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Fluoridation News

Water fluoridation safe and effective, says New Zealand review of scientific evidence

Local councils with water fluoridation schemes in New Zealand can be confident that their continuation will promote better oral health in their communities, reduce health inequalities, save on lifetime dental care costs and pose no risks to public health, according to a report published in August 2014 by the Royal Society of New Zealand and the Office of the New Zealand Prime Minister's Chief Science Adviser. (1)

Call for expansion of water fluoridation coverage in New Zealand

The panel of experts who conducted the review have called on New Zealand councils currently without fluoridation (covering around 40% of the population of the country) to consider introducing schemes, particularly where the prevalence and severity of tooth decay are high.

The review found that:

- There were significant differences in decay rates between fluoridated and non-fluoridated areas in New Zealand.
- The burden of tooth decay in New Zealand was highest among the most deprived socio-economic groups, whilst in fluoridated areas this was the segment of the population for which the dental health benefits appeared to be greatest.
- Levels of dental fluorosis in New Zealand were similar between fluoridated and non-fluoridated areas, with a very low prevalence of moderate fluorosis and no signs of severe fluorosis.

COMPELLING EVIDENCE OF BENEFITS

"There is compelling evidence that fluoridation of water at the established and recommended levels produces broad benefits for the dental health of New Zealanders. In this context it is worth noting that dental health remains a major issue for much of the New Zealand population, and that economically and from the equity perspective fluoridation remains the safest and most appropriate approach for promoting dental public health."

Sir Peter Gluckman, New Zealand Prime Minister's Chief Science Adviser

Sir David Skegg, President, Royal Society of New Zealand

No evidence of harm from fluoridation

In addition, the review team looked at the scientific evidence from New Zealand and around the world on a range of non-dental health conditions, including osteosarcoma and neurodevelopment (two issues that have been frequently raised by opponents of fluoridation over recent years). No evidence of harm was found.

Citing major studies from Ireland (2), the United Kingdom (3) and the United States (4) which had found no link between osteosarcoma and water fluoridation, the report said also that data from the New Zealand Cancer Registry from 2000 to 2008 showed no higher risk of this form of bone cancer to people living in fluoridated communities.

The report said a recently published New Zealand study (5) had revealed no evidence that exposure to water fluoridation affects neurodevelopment or IQ. The study measured the IQs of individuals born in 1972/73 when they reached the ages of 7, 9, 11, 13 and 38.

Early life exposure to fluoride from a variety of sources, including fluoridated water, was taken into account, and statistical adjustments were made for potential confounding variables that may affect IQ. The review team contrasts this approach to that adopted in earlier Chinese studies which, they say, were conducted mostly in areas with high naturally occurring fluoride levels and were flawed by their failure to consider the effects of lead, arsenic, iodine deficiency, socio-economic status and poor nutrition on the children examined.

Strong evidence that fluoridation is cost-effective

The review team concluded that there was ‘strong evidence’ – both from a New Zealand study published in 2001 (6) and other studies in the United States (7),

SCIENTIFIC ISSUES RAISED BY OPPONENTS NOT SUPPORTED BY THE EVIDENCE

“All of the panel members and ourselves Conclude that the efficacy and safety of fluoridation of public water supplies, within the range of concentrations currently recommended by the Ministry of Heath, is assured. We conclude that the scientific issues raised by those opposed to fluoridation are not supported by the evidence.”

Sir Peter Gluckman, New Zealand Prime Minister’s Chief Science Adviser

Sir David Skegg, President, Royal Society of New Zealand

Australia (8) and Canada (9) – that water fluoridation represents a cost-effective use of taxpayer funds. The New Zealand study, they said, had calculated that adding fluoride to water was likely to save more in dental costs than it costs to run fluoridation schemes in communities of more than 1,000 people.

1. *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 Adviser (2014).

2. Comber H, Deady S, Montgomery E, Gavin A (2011): *Drinking water fluoridation and osteosarcoma incidence on the island of Ireland.* Cancer Causes Control, 22, 919-924.

3. Blakey K, Feltbower RG, Parslow RC, James PW, Pozo BG, Stiller C, Vincent TJ, Norman P, McKinney PA, Murphy MF, Craft AW, McNally RJQ (2014). *Is fluoride a risk factor for cancer? Small area analysis of osteosarcoma and Ewing sarcoma among 0-49 year olds in Great Britain, 1980-2005.* International Journal of Epidemiology, 2014, 224-234.

4. Kim FM, Hayes C, Williams PL, Whitford GM, Joshipura KJ, Hoover RN, Douglass CW and the National Osteosarcoma Etiology Group (2011): *An assessment of bone fluoride and osteosarcoma.* Published online in the Journal of Dental Research, July 2011.

5. Broadbent JM, Thomson WM, Ramrakha S, Moffitt TE, Zeng J, Lyndie A, Page F, Poulton R (2014). *Community water fluoridation and intelligence – a prospective study in New Zealand.* American Journal of Public Health, published online May 15, 2014.

6. Wright JC, Bates MN, Cutress T, Lee M (1999). *The cost effectiveness of fluoridating water supplies in New Zealand.* A report for the New Zealand Ministry of Health.

7. Griffin SO, Jones K, Tomar, Tomar SL (2001). *An economic evaluation of community water fluoridation.* Journal of Public Health Dentistry, 2001, 61(2), 78-86

8. Ciketic, S., Hayatbakhsh MR, and Doran CM (2010). *Drinking water fluoridation in South East Queensland: a cost-effectiveness evaluation.* The Health Promotion Journal of Australia, 2010. 21(1), 51-6.

9. Tchouaket E, Brousselle A, Fansi A, Dionne PA, Bertrand E, Fortin C (2013). *The economic value of Quebec's water fluoridation programme.* Journal of Public Health, 2013, 21, 523-533.

APPROPRIATE TO EXPAND WATER FLUORIDATION IN NEW ZEALAND

"Our assessment suggests that it is appropriate, from the scientific perspective, that fluoridation be expanded to assist those New Zealand communities that currently do not benefit from this public health measure – particularly those with a high prevalence of dental caries."

Sir Peter Gluckman, New Zealand Prime Minister's Chief Science Adviser

Sir David Skegg, President, Royal Society of New Zealand