

# **Nelson Marlborough District Health Board**

## **Position Statement on Community Water Fluoridation**

### **NELSON MARLBOROUGH DHB POSITION**

The Nelson Marlborough District Health Board:

- Considers dental decay to be an important public health issue with significant ethnic and socioeconomic health inequalities in both oral health status and access to dental services in Nelson Marlborough.
- Endorses community water fluoridation as an important public health measure in the maintenance of oral health, the prevention of tooth decay and the reduction of health inequalities.
- Supports the Ministry of Health's position, recommending the fluoridation of drinking water supplies to provide further protection against dental decay (0.7 – 1.0 mg/L).
- Acknowledges that community water fluoridation is a safe, effective and affordable population-based strategy for the prevention of dental decay.
- Is committed to promoting health messages endorsing community water fluoridation as a cornerstone of oral health in conjunction with eating healthy food, reducing sugar intake, twice daily brushing with fluoride toothpaste and regularly visiting a dental provider.
- Is committed to working with local and central government and other public health organisations to actively promote the fluoridation of community water supplies.

## **BACKGROUND**

Tooth decay is a largely preventable disease that can cause a significant impact on personal appearance, self-esteem, social interaction and the ability to speak and chew.<sup>1</sup> Untreated decay can lead to pain, dental abscesses or serious infection.<sup>1</sup>

Tooth decay is reported to be the single most common chronic disease among New Zealanders of all ages and is responsible for significant health loss and costs.<sup>2</sup>

During 2014, the overall rate of tooth decay amongst Nelson-Marlborough five year old children attending oral health services was 39%, with a higher rate for Maori children (54%) compared with non-Maori children (36%).

Fluoride naturally occurs in the environment, including in water, and is known to have a protective effect on teeth when used at the correct concentrations.<sup>1</sup> Most water sources in New Zealand do not naturally contain fluoride at a level that helps prevent tooth decay, but it can be increased to the optimal levels of 0.7 to 1.0 mg/L recommended by the Ministry of Health to achieve these protective effects.

Fluoride works in three ways to improve oral health: makes the teeth more resistant to decay by strengthening the tooth surface; reduces the growth of bacteria that cause cavities; and helps repair the early stages of tooth decay. The beneficial effect of fluoride is applicable to all individuals of all ages, particularly the young, the vulnerable and the elderly.<sup>3</sup>

Around 60% of New Zealanders on reticulated water supplies receive fluoridated water, amounting to 54% of the total population.<sup>4</sup> Internationally community water fluoridation is practiced in over 30 countries, providing optimally fluoridated water to over 370 million people.<sup>2</sup> At a local level there are currently no community water fluoridation schemes within Nelson Marlborough, with only RNZAF Base Woodbourne implementing water fluoridation.

## **SUMMARY OF EVIDENCE**

### **Effectiveness**

Comprehensive reviews of the scientific literature confirm that community water fluoridation reduces the occurrence and severity of tooth decay.<sup>2, 5</sup>

Significant differences in decay rates between fluoridated and non-fluoridated communities remain in New Zealand despite the widespread use of fluoridated toothpaste.<sup>2</sup> This evidence includes results from the 2009 New Zealand Oral Health Survey which found 40% less tooth decay in children within fluoridated areas compared to areas without.<sup>6</sup>

Community water fluoridation benefits everyone in a community, including those who do not use or cannot afford fluoridated toothpaste. It has been found that only 43% of children brush twice daily with the recommended strength fluoridated toothpaste.<sup>7</sup>

Fluoride tablets are not as effective as fluoridated drinking water given that they do not provide constant small doses throughout the day unlike water used for drinking and cooking purposes.

Fluoride in the saliva from a tablet only lasts three hours and provides less than one percent of the fluoride available from food and drink in a fluoridated area.<sup>8</sup>

Further to fluoridation, to keep teeth healthy the Ministry of Health also recommends brushing twice a day with fluoride toothpaste, visiting a dentist regularly and reducing sugar. Community water fluoridation provides an additional benefit to all these things.<sup>7</sup>

### **Safety**

A 2014 review by the Office of the Prime Minister's Chief Science Advisor and the Royal Society of New Zealand found that fluoridation at the levels used in New Zealand creates no adverse health effects of any significance. In particular, the review notes that:-

*"... no effects on brain development, cancer risk or cardiovascular or metabolic risk have been substantiated, and the safety margins are such that no subset of the population is at risk because of fluoridation".<sup>2</sup>*

For the levels of fluoridation used in New Zealand, the only side effect is minimal fluorosis<sup>i</sup> which is of no major cosmetic significance. No cases of disfiguring fluorosis associated with community water fluoridation have been reported in New Zealand.<sup>2</sup>

In conclusion, the review states that:-

*"...from a medical and public health perspective, water fluoridation at the levels used in New Zealand poses no significant health risks and is effective at reducing the prevalence and severity of tooth decay in communities where it is used. Communities currently without [community water fluoridation] can be confident that this is a safe option that is cost saving and of significant public health benefit – particularly in those communities with high prevalence of dental caries".<sup>2</sup>*

### **Affordability**

Several New Zealand studies confirm that community water fluoridation is cost effective, particularly in communities over 1,000 people.<sup>2,9,10</sup> The financial costs of treating dental disease are high, while the costs of community water fluoridation are relatively low.<sup>1</sup> Community water fluoridation costs around 50 cents per person per year compared to the cost of a single surface filling at about \$130.<sup>7</sup>

### **Equality**

New Zealand has significant ethnic and socioeconomic disparities in both oral health status and access to dental services.<sup>2</sup> Community water fluoridation can benefit all groups of the community regardless of age, income or education level and is an important upstream (i.e. preventative) health care intervention to reduce oral health inequalities.<sup>1,2,9</sup>

---

<sup>i</sup> Dental fluorosis is a defect of the tooth enamel which develops as the teeth are forming. It is characterised by opaque white areas in the enamel and in the common, mild forms is of minor or no cosmetic significance. Severe forms result in pitted and discoloured teeth that are prone to fracture and wear. The level of fluoride for community water fluoridation is set to minimise the risk of this condition whilst providing maximum protective benefit against tooth decay.

## References

---

- <sup>1</sup> Ministry of Health. 2010. *Water fluoridation*. Wellington: Ministry of Health.  
[https://www.health.govt.nz/system/files/documents/pages/water-fluoridation-flipbook\\_0.pdf](https://www.health.govt.nz/system/files/documents/pages/water-fluoridation-flipbook_0.pdf)
- <sup>2</sup> Royal Society of New Zealand and the Office of the Prime Minister's Chief Science Advisor. 2014. *Health effects of water fluoridation: A review of the scientific evidence*. Auckland: Office of the Prime Minister's Chief Science Advisor. [http://www.royalsociety.org.nz/media/2014/08/Health-effects-of-water-fluoridation\\_Aug\\_2014\\_corrected\\_Jan\\_2015.pdf](http://www.royalsociety.org.nz/media/2014/08/Health-effects-of-water-fluoridation_Aug_2014_corrected_Jan_2015.pdf)
- <sup>3</sup> Ministry of Health. 2011. *Fluoride and oral health*. Wellington: Ministry of Health.  
<http://www.health.govt.nz/our-work/preventative-health-wellness/fluoridation/fluoride-and-health/fluoride-and-oral-health>
- <sup>4</sup> National Fluoridation Information Service. 2014. *Environmental scan: The status of community water fluoridation in New Zealand March 2013 – July 2014*. Wellington: National Fluoridation Information Service.  
<http://www.rph.org.nz/content/a07b1532-aed6-4427-8c04-ba5d03216625.cmr>
- <sup>5</sup> National Health and Medical Research Council. 2007. *A systematic review of the efficacy and safety of water fluoridation. Part A: Review methodology and results*. Canberra: Australian Government.  
[https://www.nhmrc.gov.au/\\_files\\_nhmrc/publications/attachments/eh41\\_1.pdf](https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/eh41_1.pdf)
- <sup>6</sup> Ministry of Health. 2010. *Our oral health: Key findings of the 2009 New Zealand Oral Health Survey*. Wellington: Ministry of Health. <http://www.health.govt.nz/publication/our-oral-health-key-findings-2009-new-zealand-oral-health-survey>
- <sup>7</sup> Ministry of Health. 2013. *Community water fluoridation*. Wellington: Ministry of Health.  
<http://www.health.govt.nz/system/files/documents/publications/water-fluoridation.pdf>
- <sup>8</sup> Ministry of Health. 2009. *Fluoridation questions and answers*. Wellington: Ministry of Health.  
<http://www.health.govt.nz/our-work/preventative-health-wellness/fluoridation/fluoridation-questions-and-answers>
- <sup>9</sup> Wright J, Bates M, Cutress T, Lee M. 2001. *The cost-effectiveness of fluoridating water supplies in New Zealand*. Australian and New Zealand Journal of Public Health 25(2) 170-178.
- <sup>10</sup> National Fluoridation Information Service. 2012. *A review of the current cost benefit of community water fluoridation interventions*. Wellington: National Fluoridation Information Service.  
<http://www.rph.org.nz/content/2519aa12-1b7d-4591-8388-4a8a9be89429.cmr>