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## **National Academies: NTP's Conclusion about Fluoride Is Not Backed by Science**

*National Academies Report Cites Numerous Concerns with NTP's 2019 monograph*

Last September, the National Toxicology Program (NTP) released a [draft monograph](#) concluding that “fluoride is presumed to be a cognitive neurodevelopmental hazard to humans.” Before finalizing its monograph, NTP asked a committee of the National Academies of Sciences, Engineering and Medicine to review its conclusion and decide whether it is supported by the scientific evidence. In [a new report](#), the Committee finds that NTP's monograph failed to provide adequate support for its conclusion.

The National Academies committee voiced “substantive concerns” with how NTP evaluated the human evidence in the draft of its *Systematic Review of Fluoride Exposure and Neurodevelopmental and Cognitive Health Effects*. The Committee wrote that NTP “needs to state clearly that the monograph is not designed to be informative regarding decisions about fluoride concentrations for water fluoridation.”

The NTP draft monograph stated that its conclusion was based primarily on fluoride exposure levels that are roughly double the concentration used for community water fluoridation. Nonetheless, the NTP document raised concern among many public health leaders and dental professionals who worried that NTP's conclusion might create needless fear or confusion among the public.

“This report by the National Academies makes it clear that NTP's conclusion was not backed up by solid science. Tooth decay is the most common chronic disease among children, and agencies like this need to be careful and cautious before they arrive at weak conclusions that could potentially scare children and adults away from fluoride in water, toothpaste or other products,” said Dr. Johnny Johnson, a pediatric dentist who is president of the American Fluoridation Society, a nonprofit 501(c)4 organization.

The National Academies committee was not asked to adopt a position as to whether fluoride is safe or not. Instead, the Committee was given one task — evaluate NTP's draft monograph by assessing whether its conclusion accurately reflects the scientific literature. The Committee's report stated that NTP would need to conduct and present more analysis before it could reach and support a conclusion about fluoride's effect on neurodevelopment.

Throughout its report, the National Academies committee raises concerns with numerous areas of the NTP monograph. The Committee's concerns include the following:

- The studies included in NTP's systematic review “did not undergo rigorous statistical review” and called this “problematic” because some of these studies had issues or errors that “compromised their internal validity.”
- NTP appeared to have applied its “risk of bias” criteria inconsistently.

- NTP failed to address the misclassification of fluoride exposure “thoroughly and consistently,” raising the question of whether NTP’s evaluations “were sufficient and supported its conclusion.”
- Researchers should consider potential confounding as they design and analyze a study to ensure that an association is not attributed by error to the wrong variable. With this in mind, the National Academies report identified “many cases in which NTP’s evaluation of confounding was insufficient, difficult to understand, or applied inconsistently across studies.”
- NTP classified some studies as having a low risk of bias even though “the measure of the neurodevelopmental and cognitive outcome was seriously flawed.”
- NTP’s protocol did not disclose the inclusion and exclusion criteria it used for selecting the studies it considered in drafting its monograph. Clarity in this area is “critical for transparency of the process and reproducibility of the findings.”

One of the more disturbing concerns raised by the National Academies committee was NTP’s decision to use a group called the Fluoride Action Network (FAN) as a source to identify relevant literature. “The process by which FAN identified and selected studies is unclear,” the Committee writes, “and that uncertainty raises the question of whether the process could have led to a biased selection of studies. Such a concern raises the need for a formal evaluation of any potential bias that might have been introduced into the literature-search process.”

The NTP decision to establish this relationship with FAN is astonishing considering the following facts:

- FAN is not a “research” organization. It uses the web and social media to disseminate messages encouraging local communities to oppose community water fluoridation. Additionally, FAN is one of the [leading plaintiffs in a federal lawsuit](#) seeking to ban a leading type of fluoride additive that is used for CWF.
- FAN has demonstrated a lack of scientific rigor through its interactions with federal health agencies. In 2003, Environmental Protection Agency (EPA) officials evaluated a set of research articles that FAN had submitted to support its objections to the Sulfuryl Fluoride Pesticide Tolerance Rule. [In its evaluation](#), EPA found that most of the FAN articles “did not require a detailed review” because they suffered from one or more weaknesses, including articles with no toxicity data, articles lacking a clear explanation of methodologies, and papers “that did not contain any data on fluoride.”
- FAN has a history of making false or inaccurate statements related to fluoride or fluoridation. In fact, the Pew Center on the States identified [multiple occasions](#) in which FAN’s content included deceptive language.

The weeks that followed the release of the NTP draft monograph demonstrated how poorly NTP misjudged FAN’s integrity and intentions. Within days of the monograph’s release, FAN and other fluoridation opponents used social media and web-based messages in an effort to scare the public about fluoride. [This inflammatory headline](#) on FAN’s website home page is only one example. Even worse, the photo that accompanied the FAN home-page story wrongly implied

that the NTP monograph was a finished document that had been commercially printed for distribution.

No one can credibly argue that FAN's actions were innocent. NTP's monograph included a statement on its page headers that cautioned readers from interpreting the document as an approved policy or final document (see Attachment). This disclaimer advised readers that the "DRAFT Monograph" — using all caps for the word 'draft' — was being distributed "solely for the purpose of pre-dissemination peer review and does not represent and should not be construed to represent any NTP determination or policy." FAN ignored this disclaimer.

For more information about the American Fluoridation Society and community water fluoridation, visit <https://americanfluoridationsociety.org/>.

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