

**August 15, 2014, letter from Hardy Limeback DDS, PhD,
to the Israeli Minister of Health, Yael German**

Dear Minister German:

I have been following the debate on fluoridation in Israel for some time.

<http://www.jpost.com/Health-and-Science/Backlash-against-Health-Minister-Yael-German-for-her-decision-to-stop-fluoridation-360188>

I served 3.5 years on the US National Academies of Sciences Subcommittee on Fluoride in Drinking Water.

The NAS is sometimes referred to as the 'Supreme Court of Science', an organization that sets up unbiased (or balanced) committees to review scientific issues of concern to Americans. The committee on which I served examined the health effects of fluoride in drinking water. Our report, published March 22, 2006, can be found online at http://www.nap.edu/catalog.php?record_id=11571

Our committee was funded by the US EPA – we were charged NOT to examine the **benefits** of fluoridation but we certainly reviewed all relevant literature on the **toxicity** of fluoride, including those at low levels of intake, including the toxic side effects of fluoridation.

The EPA has still not made a ruling on the maximum contaminant level goal (MCLG) for fluoride, while the Department of Human Health Services, being concerned about the dental fluorosis that fluoridation is causing, has lowered its recommendation for levels of fluoride in drinking water to 0.7 mg/L (ppm). The American Dental Association and the Center for Disease Control in the US both agreed that fluoridated tap water should not be used to make up infant formula, since that increases the risk of dental fluorosis. To me, dental fluorosis is a biomarker for fluoride poisoning, not just of developing teeth but of all mineralizing tissues. Health Canada, taking the recommendation of only profluoridation experts, continues to recommend fluoridation (now at a lowered level of 0.7 ppm) despite mounting evidence that the optimum therapeutic level of fluoride in drinking water, if there is even any benefit at all, is at 0.35 ppm or less.

I have personally conducted years of funded research at the University of Toronto on the topic of fluorosis (fluoride poisoning) and bone effects of fluoride intake. A bone study, for which we received national funding, comparing hipbones of people who live in Toronto (fluoridated since 1963) to the bones of people from Montreal (Montreal has never been fluoridated), suggested disturbing negative changes in the bone quality of Torontonians. This is not something that was supposed to happen. Fluoridation was only supposed to affect teeth.

Since we studied a cross section of the population as they were selected for hip replacement, we were unable to examine only those people who were exposed to fluoridation for a lifetime. If we had been able to do this, we would have seen a much greater negative effect of fluoride since fluoride accumulates with age (our study confirmed that).

The NAS committee examined the literature on the effects of fluoride on bone up until 2006. Since that time there have been more studies to confirm the link between fluoridation and bone changes, as well as a link to bone cancer. Our Toronto vs Montreal study was not included in the 2006 review by the US National Academies of Sciences because it only just got published in 2010.

I am also the co-author of studies that show that too much fluoride accumulation in the dentin of teeth (the tissue that supports enamel) causes its properties to change as well. I suspect that a lifetime of

fluoride accumulation on teeth causes them to be more brittle and fracture more easily. This effect of fluoridation has never been examined.

As a practicing dentist, I have been diagnosing and treating patients with dental fluorosis for over 30 years. My research on dental fluorosis (confirmed by the studies reported in the 2006 NRC report as well as the York review) show fluoridation significantly increases the numbers of patients seeking expensive cosmetic repairs. No one in public health has ever accounted for the added costs of treating dental fluorosis when considering the cost-benefit ratio of fluoridation.

Our 2006 NRC (NAS) report also concluded that there is a likelihood that fluoride can promote bone cancer. On page 336 it is stated *Fluoride appears to have the potential to initiate or promote cancers, particularly of the bone, but the evidence to date is tentative and mixed (Tables 10-4 and 10-5)*. This alone should force the EPA to set a fluoride maximum contaminant level goal for fluoride in drinking water at ZERO (as it did for arsenic). The EPA has not yet made a decision as to fluoride's carcinogenicity. In addition we now know that fluoride is neurotoxic and that children with noticeable fluorosis have lowered IQs.

I have looked at this from all angles and I have to conclude that fluoridated cities would save money on fluoridation costs, parents would save on costly dental bills treating dental fluorosis, dental decay rates would remain unchanged or even continue to decline (as has been demonstrated in many modern fluoridation cessation studies) and the health of city residents would improve when industrial waste products are no longer added/ to the drinking water (I find it absurd that the fluoride used to fluoridate drinking water is derived from industrial waste without purification, increasing carcinogenic heavy metal levels, such as arsenic and radionuclides, in the drinking water). In my opinion, purposely adding carcinogens to the drinking water at levels that are known to increase cancer rates (e.g. arsenic at parts per billion), in my opinion, is against all concepts of 'do no harm'. Lawsuits have now been launched to hold those responsible for this practice accountable.

Several Canadian cities have decided it is not worth continuing the practice of fluoridation. These can be viewed at COF-COF.ca. The number of communities that are no longer fluoridating their drinking water has reduced the total percentage of Canadians on artificially fluoridated water down from 2/3 to about 1/3.

There is no doubt in my mind that fluoridation has next to no benefit in terms of reduced dental decay. The modern literature is clear on that. Fluoridation cessation studies fail to show an increase in dental decay. In fact, caries rates continue to drop. The York review, held up as the best evidence for 'safe and effective' for fluoridation is flawed because a) it could not find a single randomized, double blinded clinical trial, b) none of the clinical trials adjusted for confounding factors known to affect dental decay such as vitamin D levels, daily sugar intake, sweeteners, fissure sealants etc.. c) lumping modern studies with very old studies when decay rates were a lot higher resulted in an over-estimate of the benefit.

In the 1950's, when fluoridation started to catch on, it was claimed that there was as much as a 40% benefit. Despite the evidence being very weak, fluoridation might have been worthwhile, especially since fluoridated toothpastes were not introduced until the late 1960's. After the introduction of fluoridated toothpaste, the benefit of fluoridation declined. Now, if there is any benefit at all, one could expect perhaps a 5-10% benefit in children. If half the children are already cavity free and the average decay rates are only two cavities per child it means cities have to fluoridate for 20 years in order to save one decayed surface for every fifth child. More recent studies conducted in Australia show that a lifetime of fluoridation MIGHT save about one tooth from decay from childhood to middle age. Clearly, that is NOT a policy that demonstrates fiscal responsibility and cities that do not do due diligence in terms of cost-benefit analysis are wasting tax payers money and may actually be putting their councillors in a position

of liability. The claim that for every \$1 spent on fluoridation saves \$38 was never accurate and is currently exceedingly misleading. It simply is a lie.

No government agency anywhere in the world is properly monitoring the accumulation of fluoride in people consuming fluoridated water. You cannot medicate people without knowing whether they are overdosing on the medication and whether there are any long-term negative health effects.

Fluoride added to drinking water has NOT been shown to be safe and effective. In fact, as more and more peer-reviewed studies on fluoride toxicity appear in the literature, it has become clear to me that the pendulum is certainly shifting to 'not safe, and no longer effective'.

I would be more than happy to provide you and all the Israeli experts in the CC list a full list of peer-reviewed studies on which I have based my expert opinion expressed in this email.

You have made the right decision NOT to fluoridate in Israel. Congratulations.

Sincerely,

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