

Online Resource 1

Archives of Toxicology

Toxicity of fluoride: critical evaluation of evidence for human developmental neurotoxicity in epidemiological studies, animal experiments and in vitro analyses

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Online Resource 1 Reports on possible health issues of fluoride from different media outlets obtained online.

The collage features headlines from several major news organizations:

- DNA:** "Fluorides: The neurotoxins in water and toothpaste"
- Süddeutsche Zeitung:** "Gute Zähne, schwacher IQ" (Good teeth, weaker IQ)
- The Telegraph:** "Fluoride: Just when you thought it was safe to drink the water..."
- WISSEN (mdr):** "DIE GROSSEN FRAGEN UNSERER ZEIT" (The big questions of our time)
- health (CNN):** "'Putting the next generation of brains in danger'"
- LIFE:** "Harvard Study Confirms Fluoride Reduces Children's IQ"
- stern:** "Die Legende vom bösen Fluorid: Wie gefährlich ist der Stoff in unserer Zahnpasta wirklich?" (The legend of the evil fluoride: How dangerous is the substance in our toothpaste really?)
- Frankfurter Allgemeine:** "Wo sich Forschung mit Verschwörung mischt" (Where research meets conspiracy)
- The New American:** "Top Medical Journal Labels Fluoride a Neurotoxin"
- welt:** "Fluorid - toll für den Zahnschmelz, nicht immer gut fürs Gehirn" (Fluoride - great for enamel, not always good for the brain)
- Did a New Study Officially Declare That Fluoride Is a Neurotoxin?** (Associated with Snopes.com)
- CISION:** "Neurotoxic: Drinking Fluoridation Chemicals Now Linked to Brain Harm and Cognitive Deficits; Document Filed to EPA"
- ACTIVIST POST:** "The Lancet: Fluoride IS a Neurotoxin"
- Quarks:** "Darum hilft Fluorid bei der Karies-Vorsorge" (That's why fluoride helps with cavity prevention)

A non-representative internet review was conducted to assess how media and freely accessible online information platforms (i.e. web blogs, press agencies or industrial press releases) report on the possible neurotoxicological potential of fluoride between 2012-2018. For this purpose, different databases (“Nexis Uni”, “Genios”, also “Google Advanced Search”) were used. The following keywords were applied for news search (in English and German): “fluorid* AND neurotoxi*” as well as “fluorid* AND intelligen*” and “fluorid* AND IQ*”. The period from 01/01/2012 to 12/31/2018 was chosen for each search request. More than 2.500 hits could be identified for the Nexis Uni search “fluorid* AND intelligen*”, about 1.040 for the Nexis Uni search “fluorid* AND IQ*”. Using the keywords “fluorid* AND neurotoxi*” about 670 hits were still obtained in the Nexis Uni database. Five articles were obtained that contained “fluorid*” and “neurotox*” in their headline – two newspapers, one news magazine, one online press release service and a web blog (1,2,5,6,14). Searching in the German database provider Genios for news that contain “Fluorid* AND “Neurotoxi*” ten press articles could be found. In general, the role of fluoride in reproduction toxicology is a topic that receives much attention in the internet. On the one hand, several pages, mostly web blogs or interest-led platforms, but also few examples of mass media, claimed that fluoride is classified as a human neurotoxin or they present information in a biased way that is characterised by e.g. emotional, alarming language, misleading headlines and by a lack of presenting also contrary opinions. On the other hand, there are also some examples of news articles that present information in a more balanced way, e.g. by quoting different experts or by discussing also the limitations of studies. Additionally, also some examples of articles from leading newspapers were identified that made the often heated and not fact-driven debates about fluoride the subject of their stories (7, 8, 12).

Examples:

1. <https://www.dnaindia.com/technology/report-fluorides-the-neurotoxins-in-water-and-toothpaste-1994325>
2. <https://windsorstar.com/news/local-news/lancet-study-links-fluoride-to-neurotoxins>
3. <https://www.mdr.de/wissen/mensch-alltag/fluorid-macht-kinder-dumm-100.html>
4. https://www.huffpost.com/entry/fluoride_b_2479833
5. <https://www.thenewamerican.com/usnews/health-care/item/18324-top-medical-journal-labels-fluoride-a-neurotoxin>
6. <https://www.activistpost.com/2014/06/the-lancet-fluoride-is-neurotoxin.html>
7. <https://www.telegraph.co.uk/lifestyle/wellbeing/healthadvice/10722701/Fluoride-Just-when-you-thought-it-was-safe-to-drink-the-water....html>
8. <https://www.stern.de/gesundheit/zaehne/fluorid-in-zahncreme--die-legende-vom-gift-in-der-zahnpasta-8395952.html>
9. <https://edition.cnn.com/2014/02/14/health/chemicals-children-brains/index.html>
10. <https://www.sueddeutsche.de/politik/neue-medizinistudie-gute-zaehne-schwacher-ig-1.3710529>
11. <https://www.snopes.com/fact-check/new-study-officially-declare-fluoride-neurotoxin/>
12. <https://www.faz.net/aktuell/gesellschaft/gesundheit/fluorid-in-zahnpasta-ist-es-wirklich-schaedlich-und-giftig-15454692.html>
13. <https://www.quarks.de/gesundheit/darum-solltest-du-es-mit-fluorid-nicht-uebertreiben/>
14. <https://www.prweb.com/releases/2016/tscapetition/prweb13920498.htm>
15. <https://www.welt.de/gesundheit/article169841727/Fluorid-toll-fuer-den-Zahnschmelz-nicht-immer-gut-fuers-Gehirn.html>