

Australian study of new fluoridation scheme confirms significant dental benefits

A study in New South Wales, Australia, has shown significant benefits from the introduction of water fluoridation in the previously non-fluoridated community of Gosford in 2008.¹

Children between 5 and 7 years old had their teeth examined at the start of the scheme. Further surveys were carried out two and four years later.

A 64% reduction in Gosford children's decayed, missing and filled teeth (dmft) within four years of the start of the scheme

By 2012 the average number of decayed, missing and filled teeth (dmft) in Gosford children had fallen by 64% (from 2.02 dmft to 0.72 dmft) to virtually the same as in Wyong, whose water supply has been fluoridated for over 40 years.

Up to 2008, children in Wyong enjoyed much better dental health than their counterparts in (then) non-fluoridated Gosford. Within four years of a fluoridation scheme having started in the latter, the difference between them disappeared.

In the 2008 survey, the dmft rate in (then) non-fluoridated Gosford was about the same as in non-fluoridated Ballina and Byron Shires, also in New South Wales. Whilst between 2008 and 2012 the dmft rate also fell in these communities, the reduction in newly fluoridated Gosford was significantly greater.



Within four years of the start of a new fluoridation scheme in Gosford, the rate of decayed, missing and filled teeth among 5-7 year old children had fallen to the same level as that of Wyong, where water had been fluoridated for over 40 years.

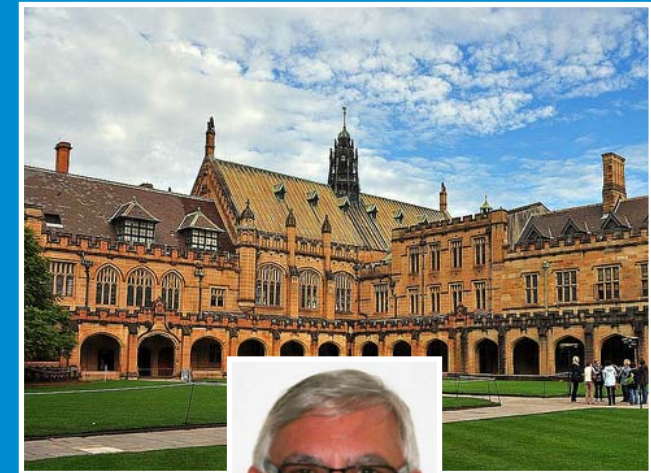
40% difference between dmft rates in newly fluoridated Gosford and non-fluoridated Ballina and Byron Shires

By 2012 children in newly fluoridated Gosford had, on average, 40% fewer decayed, missing and filled teeth than those in the two non-fluoridated areas (0.72 dmft compared with 1.21 dmft).

The study took account of children's socio-economic status, toothbrushing habits and consumption of sugary drinks in all four of the areas being compared. The large differences found between the fluoridated ones and the non-fluoridated ones are therefore after such factors – all of which may affect children's risk of tooth decay – had been reflected in the calculations.

The authors of the study, led by Professor Andy Blinkhorn at the University of Sydney, conclude that the fluoridation of water supplies offers children in communities such as Gosford and Wyong better dental health than those who do not have access to this public health measure. Further, they point out that whilst changes in behaviour conducive to good oral health are often difficult to achieve, fluoridation delivers a low level of fluoride in the mouth on a frequent basis.

2008: before Gosford was fluoridated		2012: after Gosford was fluoridated	
	Average dmft score for 5 to 7 year old children		Average dmft score for 5 to 7 year old children
Gosford (NF)	2.02 dmft	Gosford (F)	0.72 dmft
Wyong (F)	1.40 dmft	Wyong (F)	0.69 dmft
Ballina and Byron Shires (NF)	2.09 dmft	Ballina and Byron Shires (NF)	1.21 dmft



"The fluoridation of water supplies offers children in communities such as Gosford and Wyong better dental health than those who do not have access to this public health measure."

Professor Andy Blinkhorn, University of Sydney

Benefits over and above those achieved from fluoride toothpaste

Professor Michael Lennon, science adviser to the British Fluoridation Society, commented: “This Australian study is important for a number of reasons. First, it is very recent and, in this respect, updates the evidence base on the impact of new fluoridation schemes. In addition, it helps to confirm that despite general improvements in oral health over the past 30 or so years, water fluoridation is able to provide benefits over and above those achieved from regular toothbrushing with a fluoride toothpaste.”

He added: “What is also striking in this study is the speed with which children in Gosford caught up with their counterparts in the already fluoridated community of Wyong. This is a message that ought to be ringing bells with decision-makers in parts of the UK where tooth decay rates remain stubbornly high. Within four or five years of the start of a fluoridation scheme, significant improvements could be achieved.”

In New South Wales around 96% of the population is reported to be benefiting from water fluoridation. All major Australian cities are now fluoridated, including Sydney, Melbourne, Adelaide, Perth, Brisbane and Hobart.

Postscript - fluoridation due to start in previously non-fluoridated Ballina

In August 2013, the council in non-fluoridated Ballina voted to introduce fluoridation. On 1st September 2015 the Northern Star newspaper, which covers that area of New South Wales, reported that a new fluoridation scheme serving Ballina and a number of other communities would start ‘within the week’.

1. Blinkhorn AS, Byun R, Mehta P, Kay M (2015): *A 4-year assessment of a new water fluoridation scheme in New South Wales, Australia*. International Dental Journal, 65(3), 156-163.



Professor Michael Lennon,
science adviser to the
British Fluoridation
Society

**A key message for decision-makers
in the UK:**

*“Within four or five years of the start of
a fluoridation scheme, significant
improvements in children’s dental
health could be achieved.”*