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Hon Simeon Brown
Minister of Health

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Tēnā koe Minister Brown

Fluoridation of public water supplies

Rotorua Councillors, in a unanimous resolution of the Council Infrastructure and Environment Committee on 5 February 2025, directed the Chief Executive and Chair of that Committee to write to you and request that the directive to the Rotorua Lakes Council (RLC) for the compulsory fluoridation of drinking water be withdrawn until there has been a public enquiry into the latest scientific evidence on the safety and efficacy of water fluoridation reported back to Parliament. We ask that the matters included as an appendix to this letter be part of the consideration for withdrawing the directive.

Councillors also request that you direct the Director-General of Health to pause any actions to pursue any legal prosecutions (against either private individuals or as part of a body), fine or censure RLC or individuals employed by RLC, for not complying with the directive to introduce fluoride until an independent public inquiry is held into the health and environmental impacts and risks is completed, and its findings reported to Parliament.

Among the reasons that Councillors have made this request include developments on this matter in the United States.

Also, key issues that have been raised by Councillors include:

- 1) **Water Fluoridation Efficacy** – Is this being represented in a balanced manner considering the main benefits of fluoride are topical.
- 2) **Fluoride Safety Concerns** – The state of the science has progressed significantly since the original reports by the MoH were written, but there has been limited acknowledgement of this by the MoH (NTP Report 2024, Cochrane Review 2024, The USA Federal Court Case scientific research studies of high-quality, etc). Fluoride is a stressor to humans and there has been a demonstrated association between fluoride and a reduction in IQ in children, as well as increased bone fragility and hip fracture in post-menopausal women, just to name two.

There is growing scientific evidence of potential harm to vulnerable members of communities including unborn babies in the womb, bottle-fed babies and people who have various medical or nutritional issues. We are not treating the water - we are treating people. People are diverse and have not been directly engaged with to understand what it might mean for them personally.

The USA Federal Court agreed that there was “a preponderance of evidence that water fluoridation at the level of 0.7mg/L.... presents an unreasonable risk of injury to health of the environment...”

The MOH says the opposite:

“The NZBORA analysis, the updated review of scientific evidence, the additional information document and the above responses in this document show that the current preponderance of scientific evidence on community water fluoridation does not show any neurological harm at the levels of fluoride used for water fluoridation in New Zealand.”

- 3) **Dose Concerns** – What is a safe dose of fluoride? We are not treating water - we are treating people. There are multiple sources of fluoride in people’s lives in addition to water – there is no absolute control on a total maximum fluoride dose per individual. Additionally, each person has a unique age, gender, medical and nutritional profile that will influence how they respond to the “stressor” of fluoride.
- 4) **There are safer, targeted prevention options** – These options are preferable as the benefits of fluoride are mainly topical, and topical application means that fluoride does not have to be ingested by every person in the community to achieve better dental health outcomes. For example, the Child Smile toothbrushing in schools program has been evaluated as targeted and effective from over a decade of delivery.

Based on these concerns, we think that it is reasonable to ask if all has been done to address the increasing evidence of the harm fluoride can cause when ingested by an entire community over a period of time, and can we not take a more targeted approach to improving dental health outcomes in New Zealand?

Could I kindly request that you provide a response by **28 February** to allow sufficient time for staff to incorporate your response into formal advice to Council for the Council meeting on 26 March 2025.

We look forward to your response.

Ngā mihi



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APPENDIX

BACKGROUND INFORMATION

This information includes direct quotes from the Director-General of Health, the MoH and international research from reputable national and international bodies. It is concerning to see the discrepancies in interpretation of research around the safety and efficacy of fluoride. This is where there is a need to do a full enquiry.

Note: Any MOH and Director-General of Health comments/quotes from their documents are in blue text throughout this document.

1. WATER FLUORIDATION EFFICACY

- a) Is ingesting fluoride via water actually effective or is fluoride more effective and targeted via topical application?

The Director General of Health in the recent NZBORA Analysis quoted the Cochrane Report 2024:

“There was uncertainty about whether adding fluoride to water reduced tooth decay in children’s permanent teeth or decay on the surfaces of teeth.”

“adding fluoride to water may slightly increase the number of children who have tooth decayhowever, these results also included the possibility of little or no difference in tooth decay.” - Page 7 NZBORA analysis

MOH response to New Health Nov 2024: “The benefit of community water fluoridation is that there is a constant low level of fluoride in the saliva and plaque fluid creating topical application of fluoride on the teeth..” (no reference given)

Topical application – via toothpaste, dental treatments

The main benefits of fluoride come from topical application, that is, directly to the tooth surface rather than ingestion via water.

The evidence the MOH cited for mode of action of fluoride (the NHMRC 2016 Report) that cites Singh 2007 says:

“Review articles have credited the anticariogenic effect to be primarily topical in action.”

Health NZ Guidelines:

“To prevent dental caries, it was originally thought fluoride had to be ingested to increase intake of fluoride during tooth development....Today, it is understood that fluoride is a key protective factor that acts directly on the tooth’s surface.”

A representative of the CDC testified in the USA Federal Court case that **“fluoride’s predominant benefit to teeth comes from topical contact, not from ingestion”** – This was argued against by MOH representatives at our RLC workshop on Fluoridation.

Systemic ingestion – via fluoridated water

The benefits of systematic ingestion are largely by incorporation into the forming tooth before Crown Completion (i.e. up until about 6 years of age)

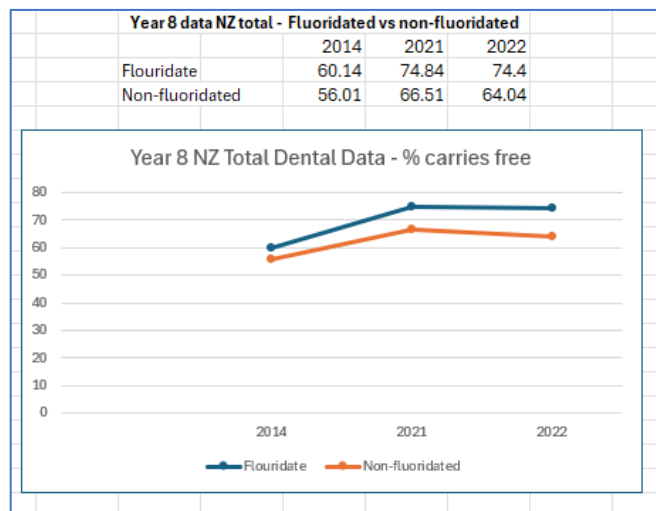
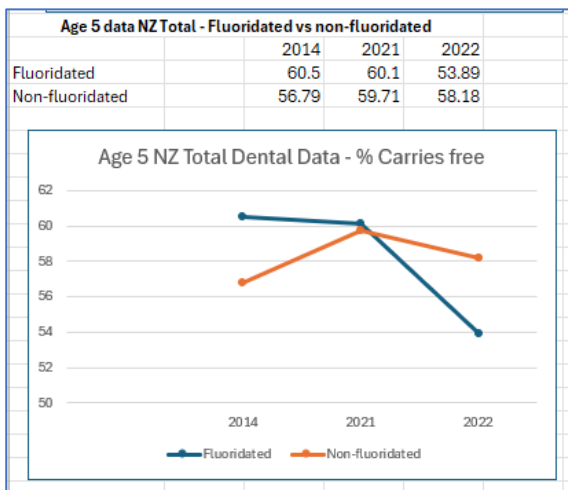
“The pre-eruptive effect of fluoride is dependent entirely on its ingestion during the development of the teeth which, in the case of permanent molars, occurs in the first 6 years of life.” – Singh 2007

This means that there is no benefit to older children or adults from ingesting fluoride through CWF because their teeth have already formed. The main benefit for these groups would be through topical application.

b) Dental data shows dental health improving regardless of CWF

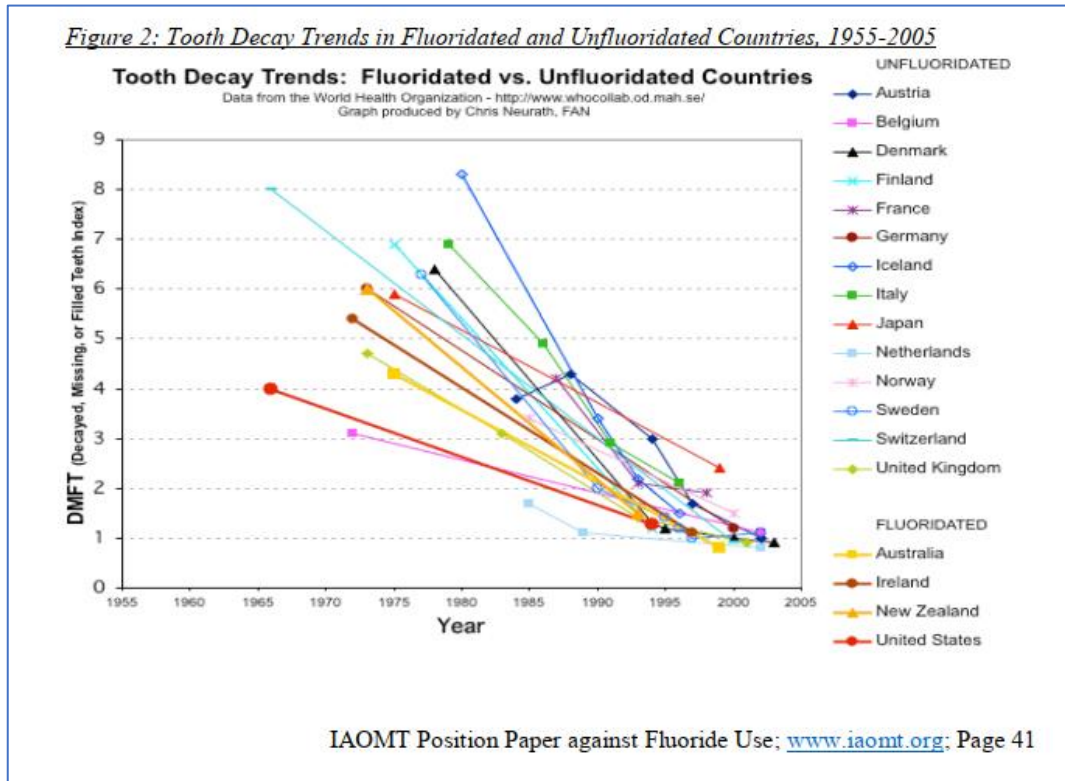
NZ MOH data and international data shows that tooth decay is reducing over time in BOTH fluoridated and unfluoridated communities.

Analysis of NZ MOH data shows the % of carries free teethe increasing over time below. Source: [Age 5 and Year 8 oral health data from the Community Oral Health Service | Ministry of Health NZ](#)



International data:

The graph shows WHO data for tooth decay trends. This demonstrates that tooth decay is reducing across countries across the world regardless of whether water is fluoridated or not.



c) Cochrane Report 2024 takes a more conservative view on the benefits of CWF

Cochrane is an international network that produces systemic reviews published in the Cochrane Library.

An updated Cochrane Review has found that the dental health benefits of adding fluoride to drinking water may be smaller now than before fluoride toothpaste was widely available

“When interpreting the evidence, it is important to think about the wider context and how society and health have changed over time. Most of the studies on water fluoridation are over 50 years old, before the availability of fluoride toothpaste. Contemporary studies give us a more relevant picture of what the benefits are now.” – Anne-Marie Glenny, Professor of Health Sciences Research at the University of Manchester

Source: [Water fluoridation less effective now than in past | Cochrane](#)

“There was uncertainty about whether adding fluoride to water reduced tooth decay in children’s permanent teeth or decay on the surfaces of teeth.”

“adding fluoride to water may slightly increase the number of children who have tooth decayhowever, these results also included the possibility of little or no difference in tooth decay.” – Source: Cochrane Report 2024

Full Cochrane Report:

cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010856.pub3/epdf/full

Plain language Summary of Cochrane Report:

cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010856.pub3/epdf/abstract

2. FLUORIDE SAFETY CONCERNS

Neurotoxicity

The MOH in their recent Evidence Review update states that:

*“There has been **no high-quality evidence published since those in 2014 and 2021 reports that suggest a causal link between fluoride exposure at the levels used in Aotearoa New Zealand for CWF and significant harm to health.**”*

But I would draw the Ministers attention to the research attached to this letter and the following overseas research:

Federal Court case in the USA September 2024 where the findings of the case after testimony from expert witnesses on both sides concluded”

*“**The plaintiffs have proven by a preponderance of evidence, that water fluoridation at the level of 0.7mg/L.... presents an unreasonable risk of injury to health of the environment...**” - USA Federal Court case Sept 2024 page 79*

“The court thus orders the Administrator to initiate rulemaking pursuant to subsection 6(a) of the Toxic Substances Control Act.” Page 79

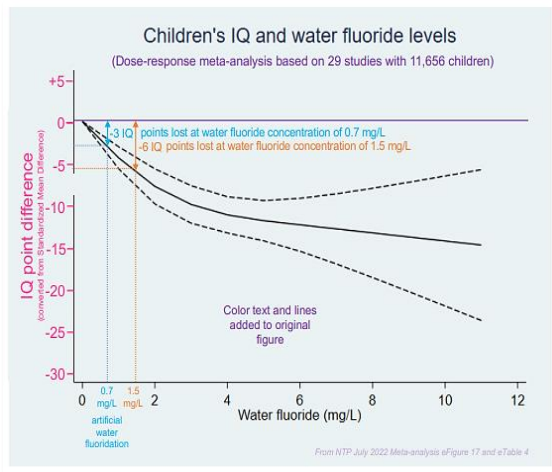
*“There is sufficient certainty in the data set regarding the association between fluoride and reduced IQ. Namely, **there is a robust body of evidence finding statistically significant adverse association between fluoride and IQ....**The scientific literature in the record provides a high level of certainty that a hazard is present; fluoride is associated with reduced IQ. **The qualitative evidence is superior.**” Page 78-79*

In direct contrast we have this statement from the MOH in response to New Health NZ:

*“The NZBORA analysis, the updated review of scientific evidence, the Additional information document and the above responses in this document **show that the current preponderance of scientific evidence on community water fluoridation does not show any neurological harm at the levels of fluoride used for water fluoridation in New Zealand.**” - Page 8 of New Health Response November 2024*

The National Toxicology Program Report (NTP) released in August 2024 identified 19 studies as being high-quality (i.e low risk of bias) and concluded:

*“**In summary, the high-quality studies (i.e. studies with low potential for bias) consistently demonstrate lower IQ scores with higher fluoride exposure** {(e.g. represented by populations whose total fluoride exposure approximates or exceeds the WHO Guidelines for drinking-water quality of 1.5mg/L of fluoride – WHO 2017)”*



Source: [Abstract for MGRAPH-08](#)

Federal Court case interrogated the NTP Report studies:

“To come to this conclusion: the NTP identified 19 studies as being high-quality (i.e. low risk of bias); all but one identified an association between fluoride and reduced IQ in children” page 19

The federal court found that the NTP Monograph was a high-quality report because:

“The findings of the NTP Monograph are properly afforded substantial weight. The NTP is headquartered within the NIEHS, which is one of the premier environmental health sciences research institutions in the world.... The EPA does not dispute this fact.....the EPA agreed the NTP Monograph is a high quality review, followed rules that have been developed by NTP for conducting systemic review, had a rigorous approach to assembling evidence, clearly defined rules for identifying and evaluating studies, and a well-defined protocol for drawing inferences” Page 37 Federal Court judgment Sep 2024

This report was released subsequent the MOH recent updated evidence review and is raising concerns around the safety of fluoride and its association with lowered IQ in children.

Another report was recently released since the MOH evidence review, also raises concerns “Fluoride Exposure and Children’s IQ Scores: A Systemic Review and Meta-Analysis (January 2025)

“This systematic review and meta-analysis found inverse associations and a dose-response association between fluoride measurements in urine and drinking water and children’s IQ across the large multi-country epidemiological literature. There were limited data and uncertainty in the dose-response association between fluoride exposure and children’s IQ when fluoride exposure was estimated by drinking water alone at concentrations less than 1.5 mg/L. These findings may inform future comprehensive public health risk-benefit assessments of fluoride exposures.”

Source: [Fluoride Exposure and Children’s IQ Scores: A Systemic Review and Meta-Analysis | Pediatrics | JAMA Pediatrics | JAMA Network](#)

MOH Additional Information November 2024: Makes Contradictory statements

“There is a possible association between concentrations of fluoride in drinking water above the upper limit used for CWF and mild neurodevelopmental delay.....at the current time there is no evidence that CWF causes neurodevelopmental delay.” - MOH Additiojnal Information on recent publications page 1

MoH quote the NTP report in their analysis and mention the level of 1.5mg/L as being associated with lower IQ.

US NTP Monograph comments by MOH: (pages 4 and 5)

“insufficient data to determine if the low fluoride level of 0.7mg/l currently recommended for US community water supplies has a negative effect on children’s IQ”

“ higher levels of fluoride exposure, such as drinking water containing more than 1.5mg/L, are associated with lower IQ in children.”

So, what is the safe dose of fluoride?

3. DOSE CONCERNS - WHAT IS THE SAFE DOSE OF FLUORIDE?

The dose that a person receives cannot be quantified by water fluoride concentration alone, due to diet, lifestyle and health variations. Accordingly, there are members of our community that are more vulnerable to the negative impacts that fluoride can have in the body.

There are several factors that the MOH need to give additional consideration to:

a) Other sources of fluoride

The Office of the Prime Minister’s Chief Science Advisor (OPMCSA) notes that other sources of fluoride have an additive effect on total fluoride intake:

“How much fluoride a person is exposed to depends on their diet, how much water they drink, the level of fluoride in the water supply, and their oral hygiene routines” Source: OPMCSA 2021 Report

Tea Drinkers – NZ has a high rate of black tea consumption which is very high in fluoride content. This will put many community members at risk of adverse effects of fluoride when added to the fluoride in the water supply. There are no warnings for tea drinkers to be aware of this fact.

“In 2017 a study looked at the fluoride level of black tea consumed in Aotearoa New Zealand. The study found that tea is an important source of fluoride consumption in Aotearoa New Zealand.” – Source: OPMCSA Report 2021

“..certain popular brands of BT can contribute 4.1–5.9 mg/day for moderate (3-4 mugs per day) and 8.8–14.7 mg/day for heavy tea drinkers (6–10 mugs per day), respectively. Thus, regular consumption of BT can exceed the AI and UL for F without taking cumulative F exposure from other dietary sources including food, water, alcoholic beverages, use of toothpaste or F mouthwash, and tobacco consumption.”

Source: [Black Tea Source, Production, and Consumption: Assessment of Health Risks of Fluoride Intake in New Zealand - Waugh - 2017 - Journal of Environmental and Public Health - Wiley Online Library](#)

b) Medical and nutritional status of each individual will affect the levels of fluoride

Those with some medical conditions do not excrete fluoride at the same rate so accumulate more in their bodies and are more exposed to risk. These include:

- kidney conditions
- Thyroid issues
- Those with low calcium or iodine levels
- Nutritional status - those with poor diet are more at risk (this may expose many in lower socio-economic communities to higher risk of negative effects)

c) Timing – the Age and body weight of each individual will influence exposure to fluoride

Early life exposure in the womb and infancy before 6 months of age is the most damaging as the blood-brain-barrier is not fully formed at this age and fluoride can directly enter the brain tissue and disrupt development.

“Some groups may be exposed to higher levels of fluoride than what is necessary to gain oral health benefits, in particular formula-fed infants living in areas with fluoridated water supplies.” – OPMCSA

- i. **Unborn babies/pregnant mums** – see high-quality birth cohort studies that were examined in the Federal Court Case: in Canada- Green (2019), Till (2020),

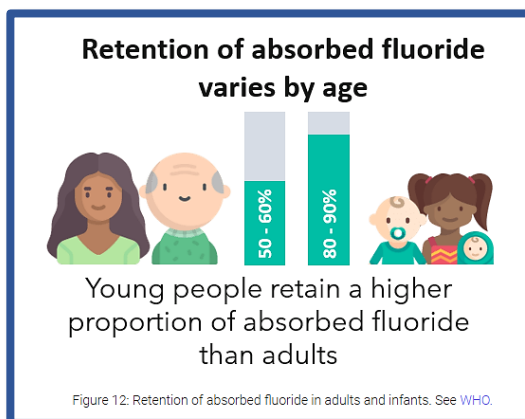
In Mexico- Bashash (2017 and 2018), Goodman 2022

– everyone in the trial agreed that these are “high quality studies”, including EPA specialists. The EPA declined to challenge these studies as high quality.

ii. **Bottle-fed babies**

“Formula-fed babies remain a subset of the population that is most at risk of consuming higher levels of fluoride relative to their body size.” – OPMCSA

iii. **Children accumulate more fluoride in their bodies than adults do**



Source: OPMCSA Report 2021

d) Safety Margins

MOH – Additional Information Nov 2024, states that we do not need to worry about a margin of safety:

“Currently there is no evidence of a causal relationship between fluoride and neurodevelopmental delay, nor is there a proven mechanism by which this could occur. Therefore, the issue of a margin of error in the context of CWF does not arise.”

The USA Environmental Protection Agency uses a factor of TEN between the LOAEL and the dose used for consumption. Dr Stanley Barone, the EPA risk assessment scientist, stated in his deposition to the Federal Court case that a margin of safety of 10 is needed to protect against fluoride neurotoxicity.

4. THERE ARE SAFER, TARGETED ALTERNATIVE PREVENTIVE OPTIONS

The Precautionary Principle states that when there is scientific evidence on both sides of an issue, then the precautionary principle should apply:

1. **Is the risk of harm possible?** -yes, reduction in IQ of children
2. **Is the evidence of harm supported by a number of peer-reviewed, published studies?** -yes, as above plus subsequent studies (Malin et al 2024, latest systemic review from NTP August 2024, Federal Cort Case, JAMA Pediatrics Jan 2025)
3. **Is the potential for harm serious?** -yes, in particular neurotoxicity to children at a level that is unreasonably close to the dosing rate in water supplies. (see Federal Court case findings – factor of TEN should be used to assess risk of harm))
4. **Are the effects reversible?** – many are not particularly in unborn children and bottle fed babies where the blood brain barrier is not fully formed.
5. **Is the public being fully informed of the potential health risks?** – questionable
6. **Does the proposed intervention achieve the desired benefit?** – questionable, topical application is the most effective way to deliver benefits
7. **How significant are the consequences if the practice is halted?** -the Cochrane Report cannot demonstrate that there will be any such effects
8. **Are there alternatives?** -yes, targeted toothbrushing programs, health/dental education, reduction in sugary foods

These options include toothbrushing programs in schools such as the **Child Smile Program in Scotland**: [Childsmile – Improving the oral health of children in Scotland](#)

The NDIP findings for P1 and P7 children (Figure 2) have shown a major and continuing improvement in oral health from the commencement of the national tooth-brushing programme in 2001”

Source: Evaluation Report [Child Smile: The Child Oral Health Improvement Programme in Scotland](#)