

Dear Taoiseach, Minister for Health and distinguished Cabinet Ministers

This communication addresses the second and substantive point put forward as evidence to support water fluoridation by Minister For Health, Dr. James Reilly T.D in response to representations on my behalf by Minister for Arts, Heritage and Gaeltacht Affairs, Mr. Jimmy Deenihan T.D. In itself the reply is quite specific as the Minister provides certain scientific facts that are clearly inaccurate, misleading and misinformed. The Minister for Health in his letter of reply addresses one of the more critical issues regarding water fluoridation, that is dietary exposure of the population to fluoride.

In reply what this communication demonstrates is that the most sensitive sector of Irish society, namely new born babies, are grossly over-exposed to fluoride when they are bottle fed formula milk made up with fluoridated water. It further demonstrates that while an upper safety limit exists for adults, no safety standard exists to protect babies from the toxic effects of fluoride at this most sensitive time in their development. Finally it demonstrates that large sectors of society exceed the maximum upper tolerable limit for fluoride on a daily basis and illustrates how artificial fluoridation of drinking water is a significant contributor to this rising health concern.

The Minister for Health states that the average exposure of Irish consumers to fluoride from food represents 7.5% of the safe Upper Limit (UL) for **FLUORIDE** as established by the **European Food Safety Authority**. The Minister goes on to clarify that if exposure to fluoride from drinking water is included (representing the total fluoride dietary intake from food and water combined) it represents 23.9% of the UL on average. **These statements are entirely incorrect.**

The Minister notes that the EFSA have established a safe upper limit for fluoride intake from all food sources, including water, for adults is 120ug per kilogram of body weight per day equal to 7mg of fluoride per day. This statement is correct.

It follows from the Ministers calculations that the total dietary intake for fluoride for adults is on average 1.65 mg per day from all dietary sources. **This statement is also incorrect.**

This level of fluoride would be the same as what an individual would consume in a single cup of tea using fluoridated water and nothing else. Irish adults are the worlds largest consumers of tea, drinking on average between 3 and 6 cups of tea per day. The dietary intake from tea as a beverage on its own would be in the region of 5 mg of fluoride per day.

In support of the Minister views he makes reference to a study published by the EFSA and another by the Food Safety Authority of Ireland (FSAI).

It is important to highlight that regarding fluoride the EFSA document referenced by the Minister stated the following; “There is no convincing evidence that health and development of humans depend on the intake of fluoride”.

Importantly in regard to establishing upper dietary limits for the most sensitive sector of society the EFSA did not establish an UL for infants.

Furthermore, **the EFSA did not include nor examine the dietary sources of fluoride** from fluoride containing drugs. Yet remarkable the EFSA stated “**that their potential contribution to the total daily intake, however, has to be taken into account in the risk assessment of fluoride. This contribution can amount up to 70% of the estimated reasonable maximum dietary exposure value in both infants and young children.**”

The EFSA considered that the upper limit (UL) for fluoride is 0.1 mg fluoride/kg/day in children aged 1-8 years. This is equivalent to 1.5 and 2.5 mg fluoride per day in children aged 1-3 years and 4-8 years, respectively.¹

As already noted the EFSA did not establish an UL for infants but observed that infants who consume powdered formula milk **will exceed the maximum limit set for infant formula established by the EU Scientific Committee on Food** if water containing more than 0.7 mg/L is used for its preparation.

In Ireland it is estimated that up to 97% of infants consume powdered formula at 6 months of age as a significant majority of mothers in Ireland do not breast-feed.

The Minister is aware that the upper limit for fluoridated drinking water in Ireland is 0.8mg/L.

The EU Scientific Committee on Food has recommended **a maximum fluoride** level of 0.6-0.7 mg/L in infant formula and follow on formula, equivalent to an intake of about 0.1 mg/kg body weight per day in infants during the first six months of life (body weight 5 kg).

At current fluoride levels in drinking water in Ireland all bottle fed babies will exceed the maximum fluoride level recommended level if fluoridated tap water is used to constitute the formula.

It is a scientific fact that boiling water increases the concentration of fluoride, contributing to an further exceedance of the safety standard.

The EFSA note with regard to the fluoride content of drinking water, that if formulas were prepared with water containing **0.3 mg fluoride/L** and a 5-kg infant drinks 800 mL, fluoride intakes of **60 μ g fluoride/kg body weight/day** would result.

¹ Opinion of the Scientific Panel on Dietetic Products, Nutrition and Allergies (NDA) on a request from the Commission related to the Tolerable Upper Intake Level of Fluoride, EFSA Journal doi:10.2903/j.efsa.2005.192

It is important to be aware that the upper limit for adults is 120 μ g fluoride/kg body weight/day.

Alarmingly the EFSA highlight that the use of fluoridated drinking water would considerably increase the fluoride intake **threefold**. This means that the fluoride intake would be approximately **180 μ g fluoride/kg body weight/day**.

This is clearly unsafe and **significantly in excess of the maximum limit as set for adults in the population. To allow and tolerate such a unsafe practice to occur should not be tolerated in any circumstances especially when a babies kidneys and organs are not yet fully developed.**

There are serious immediate and long-term safety concerns for public health that the fluoride upper tolerable intake level, a value established in Europe is exceeded for all babies by exposure to fluoridated water with formula milk.

Given these basic and undeniably facts it is extremely worrying that the Minister for Health would suggest that the fluoride dietary intake of Irish consumers is just 7% of the safe upper limit. This is especially so when the EFSA have highlighted that bottle fed infants will be exposed to fluoride at levels in excess of 33% above the upper limit set for adults.

This has serious implications also for the Food Safety Authority of Ireland (FSAI) who are legally obliged to base their opinions on scientific grounds and to develop food standards on the basis of the best, most up-to-date scientific advice available for the protection of all consumers.

Considering that this information is readily available, published on the European Commissions website and noting that this information was previously provided to the Minister, the Government of Ireland and its scientific and medical authorities in my comprehensive report dated February 2012, the lack of any progress in establishing appropriate safety standards to protect the most vulnerable in our society to fluoride overexposure is a cause of great concern.

The upper tolerable intake levels of fluoride established in Europe amount to 1.5 mg/day for 1–3 year old children, 2.5 mg/day for 4–8 year old children, 5 mg/day for 9–15 year old children and 7 mg/day for adults (\geq 15 year old).

The maximum fluoride upper limit for adults for all dietary sources has been established to reduce the risk of nonvertebral bone fractures in postmenopausal women who have been found to a high risk group to long term exposure to fluoride. It does not take into account the possibility of an individual being intolerant or hypersensitive to fluoride nor does it apply any safety standards for sensitive subgroups of the population such as individuals with diabetes or thyroid disorders. The EFSA in itself noted that severe clinical symptoms were observed in 22% of children on acute single dose ingestion of fluoride amounts of about one mg fluoride/kg body weight. This means that a significant proportion of Irish infants may have medical ailments that relate directly to exposure to fluoride.

These UL for fluoride can readily and easily be exceeded especially in communities where drinking water is artificially fluoridated as well as in non fluoridated communities, when one considers the potential total fluoride exposure for all dietary sources. For example the EFSA found that for children under 4 years of age fluoride from toothpaste alone without any other dietary sources was found to contribute up to one third to one half of total daily fluoride intakes. This figure may be much higher for children with Autism or Downs syndrome.

The EFSA have noted that fluoride containing drugs can amount up to 70% of the estimated reasonable maximum dietary exposure value in both infants and young children from this singly source alone.

The EFSA also documented that if fluoridated water was drunk and used for the preparation of food and tea (1-2 L of water/day; 500 mL of tea (2 cups) with a fluoride concentration of 5 mg/L) 3.5 to 4.0 mg fluoride would be added to the daily dietary intake.

To put this in context 2 cups of tea per day made from fluoridated water would amount to half the total upper fluoride daily dietary intake for an adult. It would also exceed the limit established for children under 8 years of age. It is important to remember however that the UL for fluoride applies to intake from water, beverages, foodstuffs, dental health products and fluoride tablets for caries prevention. It also must include contribution from fluoride drugs. Examples of other dietary sources of fluoride include alcoholic drinks such as Guinness brewed in Ireland which contains the same level of fluoride as drinking water. This has been confirmed in writing by Diageo Ireland. One pint of Guinness will therefore contain 0.4 mg/L fluoride. The fluoride content of diet coke is 1.12mg/l, refined sugar contains up to 13mg/kg fluoride, chicken and chicken broth may contain 6 mg/L, breakfast cereals 0.7mg/kg, fruits and fruits 2.34mg/kg, soups 1.06 mg/L, coffee 1.08mg/L, juice drinks 0.8mg/L, wine 2mg/L, canned fish such as sardines will contain 61mg/kg, mackerel may contain 26 mg/kg fluoride and tea can contain in excess of 5 mg/L depending on if its loose tea or packaged tea and how long it is brewed. Another major source of fluoride is tobacco.

All foodstuffs will likely have some level of fluoride found naturally in the environment. Fluoride compounds also accumulate in foodstuffs through the use of fluoridated fertilisers, pesticides and herbicides as well as landspreading of sewage sludge biosolids. **What is important to note however is that the EFSA determined that use of fluoridated water will increase the fluoride content of all food by at least 0.5 mg/kg, if not more.**

This clearly shows that that artificial fluoridation of drinking water significantly contributes to increasing the risk of overexposure of the population to fluoride and the upper maximum dietary level for fluoride cannot be controlled for large sectors of the population especially those dependent on medication or with specific medical or nutritional needs.

For many in society by continuing with artificial fluoridation extreme fluoride exposure scenarios are possible and not completely unrealistic. On that point the EFSA noted that in addition to the risk of dental or skeletal fluorosis gastrointestinal symptoms like nausea, vomiting, anorexia and diarrhoea may occur with excessive fluoride intakes as well as increased risk of bone fractures.

Yours sincerely

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