QUESTIONS FROM CR INTEMANN, Port Macquarie-Hastings Councillor
20 September 2021

TO the Hon Leslie Williams Member for Port Macquarie
and Ms Elizabeth Koff, Secretary of the NSW Department of Health.

These questions have been composed and sent in response to an invitation to do so by Leslie Williams MP.

Health and safety first
A prime objective of the NSW Department of Health regarding water fluoridation should be the health of consumers and genuine safe benefit to them?

Q 1: Do you agree, and if not why not?

Water fluoridation is forced by law onto whole communities, with no means of exit offered. Ethically therefore, special precaution should be taken by fluoridating authorities to ensure that fluoridation is of actual benefit to the consumer, and does not represent a significant risk to consumer health.

Q 2: Do you agree, and if not why not?

Fluorine is not biologically benign. Rather, it is "the most electronegative element, [and] is much more reactive than other elements. … Fluorine reacts virtually with every other element, including the helium group gases. … Because fluorine forms stable bonds, its compounds can be both stable and extremely reactive." [Ref: Kirk Othner, Encyclopaedia of Chemical Technology, 1-8, 2000, or indeed any decent chemistry text].

Fluorine has no normal role or function in the body and, because of its extreme reactivity, can logically be expected to disrupt normal biological and biochemical processes, thereby risking bodily dysfunction. Fluorine (and its fluoride compounds) is frequently referred to as a 'protoplasmic poison', or general poison of cells (Reference for example, Journal of Toxicology, Volume 204, Issues 2–3, 15 November 2004, Pages 219-228') https://www.sciencedirect.com/science/article/abs/pii/S0300483X04003889

Q 3: In view of those knowable biochemical risks from fluoride consumption, what precautionary measures has NSW Health taken to (i) study and assess the potential for adverse health effects from fluoride consumption and (ii) ensure the safety of lifetime fluoride consumption from fluoridation, for all sectors of the community?

Fluoridation chemicals are toxic, scheduled poison. The assessment of biological toxicity depends on knowing the exact dose consumed in relation to detected effects.

Q 4: What exact actions have NSW Health undertaken (i) to measure (or have measured) daily consumer intake of fluoridation chemicals under fluoridation, and (ii) to monitor any adverse effects?

Q 5: What is NSW Health's adopted oral reference dose for safe daily exposure to fluoridation chemicals for a lifetime? On what data and endpoints was that reference dose calculated, and where is that information recorded?

Q 6: In calculating the oral reference dose, what safety factor was applied to account for variability in fluoride sensitivity across various sectors of the population (e.g. very young, iodine deficient, kidney or thyroid dysfunctional, high volume consumers etc)?

Q 7: If no direct action has been taken to assess health risks based on actual consumption, by what other means has NSW Health sought to assure itself of the safety of fluoride consumption and fluoridation?

NHMRC operating without safety data

The National Health and Medical Research Council (NHMRC) is Australia's primary source of advice on fluoridation health safety, and has since 1953 endorsed fluoridation as unconditionally safe, offering no health warnings.

However, NHMRC appears **never** to have taken steps to actually assess the safety or otherwise of fluoride consumption and fluoridation.

Specifically:

- An examination of all fluoridation projects funded by NHMRC since 2000 reveals **no** projects funded by NHMRC except those designed to demonstrate the benefits of fluoridation, without ever investigating risks to general health.

- NHMRC funds projects based on requests received from research organisations and does not fund study projects from its own initiative for the purpose of, for instance, fulfilling its duty of care to the nation by proactively assessing whether or not fluoridation is actually safe.

- The NHMRC's own fluoridation reports of 1991 and 1999, make extensive recommendations as to the need for general health safety studies (Attachment 1).

- A letter from NHMRC to NSW Health in 2005 states that all those previously recommended studies were cancelled in 2002 "due to insufficient resources," with no intention to recommence (NHMRC to NSW Health, 24 February 2005, Attachment 2, page 1, 3rd paragraph).

- A 2016 letter from NHMRC to Port Macquarie-Hastings Council confirms that no health safety studies have ever been funded by NHMRC, saying: "Apart from this research on dental fluorosis, there have been no projects funded by NHMRC prior to or after 2000 that investigated potential negative effects from fluoride or fluoridation." (NHMRC to PMHC, 29 April 2016, Attachment 3, page 1, 3rd paragraph).

There is no other reasonable conclusion than that NHMRC have – in the entire past 70 years of fluoridation - never actively or systematically investigated the potential negative effects of fluoride or fluoridation.

Without doubt then, NHMRC's safety assurances about fluoridation cannot be reasonably relied upon due to their self-admitted failure ever to fund any health safety studies, even those its own reviews had recommended.

Q 8: Had you been previously aware that NHMRC has been endorsing the safety of fluoridation without ever having funded a single project designed to assess fluoridation health safety?

Q 9: Being now aware that NHMRC has never funded any fluoridation health safety studies, do you accept that therefore NHMRC cannot 'reasonably' be relied upon for evidence-based advice on the safety or not of fluoride consumption and fluoridation? If not why not?

Q 10: In the absence of any reason to trust NHMRC for fluoridation safety advice, will you now cease to support and enable water fluoridation? If not why not?

The need for proper assessments

Q 11: Will you please inquire and provide the following if any such exist:

1. The results of any chronic toxicity studies on which NSW Health relies, that investigate the impact of long-term ingestion of fluoride through drinking water on the prevalence of: (i) dental fluorosis; (ii) skeletal fluorosis; (iii) hip fractures; (iv) arthritic pain, and (v) fluoride hypersensitivity reactions.

2. The results of any randomised, double-blind, controlled trials on the alleged effectiveness of water fluoridation in substantially reducing dental caries/tooth decay in any age group.

3. Any published scientific evidence showing that the significant mechanisms of action by fluoride in reducing tooth decay are 'systemic', requiring actual consumption, as opposed to 'topical', by external application.

4. The results of any published studies or toxicological data or assessments designed to investigate the safety or otherwise of consuming the fluoridation chemicals: hydrofluorosilicic acid (H2SiF6) or sodium silicofluoride (Na2SiF6).

5. The results of any published toxicological dose-response risk assessments on human health from fetal life until the end of life, using measures of actual daily fluoride intake from any source (whether from fluoridated water or from food, beverages, medications, air pollution, pesticides etc.)?

6. The results of any studies designed to measure and compare daily fluoride intake under fluoridated or non-fluoridated conditions?

Health safety – published evidence ignored by NHMRC

NHMRC's fluoridation reports of 2006 and 2017 have deemed fluoridation to be unconditionally safe for all people. However, those reports were based on incomplete evidence, namely due to NHMRC **actively** excluding or dismissing high quality published research showing evidence of risks to health from fluoride and fluoridation that were actually available to NHMRC.

The by-passed studies are identified and described in Attachment 4. All are either higher quality single-studies, or meta-analyses of many separate studies which, had they been considered by NHMRC, would have offered significantly reliable evidence of potential risk to health from fluoridation. Had those studies been considered, it would have been unconscionable for NHMRC to conclude no risk to human health from fluoride and fluoridation.

Q 12: In view of the now readily-knowable potential risk from fluoride consumption under fluoridation, in many respects ignored by NHMRC, what action has or will NSW Health take to independently assess the potential health risks from fluoride consumption under fluoridation?

Q 13: In view of the now readily-knowable potential risks from fluoride consumption under fluoridation, on what grounds can NSW Health guarantee that fluoridated water is safe for all sectors of the population and is fit for purpose?

Q 14: To where or on whom in the commonwealth does the liability fall should fluoridated water be found not to be fit for purpose or safe to consume for everyone for a lifetime?
Does the liability fall to NHMRC for promoting fluoridation since 1953 as safe for all, despite never having funded any projects to investigate the safety or otherwise?
Does the liability in NSW fall to NSW Health for requiring councils to continue fluoridation once started, without offering any escape clause by which to opt out? Please advise.

Q 15: Do you agree it is reasonable for consumers to seek legal assurance of fluoridation safety, and a means to compensation in the event of harm from fluoridation? If not why not?

Q 16: Due to their fluoride sensitivity, or to bodily dysfunction such as of kidney or thyroid etc., some people already find themselves adversely affected by exposure to fluoridated water. To whom should those people apply for compensation for the cost of needing to install whole-of-house water filtration to protect themselves from the experienced adverse effects of state-imposed community-wide fluoridation?

Damage to the bones

The potential for adverse effects of fluoride on our skeletal system was acknowledged nearly 90 years ago, and since then multiple studies have confirmed that potential.[1]

NHMRC's 1991 fluoridation report, *The Effectiveness of Water Fluoridation*, appropriately recommended a precautionary approach. Namely that measurements of fluoride levels in bone to be collected at specific autopsies, so as to monitor fluoride accumulation if any, and possible damage being done from fluoride ingestion over time. (See Attachment 1 for the recommendation). That action was deemed especially important for certain population sectors, such as high-volume water consumers, or whose renal function may be impaired. Thirty years later, despite the original strong recommendation, and despite continuing emerging evidence of fluoride's damage to bones, no studies of this nature have been conducted by NHMRC.

New studies regularly emerge concerning the association between fluoride ingestion and bone health. Most recently, a Swedish study, Helte et al (2021),[2] reported at least 50 percent higher rates of hip bone fractures in post-menopausal women who consumed drinking water containing up to 1 mg/L of fluoride.

Helte 2021 concerns a large, high-quality, longitudinal study with a cohort in excess of 4,000 older Swedish women and extended for 13 years from 2004 to 2017. The largest source of exposure was from naturally occurring fluoride in drinking water, at concentrations at or below 1 mg/L, and therefore within the range of Australia's fluoride concentration under water fluoridation. Their total exposures also fell within the same range as women living in fluoridated parts of Australia.

The Helte finding of more than 50% higher rates of hip bone fracture - in conditions basically mirroring NSW levels of fluoridation - should be cause for grave concern.

Q 17: With decades of substantial scientific evidence demonstrating fluoride's damage to our bones over time, do you accept or condone NHMRC's failure to implement its own relevant recommendations to monitor the bone-fluoride relationship?

If yes, please explain why you think bone health should be considered an acceptable cost in exchange for the mere possibility of marginally improved dental health in children, the benefit of which has never been demonstrated to last into adulthood?

Bioaccumulation

NHMRC steadfastly declines to acknowledge that, like lead, ingested fluoride is only partly excreted, and builds up and accumulates in the body. A question to NHMRC would confirm that, and I would be very interested if they now answer differently.

There is, however, strong evidence that fluoride does accumulate. References include:

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1. "Fluoride in water and bone fracture", Michael Connett – Fluoride Alert 2012; https://fluoridealert.org/studies/bone12/ and "The relationship between, bone density and bone strength", Michael Connett – Fluoride Alert April 2012; https://fluoridealert.org/studies/bone04/
2. Helte E, et al "Fluoride in Drinking Water, Diet, and Urine in Relation to Bone Mineral Density and Fracture Incidence in Postmenopausal Women," published 6 April 2021, in Environmental Health perspectives. https://ehp.niehs.nih.gov/doi/10.1289/EHP7404

European Food Safety (EFSA) Panel on Dietetic Products, Nutrition and Allergies. Scientific opinion on Dietary Reference Values for fluoride. 2013.

"Absorbed fluoride which is not deposited in calcified tissue is mainly excreted via the kidney (around 60% in adults, 45% in children) (Villa et al., 2010). The percentage of absorbed fluoride excreted via the kidney in infants and young children can be as low as 10-20 % because of a higher capacity of bone to accumulate fluoride." (Section 2.3.5 on Elimination (page 13))

National Research Council. Fluoride in Drinking Water: A Scientific Review of EPA's Standards. Washington, DC: The National Academies Press. 2006.

"Fluoride is readily incorporated into the crystalline structure of bone and will accumulate over time." (p 4)

"The models estimated that bone fluoride concentrations resulting from lifetime exposure to fluoride in drinking water at 2 mg/L (4,000 to 5,000 mg/kg ash) or 4 mg/L (10,000 to 12,000 mg/kg ash) fall within or exceed the ranges historically associated with stage II and stage III skeletal fluorosis (4,300 to 9,200 mg/kg ash and 4,200 to 12,700 mg/kg ash, respectively)." (p 5)

"Chronic dosing leads to accumulation in bone and plasma" (p 76)

"Bone fluoride concentrations increase with both magnitude and length of exposure." (p 82)

"Hence, it is reasonable that 99% of the fluoride in humans resides in bone and the whole body half-life, once in bone, is approximately 20 years (see Chapter 3 for more discussion of pharmacokinetic models)." (p 108)

Scientific Committee on Health and Environmental Risks (SCHER). Opinion on critical review of any new evidence on the hazard profile, health effects, and human exposure to fluoride and the fluoridating agents of drinking water. May 2011.

"Concerns regarding the potential carcinogenic effect of fluoride have been focused on bone cancer due to the known accumulation of fluoride in bones. Osteosarcoma is a rare form of cancer making it difficult to analyse risk factors using epidemiology." (p 16)

Whitford GM (1996). The metabolism and toxicity of fluoride. Monograph Oral Science. 1996.

"The quantitatively important fates of absorbed fluoride are uptake by calcified tissues and excretion in the urine. Roughly 50% of an absorbed amount will be excreted in the urine during the following 24h while most of the remainder will become associated with calcified tissue. These fractions, however, can vary widely depending on several variables as will be discussed later." (p 1)

"The peak level usually occurs during the first hour after ingestion. After the bulk of the dose has been absorbed, the plasma levels show a rapid decline due to the continuing uptake by bone and urinary excretion." (p 3)

Fluoride accumulates in bodies at different rates in different people and at different times, based on bodily condition and rates of ingestion. The phenomenon has a long research history.

Fluoride accumulation is biologically significant because of the implications for physiological dysfunction in consequence. Those known to be most susceptible to fluoride accumulation include: the young, the elderly, diabetics, people with impaired kidney function, those with pre-diabetic or pre-renal-function impairment, those with poor nutritional status or who suffer from malnutrition (e.g. deficient in iodine, magnesium,

vitamin C, vitamin D), those with heightened sensitivity to fluoride, and high level fluoridated water consumers, such as sportspeople, outdoor labourers, the heat affected.

Q 18: Does it concern you that NHMRC appears not to recognise that fluoride accumulates in the body, thereby causing various bodily dysfunctions?

Q 19: Does it concern you how important bodily accumulation must be over a lifetime consumption of fluoride from fluoridation, and therefore how importantly misleading and incomplete NHMRC's fluoridation health safety advice must be because NHMRC ignores that factor?

DENTAL ISSUES - Decay reduction

Fluoridation is endorsed, promoted and compelled on the promise that it helps reduce tooth decay, especially for lower socio-economic groups.

However, the claim of dental benefit now fails on several fronts, based on the latest or emergent evidence.

Cochrane review 2015 and other dental studies

The Cochrane Review 2015 is a meta-analysis of relevant fluoridation dental studies undertaken globally since the advent of fluoridation many decades ago. It is generally regarded as being of high quality and reliable and representing the best available evidence of the status of fluoridation regarding its dental effects.

Although the Cochrane Review is often cited as supporting fluoridation, an actual reading of the review shows otherwise.

In its Main and Key Findings, Cochrane 2015 reports that:

- Decay reduction from fluoridation appears to be in the order of 1-2 cavities per child on average, but the quality of evidence is low and the few available fair-quality studies are old, being conducted before wide-spread tooth brushing and use of toothpaste;
- There is no reliable evidence of any dental benefit into adulthood;
- There is no reliable evidence of any benefit to lower socio-economic groups, and
- Drinking fluoridated water is associated with damage to teeth in the form of dental fluorosis, and being of more than merely cosmetic concern in around 10% of children.

Attachment 5 contains the first six-pages direct from the Cochrane Review, including its Main and Key findings, accompanied by some relevant commentary by me.

Attachment 6 provides a wide range of other sources of fluoridation dental evidence from large scale studies, which collectively report that on average fluoridation delivers no better than one cavity saving per child.

All the studies have weaknesses, deriving from their essentially epidemiological nature, and inability to account for various confounding factors. But the same may be said of every dental study purporting to demonstrate dental benefit from fluoridation. However, the weight of evidence especially from the Cochrane Review 2015 but also many other studies and statistics, now falls clearly on the side indicating minimal to no dental benefit from fluoridation.

Q 20: Would you continue to support forced fluoridation if it was shown to you by weight of evidence that there is no demonstrable correlation between water fluoridation and reduced dental decay across life stages? If yes, could you please explain why?

Q 21: Taking into account the studies and information provided here, regarding the lack of significant proven dental benefit from fluoridation, could you please advise on what evidential and/or explanatory basis NSW Health could justifiably continue to force lifelong fluoridation on entire communities?

Alternatives

Sugar consumption without accompanying oral hygiene is more likely the predominant cause of dental decay. The vast majority of countries do not fluoridate, but manage oral care in a variety of other ways. Scotland, for instance, has had remarkable success with its early school toothbrushing and oral hygiene program: Child Smiles – Caring for Smiles program.

There are other ways than fluoridation to ensure good oral health, especially as it is now well recognised that IF fluoride has a beneficial effect on teeth then the mechanism for that effect is fluoride applied topically, not systemically ingested complete with all the adverse risks to health that accompany fluoride ingestion.

Q 22: Would you support a national dental insurance program for Australia, like dental Medicare?

Thank you