

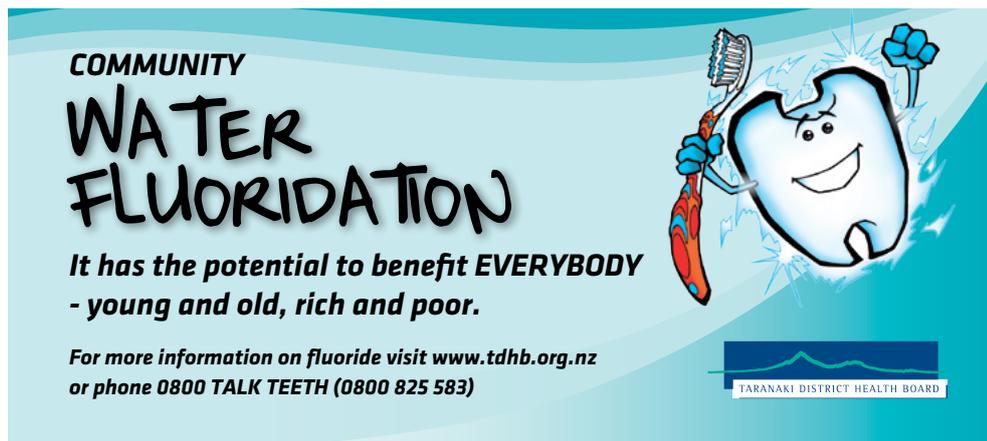
Nau mai haere mai,

Kia ora koutou, welcome to the sixth issue of our NFIS e-newsletter 'On Tap'. The first quarter of 2013 has been especially busy, with lots of discussion and debate around the value of community water fluoridation (CWF) in the media. So we have made this issue of On Tap a bumper 'media issue' giving an overview of topics and taster of angles on what's been discussed around the country. It is great to see our democracy is healthy and well with such robust debate. In reviewing the media we have noticed some errors of fact, these can make a complex issue like CWF even more difficult to understand, especially for those tasked with the decision making in this area. So along with a snap shot of the media we have also included some corrections hopefully addressing areas of concern and confusion. If you come across other things in the media which you are particularly confused about, or where the information seems confusing or contrary to what you have come across before, please send us a request and we will do our best to clarify the issue for you.

Happy reading,

Emmeline

COLLABORATIVE APPROACH



COMMUNITY
WATER
FLUORIDATION

***It has the potential to benefit EVERYBODY
- young and old, rich and poor.***

***For more information on fluoride visit www.tdhb.org.nz
or phone 0800 TALK TEETH (0800 825 583)***

TARANAKI DISTRICT HEALTH BOARD

The Taranaki District Health Board Oral Health Group was formed to co-ordinate action to promote community water fluoridation (CWF). The group was formed before the New Plymouth District Council reviewed and subsequently withdrew CWF from the New Plymouth water supply in 2011.

The group includes representatives from a number of services of the Taranaki District Health Board - Community Oral Health Service, Public Health Unit, Māori Health Unit, DHB Communications, Service Managers and the Medical Officer of Health. A key benefit of the group is sharing knowledge, skills and the workload. Having a range of people leads to a broader consideration of strategies, and to more creative and effective action.

Another important benefit of the group is support, which is important when working on a challenging and contentious topic.

The group continued to meet following the New Plymouth decision and submitted to all local Councils long term plans. At the same time Dr Sandie Pryor, a dentist working in Patea, submitted to the South Taranaki District Council recommending introducing CWF as part of upgrades to the Patea and Waverley water treatment plants. The Council made the decision to extend fluoridation to these two geographically isolated, highly deprived communities in December 2012. The input and networks of local independent health professionals alongside the work of the Taranaki Oral Health Group was instrumental in gaining support for extending CWF.

Key tasks the group have been involved in:

- Working with NFIS to ensure accurate up to date information is available in Taranaki and in particular for decision makers
- Preparing submissions and presentations as part of the CWF tribunals
- Liaising with national organisations such as Te Ao Marama, Children's Commissioner to allow them to contribute to the submission process
- Producing and distributing fluoride information resources for a variety of audiences
- Making it easier for those who support fluoridation to submit through the use of submission templates and making factual, accessible evidence-based information available
- Providing selective media comment as and when appropriate.

Letters to the Editor



Waikato Times, Hamilton Waikato
30 March 2012
Letters to the Editor

Scaremongering

Why are we once again wasting time on discussing the importance of adding fluoride when the professionals know how necessary fluoride in the drinking water is? It's a public health initiative like immunisation. Recent research from the University of Adelaide published in the Journal of Dental Research, has provided even more evidence that fluoride in drinking water prevents tooth decay in adults and improves the oral health of children. Those with more than a 75 per cent lifetime exposure to fluoride treated drinking water had 30 per cent less decay than those with a 25 per cent exposure.

It is only a few old selfish Nimby activists and their ignorant mates from other towns orchestrating a smokescreen of misinformation which unfortunately Hamilton city councillors listened to, which has forced an expensive and unnecessary inquiry. The anti-fluoride brigade make a lot of noise but the science they quote is out of date and scaremongering.

Hamilton

Hawkes Bay Today, Hawkes Bay
19 March 2013
Letters to the editor

Is there data?

I have been a sideline spectator in the fluoride debate since it has first began and I feel I am no more informed than when I first heard of it.

For the record, I was a primary school pupil of the fifties and can remember being part of the original dental surveys and have lived in Hastings and been drinking fluoridated Hastings water all my life.

I no longer want to hear from US, British or any other overseas "expert" they are not of Hawke's Bay, do not know our soil and other environments facts, our eating habits or life

style. Angela Hair has stated her case and so have the naysayers from the pro-fluoride side.

After 55+ years of fluoridation in Hastings, surely, there is enough evidence to support the argument one-way or the other.

The people I wish to hear from are our own Hawke's Bay medical people. If there are benefits and adverse side effects of fluoridation, it must be very evident in the population of Hastings & Napier.

If I go to my dentist with my friend from Napier, can they tell which one of us lives where? Are there any significant different dental issues between the two cities?

Likewise, can any GP tell me if there are significant different health issues between our twin cities that can be attributed solely to fluoride in the Hastings water? Has there been a comprehensive local study done on benefits or health problems associated with fluoride?

If there are no significant dental benefits, why do we want to continue with fluoride: if there are no health issues why should we discontinue?

Hawke's Bay

Waikato Times, Hamilton Waikato
25 February 2013

Bully tactics

I attended the fluoride lecture by Paul Connett on February 21. As the room was full of anti-fluoride supporters, I thought I should provide some balance to the letters you will no doubt receive from them.

The biggest problem with Mr Connett is a lack of consistency. After slating evidence that the Ministry of Health and district health boards use to support fluoridation, he presented papers as if they were proof of fluoride harm. These papers are full of errors, being discredited by any professional who understands about the hierarchy of evidence.

He talked about wanting to debate fluoride with the experts, who are not willing to meet him.

Mr Connett takes this as evidence that Hamilton's, medical officer of health is frightened of being exposed. I believe there would be no such thing as a debate with this man. He is a bully, and so convinced he is correct, he is not willing to listen to reason or reliable evidence.

To his credit, he is a powerful orator and no doubt stirred further resolve among supporters. I urge the people of Hamilton to support ongoing fluoridation in the upcoming tribunal. (Abridged)

Cambridge

Waikato Times, Hamilton Waikato
07 March 2013

Legal fluoridation

[The correspondent] (Waikato Times, Hamilton Waikato 25 February 2013) has confused what he calls bullying with my outrage at the promotion of water fluoridation by civil servants.

I am outraged that any health official would promote the use of the water supply to deliver medicine. This is clumsy and unethical, because you can't control who gets the medicine, or the dose, and it violates the individual's right to informed consent. That is the kind of bullying that [the correspondent] should be concerned about.

I am outraged that low-income families are being forced to give fluoride to bottle-fed babies at 200 times the level that occurs in mother's milk (0.85ppm versus 0.004ppm).

I am outraged that this practice continues even after fluoridation proponents have admitted that the predominant benefits of fluoride are topical. With universal availability of fluoridated toothpaste it is unnecessary to force people who don't want it to swallow fluoride.

I am outraged that health officials are ignoring are the studies that have found IQ and exposure to fluoride at levels, which leave no margin of safety to protect all of New Zealand's children.

Finally, I am outraged that those who promote this practice with confidence in private, cannot do so in open public debate.

Hauraki Herald, Auckland
18 January 2013

Overdose not relevant

Correspondent (Hauraki Herald, Jan 11, 2013) cites what in fact are the effects of chronic gross fluoride overdose, and have no relevance to the present discussion.

High levels of fluoride in groundwater occur naturally in many parts of the world. For example: concentrations above 7mg/l and up to 20 mg/l are reported in the crystalline aquifers in the South India states of Karnataka and Andhra Pradesh respectively.

However, Rajasthan is thought to be the most seriously affected by high fluoride concentrations.

Ten percent of villages in Rajasthan have excessive fluoride contents in their water supply.

In central Rajasthan (Nagaur district) about 25 per cent of the population is affected by dental fluorosis and about 10 per cent by skeletal fluorosis.

from previous page

The amount of fluoride ingested is multiplied in these tropical areas, because of the body's need for hydration.

The debate in New Zealand is about the therapeutic dosage need to compensate for out fluoride-deficient water supplies.

The World Health Organisation (WHO) 2004 guideline for fluoride in drinking water is 1.5 mg/l, a value adopted by many countries as a national standard.

New Zealand has adopted a conservative level of 1.0mg/l. Referring to a common salt of fluoride, sodium fluoride (NaF), the lethal dose for most adult humans is estimated at 5 to 10g, which is equivalent to 32 to 64mg/kg elemental fluoride/kg body weight: ie many times a normal person's lifetime's therapeutic dose consumed at once.

If [the correspondent's] claims were indeed true, then there may be a corollary. A clinical survey of populations deficient in fluoride (such as New Zealand) should reveal low rates of tooth decay, few skeletal deformities, and a population whose intelligence is measurably higher than that of areas of high fluoride concentrations. I am not persuaded that this would be so.

Whitianga

Waikato Times, Hamilton Waikato
05 February 2013

Mere delay of tooth decay

Major scientific studies show a connection between fluoride and heart disease. The recent Harvard review of IQ studies confirmed that fluoridated water reduces IQ.

However, The correspondent (WDHB) seems to wants to downplay the risks, or even deny them outright. He uses the standard scare tactic of referring to the pain of full-tooth extraction on under-5-year-olds, under general anaesthetic, falsely claiming this is due to "fluoride deficiency". Tooth decay is not a symptom of "fluoride deficiency". Fluoride is simply not a nutrient.

Major studies show that fluoridation merely delays childhood tooth decay by about one year, with the effect disappearing in the early teens. Tooth decay has declined throughout the developed world at the same rate with ot without fluoridation (WHO figures).

The South Wairarapa DHB recently released figures showing that fluoridated children were 38 per cent more likely to need an extraction for bad teeth than unfluoridated children, while the Ministry of Health figures show they had on average 24 per cent more tooth decay. Despite

being fluoridated, it is now reported that Hamilton has a growing problem with children's oral health. (ABRIDGED)

Hamilton

Not printed.

NFIS letter In response to the Letter to the Editor 'Mere delay of tooth decay',

05.02.13.

Dear Madam/Sir

There are several points in this letter which need to be addressed for factual accuracy. To keep our reply brief we will address just one here:

"Major scientific studies show a connection between fluoride and heart disease. The recent Harvard review of IQ studies confirmed that fluoridated water reduces IQ."

The author of this letter writes as if there is a single obvious conclusion that can be drawn from this meta-analysis (Choi et al. <http://dx.doi.org/10.1289/ehp.1104912>). What is important here is that Choi conducted a meta-analysis of some studies of unknown validity – which without further evidence cannot be regarded as valid or robust and therefore the association studied is not 'confirmed' which the authors acknowledge – and is stated in the report.

This response outlines what IQ tests are for and what can be concluded from this meta analysis about community water fluoridation programmes in New Zealand and risk to IQ potential.

An IQ test is an examination that attempts to measure "how you think," as opposed to your accumulated knowledge, or "what you know." The name "IQ" stands for "intelligence quotient," because the first such tests were scored by a process of mathematical division, and the result of division is known as a quotient. While tests are no longer scored this way, the name has stuck. An IQ is a score derived from one of several standardized tests designed to assess intelligence.

The variables affecting IQ include both genetic (inherited) and environmental factors. Environmental factors can include maternal health, nutrition, nurture and parenting, psychological and physical health, stress, sleep problems, drug and alcohol abuse, and head injury. It is generally recognized that many external factors can have significant influences on a child's IQ, including the educational level of their parents, and family income. [i], [ii], [iii]

Several studies have explored the relationship between children's estimated levels of fluoride exposure and their intelligence, as estimated by IQ tests. In most cases, exposure has been

defined in terms of fluoride concentrations in their drinking water (drinking water fluoride concentrations; DWFC) and/or urine, with comparison of the IQ profile of a higher DWFC group with that of a lower DWFC group of children.

As Choi et al note in their meta-analysis, "Opportunities for epidemiological studies depend on the existence of comparable population groups exposed to different levels of fluoride from drinking water. Such circumstances are difficult to find in many industrialized countries, as fluoride concentrations in community water are usually no higher than 1mg/L, even when fluoride is added to water supplies as a public health measure to reduce tooth decay."

Choi et al acknowledge that many of these studies in their analysis have limitations in design and analysis, and clear dose-response relationships between DWFCs and assessed IQ are often not evident. Choi et al are generally very cautious in their comments note that any negative effect only applied to high DWFCs.

None of the studies described in the meta-analysis permit any direct comparison between the IQs of children experiencing DWFCs of around 0.7 to 1ppm (mean 0.85ppm) and those having levels substantially lower than that, say 0.2 to 0.3ppm. Therefore, the meta-analysis provides no direct evidence that can be translated to New Zealand. The conclusion remains that Choi et al did not provide sufficient evidence of the studies to make anything other a mere cautious suggestion. Choi et al also acknowledge that the levels of fluoride in these studies were higher than anything in the USA.

From this meta-analysis we are unlikely to get conclusive evidence one way or the other as we are dealing with populations and require more rigorous studies carried out and in areas which have fluoride levels similar to NZ. Therefore the meta-analysis by Choi et al adds very little to the evidence base suggesting a relationship between NZ levels of fluoride and IQ of NZ children.

Media Issues

Media issue	Response/ correction/ comment
<p>Stuff.co.nz and Waikato Times 9.02.12 'Fresh versus clean' Article</p> <p>"[Vendor] sells water filtration devices. He says his product is 'amazing', but even it can't get all the fluoride out. There are more extreme measures involving reverse osmosis or distillation that might get rid of the fluoride, but it removes everything else too, including minerals, and leaves only "dead water" behind.</p> <p>...She brings the news that boiling water only increase's fluoride's toxicity...</p>	<p>Do these kind of filters remove fluoride? Treatment by reverse osmosis and distillation will reduce the fluoride concentration in water to low levels.</p> <p>What is 'dead water'? 'Dead water' is not a technical term, however, reverse osmosis and distillation reduce the concentrations of all substances in the water to very low levels. A 2005 WHO report (Nutrients in Drinking Water) did not reach firm conclusions on the health implications of waters that have been substantially demineralized as there was insufficient information available, except that higher water hardness (calcium and magnesium) did appear associated with reduced risk of cardiovascular disease.</p> <p>What is the difference between increasing concentration and increasing toxicity? If water is boiled long enough, the concentration of the fluoride in the water will gradually increase as some of the water evaporates in steam. However, the boiling does not change the toxicity of the fluoride. It is the same as sugar dissolved in water. The sweetness of water with sugar dissolved in it increases if the concentration of the sugar is increased, but the sugar itself does not increase in sweetness.</p>
<p>Waikato Times 'Fluoride opposition' 5.02.13</p> <p>"Fluoride, the quarterly journal of the International Society for Fluoride Research"</p>	<p>Response to "Fluoride Opposition"</p> <p>In the letter "Fluoride Opposition" (Waikato Times 05/02/2013) the correspondent is critical of an article published in the previous week's Waikato Times – "Discerning the dangers of fluoridation on the net". This was a tongue-in-cheek opinion piece on the large amount of information and misinformation about fluoride on the web. The correspondent is correct that this article concentrated on dubious and sensational sources, this seemed to be intentional given the humorous nature of the article.</p> <p>The letter also refers to the contract between the Ministry of Health and NFIS. The purpose of the NFIS six monthly literature review process is to provide a "central authoritative, accurate source of information and critical commentary on fluoridation research". The literature review provides a summary of the latest scientific research on community water fluoridation (CWF) and is impartial rather than partial as stated in the letter. The use of speech marks around the word scientific suggests some skepticism in the use of this term.</p> <p>When conducting NFIS literature reviews, all articles are selected from recognised article databases such as PubMed, Web of Science and Scopus. These log peer reviewed literature published in scientific journals. Unpublished or unsolicited reports and other material often found on the web would not meet the database inclusion criteria. Papers published in the journal Fluoride are picked up by some of the article databases and where they relate to CWF, are summarised in the NFIS literature reviews.</p> <p>The contribution that papers published in Fluoride can make to the debate around CWF in New Zealand is often limited due to nature of the studies reported. Many papers originate from countries where the level of fluoride in the water from natural sources or pollution is well in excess of the 0.7-1mg/F/l added by CWF in New Zealand. Values are also often well above the 1.5mg/F/l World Health Organisation (WHO) maximum acceptable value (MAV) for CWF. Other papers included in Fluoride report on animal studies, these also use a fluoride does well in excess of the MAV for fluoride.</p> <p>The debate on fluoridation is a controversial one. The aim of the NFIS literature review process is to ensure that decision making around CWF is based on the best available scientific evidence.</p>
<p>Whakatane Beacon 13.02.13 'The facts behind fluorosilicic acid' Letter to editor</p> <p>Fluorosilicic acid is classified as a scheduled 7 (S7) poison using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) The people who want this highly corrosive toxic S7 poison acid removed from drinking water supplied to babies, kidney patients, the elderly and so on, are "nut jobs" whose views pose a risk to the health of the public.</p>	<p>Is the fluoride in community water fluoridation a poison?</p> <p>The correspondent is correct, high concentration fluorosilicic acid is classified under the Standard for the Uniform Scheduling of Drugs and Poisons as a schedule 7 poison. However, what is misunderstood is that the chemical form of the substance changes under the conditions present in fluoridated water (dilution and pH). Under these conditions the fluorosilicic acid splits completely into a hydrated form of silicon dioxide (silicic acid) and fluoride. Consequently, the poison classification, based on the fluoridated silicate, no longer applies.</p>

Media issue	Response/ correction/ comment
<p>Hamilton Press 6.02.13 'Fluoride in water' Letter to editor</p> <p>'It appears that fluoride added to our drinking water is a waste product of aluminum and phosphate fertilizer processing. This is not the calcium-fluoride which can be found in water naturally'.</p> <p>The Tribune, Palmerston North 20. 02.13 'Fighting to free family from fluoride' Article</p> <p>"The fluoride added to water supplies – sodium fluoride – is not a mineral. It is not the same as naturally produced calcium fluoride in our bodies. It is an industrial waste product produced by the aluminum/fertiliser industry".</p> <p>Waikato Times 6.02.13 'Sodium fluoride added' Letter to editor</p> <p>What is added to supplement naturally occurring fluoride is an industrial chemical by-product labelled as sodium fluoride. The wide use of what is now officially recognized as a highly toxic element...</p>	<p>Is fluoride used for community water fluoridation a by-product or a waste-product and what is the chemical difference (or not) of different forms of fluoride once dissolved in water?</p> <p>A secondary substance produced during the manufacture of the primary chemical is a "by-product". Although produced in smaller amounts, it may still have economic value, and so will also be reclaimed for sale to help in maximizing the economics of the process.</p> <p>The fluoride that is present in calcium fluoride, sodium fluoride and the fluoride derived from fluorosilicates, is exactly the same when these substances dissolve in water.</p> <p>Fluorosilicates, the products used for CWF, are by-products of the production of fertilizer. Fluorosilicic acid is a liquid and so is often the preferred chemical for water fluoridation because it has no dust.</p> <p>The manufacture of superphosphate (for fertilizer) from the reaction between rock phosphate and sulfuric acid also produces some silicon tetrafluoride. This is then reacted with water to form fluorosilicic acid. The reaction of the fluorosilicic acid with one of several possible sodium compounds can be used to form sodium hexafluorosilicate. If enough caustic soda is used in the reaction, sodium fluoride is formed.</p> <p>We are aware of fluorosilicic acid being produced by these methods in New Zealand. Fluoride-containing minerals are used in aluminum smelting, but we have not managed to find any evidence that fluoride for community water fluoridation is being sourced from the aluminum industry.</p>
<p>Hawkes Bay Today 8.02.13 'Fluoride showdown thwarted' Article</p> <p>"...there has been no significant monitoring of fluoride toxicity, despite the fact that a third of children in fluoridated areas have white spots on their teeth called fluorosis, a sign of fluoride toxicity"</p> <p>Hawkes Bay Weekend 16.02.13 'Homeopath leads crusade' Article</p> <p>"[Homeopath] promotes research from the World Health Organisation which [Homeopath] says suggests populated areas where fluoride is used in drinking water should be tested for excess dosing. "That is not being done in NZ so the health authority needs to look at the impacts of fluoride over time on the population and whether taking in too much fluoride has resulted in other health problems."</p> <p>Stuff.co.nz and Waikato Times 9.02.12 'Fresh versus clean' Article</p> <p>Most of the fluoride put into water in New Zealand comes from an Australian multinational called Orica. It's most heavily concerned with supplying stuff to miners and made an A\$650 million net profit in 2012. Only 3 per cent of that profit came from New Zealand.</p>	<p>How is the MAV formulated and what it is designed to account for? How is it measured in NZ?</p> <p>The maximum acceptable value (MAV) for fluoride is 1.5mg/L. This is the value recommended by the World Health Organisation. It is set at this value because a group of international toxicologists consider that the scientific evidence shows that adverse health effects (primarily dental fluorosis) is unlikely to occur at this concentration.</p> <p>The Drinking-Water Standards for New Zealand require drinking-water suppliers who fluoridate their water supplies to check the concentration of fluoride in their treated water weekly. Suppliers serving large populations will usually have instrumentation to provide more frequent (often continuous on-line) monitoring. So in keeping levels below the MAV any adverse health effects from fluoride would not be expected to be seen in New Zealand as a result of CWF.</p> <p>What else does Orica produce?</p> <p>Orica is a global chemical producer formed from ICI (Imperial Chemical Industries) Australia. Orica produces a range of water treatment chemicals, including disinfectants, which are added to water to prevent waterborne diseases. It also produces chemicals for other uses including:</p> <ul style="list-style-type: none"> Agriculture - Animal Health, Fertiliser, Ag-chem, Speciality Products Building & Construction - Pigments, Solvents, Inks, Resins, Plasticisers & Phenol Metals & Mining - supply of goods into the Steel & Foundry markets Plastics - LDPE, LLDPE, HDPE, PP and Engineering Plastics Refrigerants - Ammonia, MPG, Klea and Arcton refrigerant gases

Articles of Interest

The below links have been forwarded to our service from various sources.

The Health of New Zealand Adults 2011/12

[Key findings of the New Zealand Health Survey](#)

[Section 8: Oral health status and service use](#)

The Health of New Zealand Children 2011/12

[Key findings of the New Zealand Health Survey](#)

[Section 4: Oral health status and service use](#)

The report 'The Health of New Zealand Children 2011/12' presents key findings about children's health and access to health services in 2011/12. These statistics come from the New Zealand Health Survey.

You can download the report and the data tables from the Downloads section of this page. Results are available by sex, age group, ethnic group and neighbourhood deprivation.

Royal Australasian College of Physicians
Media Release Feb 19 2013

[Water fluoridation: The most effective preventive oral health measure for New Zealand children](#)

Congressional Research Service

Fluoridate in Drinking Water: A Review of Fluoridation and Regulation Issues

[This well balanced summary report on the state of fluoridation in the USA was sent to the NFIS from a FANNZ member.](#)

American Public Health Association Journal
March 2013

Recent findings of a very large study from Australia.

[Water Fluoridation and the Association of Sugar-Sweetened Beverage Consumption and Dental Caries in Australian Children](#)

Jason M. Armfield, PhD, A. John Spencer, MDSc, PhD, MPH, Kaye F. Roberts-Thomson, BDS, PhD, MPH, and Katrina Plastow, BAdEd

Pulitzer Prize winning editorials

[We have come across a series of 2012 editorials that helped reverse a decision to stop water fluoridation for 700,000 residents in Florida, and which recently won the Pulitzer Prize for best editorial writing.](#)

International Public Health

[England is changing the way it delivers Public Health Services. Public Health England has released its Priorities document in April 2013. Public Health is now devolved to Local Authorities.](#)



Section 8: Oral Health Status and Service Use

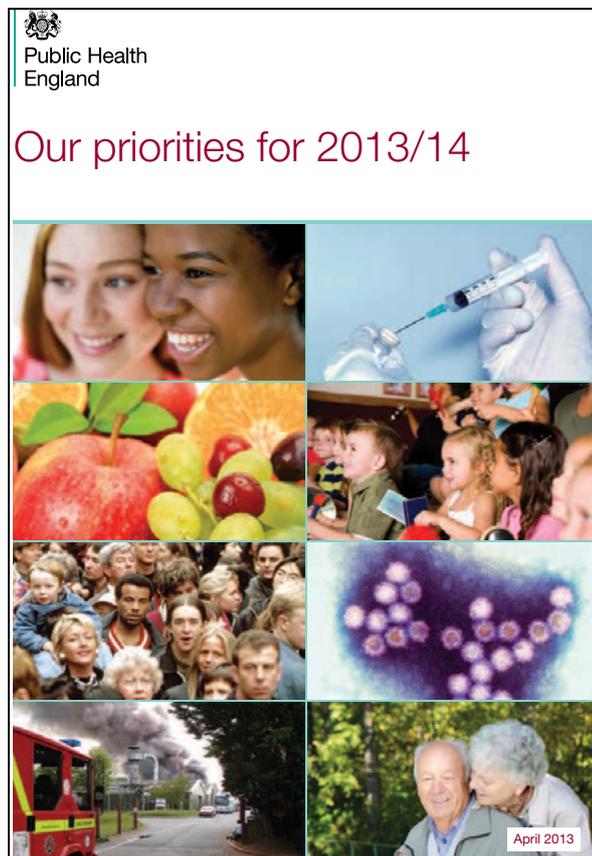
Good oral health is important for good health and wellbeing more generally. Poor oral health is a common cause of discomfort, pain, disability and poor self-image.

Regular dental visits can help keep teeth and gums healthy. At these visits, the dental health care worker can identify oral health problems early or take action to prevent them. To maintain oral health, the Ministry of Health also recommends that people brush their teeth at least twice a day with fluoride toothpaste.

This section focuses on three key indicators relating to oral health status and the use of dental services.

For more information on oral health, see *Our Oral Health* (Ministry of Health 2010), which presents key findings from the 2009 New Zealand Oral Health Survey.

The Health of New Zealand Adults 2011/12: Key findings of the New Zealand Health Survey 113



Public Health England

Our priorities for 2013/14

April 2013

FAST FLUORIDE FACTS

Fluoride is found in all natural waters at some concentration arising from the rocks, soils and geothermal fluids water flows over and through. As in New Zealand, many countries around the world have less than optimal levels of naturally occurring fluoride in source water. Several countries therefore implement programmes to provide an optimal level of fluoride to communities to reduce dental decay and improve oral health.

Countries with widespread water fluoridation programmes include Australia, the United States of America, Canada, the United Kingdom, Ireland, Spain, Israel, Brazil, Brunei, Chile, Argentina, Colombia, Hong Kong, South Korea, Singapore and Malaysia. Countries with limited water fluoridation programmes include Vietnam, Fiji, Papua New Guinea, and South Korea.

Several countries are unable to introduce water fluoridation programmes due to technical, financial or sociocultural reasons. As an alternative, both salt and milk have been found to be reliable and convenient vehicles for increasing fluoride intake to an optimal level for hard to reach and low socio-economic communities. Studies have found them to be as effective as community water fluoridation schemes.

Some European, Latin American, and Caribbean countries, including France, Switzerland, Germany, Costa Rica, Colombia and Jamaica currently use fluoridated salt schemes. Mexico and most Latin American and Caribbean countries (apart from Argentina, Brazil, Chile and French Guyana) have or have had salt fluoridation programmes.

A smaller number of countries currently have fluoridated milk programmes, including Bulgaria, Chile, China, Peru, Russia, Thailand and the United Kingdom.

Some country regions have optimal amounts of naturally occurring fluoride which provides good protection for oral health. Examples of countries supplied with naturally fluoridated water at or around the optimum level needed to prevent dental decay include the United Kingdom (estimated 329,000 people), United States of America (estimated 10,078,000 people) Canada (estimated 300,000 people) and Australia (estimated 144,000 people).

It is estimated that 39.5 million people around the world have access to naturally fluoridated water at the optimal level although variations from one community to another over time make it difficult to calculate an accurate total.

Water with excessively high fluoride concentrations occur in large and extensive geographical belts associated with sediments of marine origin in mountainous areas, volcanic rocks, and granitic and gneissic rocks. A typical example of this extends from Iraq and Iran through Syria and Turkey to the Mediterranean region, and from Algeria to Morocco.

A well-known area associated with volcanic activity follows the East African Rift system from the Jordan valley down through Sudan, Ethiopia, Uganda, Kenya and Tanzania. High groundwater fluoride concentrations associated with granite and gneissic rock has been reported in India, Pakistan, West Africa, Thailand, China, Sri Lanka and Southern Africa.

In countries where there is an excessively high level of naturally occurring fluoride in water supplies, and there is no alternative water source, health authorities attempt the removal or defluoridation of water, where technically feasible.

Fast Fluoride Facts References

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Banoczy, J.; Petersen, P.E. and Rugg-Gunn, A.J.(Editors) (2009) *Milk fluoridation for the prevention of dental caries*. WHO: Geneva. Accessed on 29/1/13 from http://www.who.int/oral_health/publications/milk_fluoridation_2009_en.pdf

What's new on the website

DHB Workbook

Information & Resources for Working on Community Water Fluoridation

This workbook is a tool to support work and discussion on and around community water fluoridation (CWF).

The workbook highlights the roles and responsibilities of District Health Boards and their associated Public Health Units as per the NZ Public Health and Disability Act 2000. There are brief outlines on the Legislative Framework around CWF with links to external websites and supporting documents.

You will also find useful tables to record your internal and external CWF contacts and contact details to key oral health organisations.

NFIS reports and reviews, and the Ministry oral health tool kit, are listed to help provide relevant CWF information.

If you would like a hard copy please see your Oral Health Promoter, as copies were given out at the Oral Health Promoters forum in April.



Information & Resources For Working on Community Water Fluoridation



NFIS
National Fluoridation
Information Service

Regional Public Health
Better Health For The Wellington Region



MASSEY UNIVERSITY
WELLINGTON



NFIS CONSORTIUM PARTNERS:

NFIS
National Fluoridation
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Regional Public Health
Better Health For The Wellington Region



MASSEY UNIVERSITY
WELLINGTON

