

Review of the New Zealand Report Released August 2014

Review undertaken by Paul Connett, PhD,
Director, Fluoride Action Network
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Paul's review is on "*Health effects of water fluoridation: A review of the scientific evidence A report on behalf of the Royal Society of New Zealand and the Office of the Prime Minister's Chief Science Advisor*" August 2014

This is the first of a two-part series on the whitewash reviews which are produced by pro-fluoridation governments in an attempt to defuse the growing efforts to end this foolish practice worldwide. Part 1 is on the [whitewash review](#) produced by the NZ government a few days ago.

Hand picked governmental review panels

In the book *The Case Against Fluoride* (Chelsea Green, 2010) my co-authors and I tried to explain how and why the practice of water fluoridation has been pursued so vigorously for so many years, despite the science that indicates that it is neither effective nor safe. The "how's" are much easier to explain (see chapters 22-25) than the "why's" (see chapter 26). One of the how's is the self-serving governmental reviews which we describe in chapter 24. We lead off that chapter with a quote from the book *Fluoride Wars* (2009), which is otherwise slanted toward fluoridation. The authors, Alan Freeze and Jay Lehr, conceded one very important point about the promotion of fluoridation. They write:

The Anti-fluoride forces have always claimed that the many government-sponsored review panels set up over the years to assess the costs and benefits of fluoridation were stacked in favor of fluoridation. A review of the membership of the various panels confirms this charge. The expert committees that put together reports by the American Association for the Advancement of Science in 1941, 1944 and 1954; the National Academy of Sciences in 1951, 1971, 1977 and 1993; the World Health Organization in 1958 and 1970; and the U.S. Public Health Service in 1991 are rife with the names of well-known medical and dental researchers who actively campaigned on behalf of fluoridation or whose research was held in high regard in the pro-fluoridation movement. Membership was interlocking and incestuous.

Nothing has changed. Time and time again when this practice is under political or scientific threat pro-fluoridation governments hand pick panels (usually containing a mix of government employees and scientists who are known to be pro-fluoridation) to "review" the literature and thence deliver a rubber-stamp for government policy. In chapter 24 we discuss three recent examples of this 1) The Irish Fluoridation Forum (2002); 2) Health Canada's selection of 6 experts to review the literature in 2007 (four of which were pro-fluoridation dentists) and 3) the Australian National Health and Medical Research Council of 2007 (NHMRC, 2007).

As Mark Twain observed "history may not repeat itself but it sure does rhyme!"

The latest NZ Whitewash review

This review titled the [Health Effects of Water Fluoridation: a Review of the Scientific Evidence](#), commissioned by the Prime Minister's Chief Science Advisor Sir Peter Gluckman and the Royal Society of New Zealand's President Sir David Skegg, was released on August 22, 2014.

A press report can be viewed here: <http://fluoridealert.org/news/fluoride-safe-and-effective-expert-review/>

As far as the science is concerned this is a classic case of inaccurate, selective, slanted and superficial use of the literature and later I will give one very clear example to illustrate that. But first here is what Mary Byrne, who heads up FAN NZ, says about the politics of this review. In an August press release, Mary wrote:

Last week we had [Dirty Politics](#) this week we have Laundromat Science

A "review" of fluoridation published yesterday (22nd August) was chaired by committed fluoridationists Professors Peter Gluckman and David Skegg. Both of these men had already hung their hat on the fluoridation wagon.

It is obvious that this review was set up to allay the growing public concern and awareness that fluoride does cause harm rather than actually deal with science. This was PR not science, in other words, dirty science.

Last year Prof Gluckman issued an advisory stating that “the science was settled” and two weeks ago he said on Radio NZ that the Review would be looking at “what we know about the safety and efficacy of fluoride in water.” He didn’t say they would be examining the research that shows that fluoride is harmful and perhaps not even effective.

Less than two years ago, Prof Skegg claimed that there was no new evidence to require a review of fluoridation, in spite of the two most prestigious international reviews in history (The York Review 2000 and the National Research Council 2006) saying there was a dire need for better scientific information.

The NZ “expert panel” included only people who were already known to be ardently in favor of fluoridation and not one single person who is known to be opposed, or even someone neutral. It was therefore already a foregone conclusion.

Gregory Seymour who, as Head of the Otago Dental School, refused the Dental Students’ Association’s request to hear scientific evidence against fluoridation on campus by an international expert, and Murray Thomson is the Editor of the NZ Dental Journal and author of pro-fluoridation papers...

This review should be viewed against the recent background of the Health Minister of Israel banning fluoridation last week and the admission by Dr. Michael Beasley, the Deputy Director of the National Poisons Centre, that the jury is still out regarding fluoride’s safety...

The reality is that this “kangaroo review” is just a “finger in the dyke,” trying to hold back the inevitable demise of this failed policy. The weight of scientific evidence is that fluoridation is not only ineffective; it poses major health risks, as (has been) known since the 1940s.

Fluoride Free New Zealand calls for an independently chaired open public discussion to uncover the truth about fluoridation.

Political science not physical science

The following passage from the NZ review will serve to illustrate the shoddy scientific analysis they provide. In a section titled “Effects on IQ” they write:

Recently there have been a number of reports from China and other areas where fluoride levels in groundwater are naturally very high, that have claimed an association between high water fluoride levels and minimally reduced intelligence (measured as IQ) in children.

In addition to the fact that the fluoride exposures in these studies were many (up to 20) times higher than any that are experienced in New Zealand or other CWF communities, the studies also mostly failed to consider other factors that might influence IQ, including exposures to arsenic, iodine deficiency, socioeconomic status, or the nutritional status of the children. Further, the claimed shift of less than one IQ point suggests that this is likely to be a measurement or statistical artifact of no functional significance. A recently published study in New Zealand followed a group of people born in the early 1970s and measured childhood IQ at the ages of 7, 9, 11 and 13 years, and adult IQ at the age of 38 years. Early-life exposure to fluoride from a variety of sources was recorded, and adjustments were made for factors potentially influencing IQ. This extensive study revealed no evidence that exposure to water fluoridation in New Zealand affects neurological development or IQ.

We conclude that on the available evidence there is no appreciable effect on cognition arising from CWF.

It should be incredibly embarrassing for the Royal Society of New Zealand to have its name associated with such an inaccurate and biased summary of the literature on fluoride’s impact on children’s intellectual development.

- 1) Gluckman and Skegg claim “a shift of less than one IQ point” in the 27 studies reviewed by Choi et al (2012). In reality, the average lowering of IQ was 6.9 IQ points and that is NOT “of no functional significance.” Gluckman and Skegg’s mistake here is huge. A downward shift of 5 IQ points (or more) in a large population would more than double the number of persons who are mentally handicapped (with IQs less than 70) and more than halve the number of very bright persons or geniuses (persons with IQs over 130).
- 2) Gluckman and Skegg claim that, “fluoride exposures in these studies were many (up to 20) times higher than any that are experienced in New Zealand or other CWF communities.” There are several problems with this statement.
 - A) By using the word “exposures” they are blurring the distinction between *concentration* and *dose*. Two populations drinking water with different fluoride *concentrations* can overlap in the *doses* received by

individuals. For example, high water drinkers of water at 1 ppm could get a higher dose than low-water drinkers at 4 ppm.

- B) The use of the phrase “up to 20 times” higher is deceptive since only two out of the 27 studies had the “high-fluoride” village concentrations going up to 11.5 ppm.

Moreover, when harm is found toxicologists and regulators do not normally focus on the *highest* level but the *lowest* level where harm occurs. They try to identify a Lowest Observable Adverse Effect Level (LOAEL) and even a No Observable Adverse Effect level (NOAEL). Thus more relevant to NZ (and other countries with water fluoridation programs in the range of 0.6 to 1.2 ppm) is the fact that 8 of the reviewed studies had concentrations in the “high-fluoride” village (where IQ was lowered) of *less than 3 ppm*. Thus a significant number of these studies indicate that there is no adequate margin of safety to protect all children drinking fluoridated water in NZ or other fluoridated countries.

I should add that in one study the authors sub-divided the children in the high-fluoride village into 5 groups with increasing fluoride concentrations in their well water from 0.75 to 4.3 ppm. They found that as the fluoride concentration increased a) their mean IQ of the sub-group was lowered and b) the percentage of children with an IQ less than 80 increased. The lowest level at which an IQ lowering occurred was 1.26 ppm (Xiang, et al., 2003).

- C) This lack of an adequate margin of safety gets worse when one notes that Gluckman and Skegg are also ignoring other sources of fluoride, which could make it worse for NZ children. For example, rural Chinese children are less likely to use fluoridated toothpaste and a higher percentage would be breast-fed not bottle-fed. In these two respects NZ children would be getting more fluoride from these sources than the Chinese children.

- 3) Gluckman and Skegg claim that of the 27 studies most “failed to consider other factors that might influence IQ, including exposures to arsenic, iodine deficiency, socioeconomic status, or the nutritional status of the children.”

However, the fact that many of the studies did not control for all of these factors does not obviate the need to look for the studies that did. For example, Xiang et al. (2003 a,b) controlled for lead, iodine and more recently arsenic and his work needs to be studied very carefully not simply dismissed because of *other* weaker studies.

Gluckman and Skegg are also demonstrating a double standard here because the study they offer as evidence of no lowering of IQ (Broadbent et al, 2014) also failed to control for some of these same key variables. In fact, the Broadbent study is a very weak study since they have virtually no children in the control group i.e. they had virtually no children that were neither exposed to fluoridated water nor fluoride supplements.

- 4) Gluckman and Skegg do a very poor job of reviewing all the other voluminous evidence that fluoride is a [potent neurotoxin](#). So while perhaps none of these individual IQ studies is conclusive, the overall consistency of the results is remarkable considering they were done by different research teams in different countries, and over a very wide geographical area in China. The results are also consistent with many other animal and human studies. For example, there have been 19 animal studies that have shown that animals perform less well in learning and memory experiments when exposed to fluoride. It is the *weight of evidence* on fluoride’s neurotoxicity that should make responsible scientists and health officials much more cautious than Gluckman and Skegg.

While at this point we can do little to change the whitewash dished up by Gluckman and Skegg other than exposing their political agenda and their lack of science, we might be able to do something more about the new review by the National Health and Medical Research Council (NHMRC), an agency of the Australian Federal government.

Part 2 to follow.