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By email: fyi-request-34286-813707ad@requests.fyi.org.nz

Ref: H2026080738

Tēnā koe Alisha

Response to your request for official information

Thank you for your request under the Official Information Act 1982 (the Act) to the Ministry of Health – Manatū Hauora (the Ministry) on 29 March 2026 for information relating to data models and methodology for the November and December 2024 public health publications. You requested:

I am currently doing some research into public health methodology and toxicology, and I am trying to understand the scientific workings behind the Public Health Agency's recent NZBORA analysis (specifically the Memorandum to the Director-General dated 29 November 2024).

I was reading Paragraph 25 of the Memo, which mentions that the Office of the Chief Science Advisor (OCSA) reviewed the recent US NTP Monograph and the 2024 Cochrane Review, and concluded that they "do not change the overall conclusions reached". I am struggling to reconcile some of the math and toxicology in my own research, so I was hoping to request the internal workings and models the OCSA used so I can follow along and better understand their assessment.

I am requesting the following information and internal documentation:

(Scope Limitation to prevent substantial collation:

To ensure this request is highly targeted and does not require substantial collation or research under Section 18(f) of the OIA, I am happy to limit the scope of any searches for "emails," "meeting minutes," or "correspondence" to the 12-month period between January 1, 2024, and December 31, 2024. Furthermore, for any requested "memos," "models," or "evaluations," providing the final approved versions rather than draft iterations is perfectly fine.)

Part 1: The 2024 Cochrane Review

I was reading the 2024 Cochrane Review, and it noted a 40% fluorosis prevalence, a marginal benefit of only 0 to 1/4 of a tooth for primary dentition, and didn't find eligible studies for adult benefit. I'm trying to figure out how to weight a fraction of a tooth against a 40% prevalence rate mathematically in a public health cost-benefit model.

1. Could I please request any internal memos, meeting notes, or emails from the OCSA discussing this Cochrane review?

2. I would also need to see any mathematical models, statistical analyses, or documents the OCSA produced that show how they factored these specific Cochrane findings—specifically the 1/4 tooth benefit versus the 40% fluorosis rate—into their conclusion that the safety and proportionality of the mandate remained unchanged.

Part 2: US National Toxicology Program (NTP) Monograph

For the August 2024 US NTP Monograph, I'm trying to learn how standard toxicological safety margins are applied to population-wide policies.

3. Could I please request any literature reviews or toxicological evaluations the OCSA did specifically assessing the neurodevelopmental hazards identified in the NTP report?

4. Could I also request any specific calculations the OCSA performed to establish the safety margins (such as standard 10x or 100x uncertainty factors) for vulnerable demographics like infants and pregnant women in light of the NTP's findings?

Part 3: Genetic Vulnerability, Metabolic Disability, and Demographic Dosing

I have also been looking into population subgroups with genetic vulnerabilities and metabolic disabilities, but I can't seem to find the standard public health models outlining the physiological dose burdens for these specific groups.

5. Could I please request any OCSA risk assessments, literature reviews, or internal communications that look at how systemic fluoride interacts with the MAOA-L genetic phenotype, as well as specific polymorphisms clinically recognized as resulting in metabolic disability (such as the VDR Bsm, MTHFR, and CBS C699T variants)?

6. Additionally, could I request the modelling or documentation the OCSA used to calculate the cumulative dose burden (mg/kg of body weight) for exclusively formula-fed infants? I'm particularly interested in how the OCSA calculations accounted for the statistically higher rates of formula feeding within Māori and Pacific populations.

Part 4: 2009 Oral Health Survey

Finally, I noticed the 2009 New Zealand Oral Health Survey didn't track fluorosis or structural enamel defects for children under 8 or adults over 30. Since this survey is used as a baseline for safety, I'm a bit confused about how to account for those missing age brackets.

7. Could I please request any scientific evaluations or memos produced by the OCSA that discuss how they addressed these missing diagnostic data points when confirming the safety of the policy?

Part 5: Biological Mechanism and Classification of Dental Fluorosis

I was also reading the Ministry's recent publication, *Community Water Fluoridation: An evidence review* (published December 2024 by the Ministry of Health). On page 3, it summarises the OPMCSA's conclusion that dental fluorosis is a "tooth enamel defect" and states that at NZ levels it is "generally mild (i.e., of no health concern and little-to-no cosmetic concern)".

However, in my pathology and histology readings, dental fluorosis is described as an

"inside-out" systemic condition resulting from the disruption of ameloblasts during tooth formation, leading to subsurface hypomineralisation and increased dentin porosity, rather than just a surface-level enamel stain. I am trying to figure out how to classify this in a physiological harm model.

8. *Could I please request any histological reviews, biological models, or internal evaluations the Ministry of Health (including the OCSA and Public Health Agency) relied upon to medically classify fluorosis strictly as a surface-level "enamel defect" rather than a systemic structural impairment involving subsurface and dentin porosity?*

9. *Could I also request any specific risk assessment frameworks, clinical rubrics, or memos the Ministry of Health uses to mathematically draw the line between a "cosmetic concern" and a "health/structural concern" when calculating the overall harm vs. benefit for public health directives?*

10. *As the Ministry's 2024 review adopted the OPMCSA's specific conclusions, could I please request any correspondence, emails, or meeting minutes between the Ministry of Health and the OPMCSA discussing this biological classification of fluorosis and how to weight it in a safety assessment?*

Part 6: Exclusion of Benchmark Dose (BMD) Modeling

I was also reviewing the methodology in "Appendix 3: Exclusion table for neurodevelopmental outcomes" of the December 2024 Evidence Review. I noticed that several landmark toxicological studies (such as Grandjean et al. 2022 and Hirzy et al. 2016) were entirely excluded from the safety analysis, with the stated reason being: "Wrong outcome (benchmark dose analysis)".

In my environmental toxicology coursework, Benchmark Dose (BMD) modeling is taught as the international gold standard for establishing safe exposure thresholds and Point of Departure (POD) metrics for public health regulations. I am confused as to why BMD is classified as the "wrong outcome" for a chemical safety review in New Zealand.

11. *Could I please request any internal OCSA or Ministry of Health methodological guidelines, memos, or correspondence that dictate why Benchmark Dose Analysis is classified as an invalid or "wrong" outcome when assessing the safety of community water fluoridation?*

12. *Since BMD modeling was excluded, could I please request the specific alternative mathematical models and toxicological frameworks the OCSA or Ministry of Health relied upon to accurately establish the Point of Departure (POD) and safe reference dose for neurodevelopmental toxicity in the December 2024 review?*

Information related to questions 2, 3 and 11 of your request is publicly available in *Appendix 5 – Community water fluoridation: Additional information on recent publications* at the following link: www.health.govt.nz/information-releases/director-general-of-health-consideration-of-community-water-fluoridation-under-the-new-zealand-bill Therefore, section 18(d) of the Act applies to these parts of your request.

The Ministry has undergone a search of its records, and no information has been identified within scope of questions 1, 4-10 and 12. As such, these parts of your request are refused under section 18(g)(i) of the Act as the information requested is not held by the Ministry and there are no grounds for believing this information is connected more closely with the functions of another agency subject to the Act.

If you wish to discuss any aspect of your request with us, including this decision, please feel free to contact the OIA Services Team on: oiagr@health.govt.nz.

Under section 28(3) of the Act, you have the right to ask the Ombudsman to review any decisions made under this request. The Ombudsman may be contacted by email at: info@ombudsman.parliament.nz or by calling 0800 802 602.

Please note that this response, with your personal details removed, may be published on the Ministry website at: www.health.govt.nz/about-ministry/information-releases/responses-official-information-act-requests

Nāku noa, nā



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