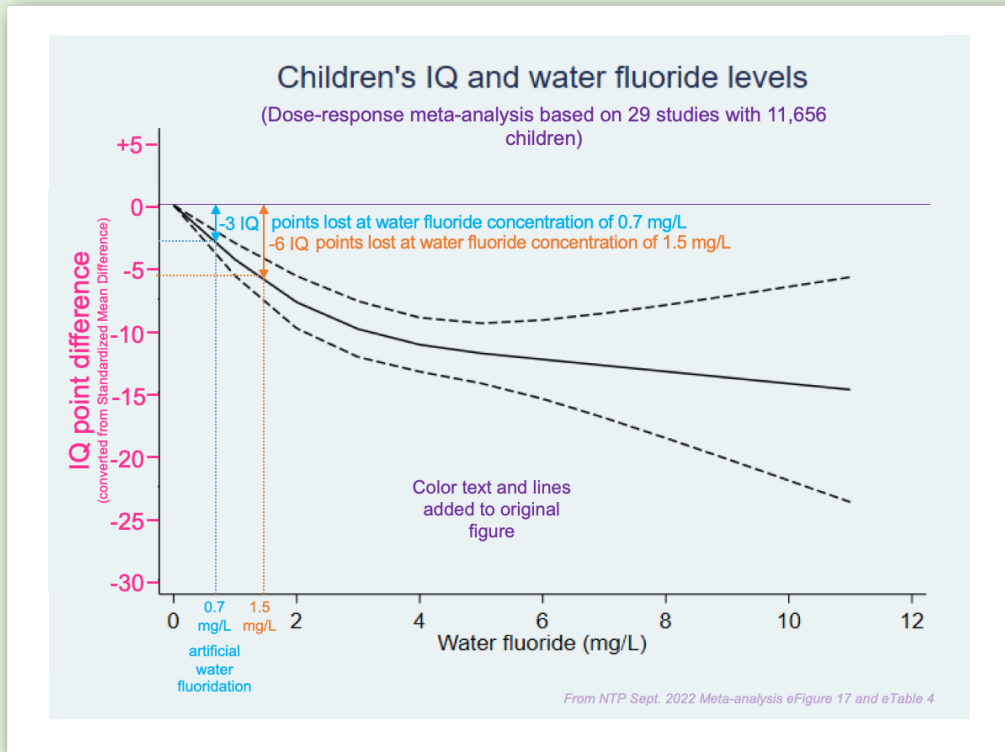
**No evidence of a
threshold at 1.5 mg/L
or 0.7 mg/L water F
concentration.**



Dose-Response Relationships

Fluoride-IQ (NTP 2022)

Lead-IQ (Lanphear et al 2005)



Research | Children's Health

Low-Level Environmental Lead Exposure and Children's Intellectual Function: An International Pooled Analysis

Bruce P. Lanphear,^{1,2} Richard Hornung,^{1,2,3} Jane Khoury,^{1,2} Kimberly Yolton,¹ Peter Baghurst,⁴ David C. Bellinger,⁵ Richard L. Canfield,⁶ Kiny N. Dietrich,⁷ Robert Bornschein,² Tom Greene,⁸ Stephen J. Rothenberg,⁹ Herbert L. Needleman,¹⁰ Lourdes Schnaas,¹¹ Gail Wasserman,¹² Joseph Graziano,¹³ and Russell Roberts¹⁴

The NTP's response to an HHS agency comment about exposures from drinking water in the United States:

The comment implies that our conclusions are based solely on “studies [that] were conducted on populations with higher exposures from water than are routinely found in the United States.” This implication is not accurate. ...

... the confidence assessment also includes findings from studies with fluoride exposures that are similar to, or lower than, those associated with optimally fluoridated water supplies in the United States. ...

As demonstrated in Green et al. (2019), who used repeated individual urinary measurements, drinking water measures likely capture only a portion of a person's total exposure to fluoride as personal preferences and habits may increase total exposures to unknown levels. Therefore, this document, as well as any associated communication, focuses on total fluoride exposures from all sources, not just drinking water.

[BSC WG report page 26]

Summary of NTP findings

- “moderate confidence” of developmental neurotoxicity
- large and very consistent body of evidence supports “presumed hazard” conclusion
- no safe threshold observed
- “moderate confidence” conclusion applies to water fluoride of 0.7 mg/L

No wonder the divisions of HHS
that promote fluoridation have
tried to alter, delay, and suppress
the NTP evaluation!

From documents obtained through Freedom of Information Act (FOIA) the political pressure has come from fluoridation promoting divisions of **HHS** including **NIDCR**, **CDC Oral Health**, and the **PHS Surgeon General's office**, together with dental lobby groups like the **American Dental Association**.

These government and dental agencies have been vigorously promoting fluoridation for over 70 years.

They are using the same science manipulation tactics the lead, tobacco, and chemical industries have used to defend their toxic products.

Request to BSC members:

**Uphold the scientific integrity of
the NTP and its dedicated staff**

FREE the NTP report