

Fluoridation

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In this issue we look at two particularly important recent publications, the recent guidance from the National Institute for Health and Clinical Excellence (NICE) on prophylaxis against infective endocarditis, and a systematic review from the Australian National Health and Medical Research Council which looks at the recent evidence relating to the efficacy and safety of public health fluoride interventions.

Water fluoridation is set to become a hot topic here in the UK over the summer as the South Central Strategic Health Authority will launch a 3-month public consultation for a fluoridation scheme to tackle high levels of tooth decay in the city of Southampton (Hampshire, UK). The last time this journal looked at water fluoridation was in 2002¹ following the publication of the York review by McDonagh *et al.*² The Australian review, which used the same inclusion criteria as the York one, only found one additional study and this did not affect the York conclusions. In relation to reducing the levels of dental caries, McDonagh and colleagues did show that fluoridation was likely to have a beneficial effect but this ranged from a substantial benefit to a slight detrimental effect on children's teeth (www.york.ac.uk/inst/crd/fluorid.htm)² This is in marked contrast with the conclusions of the Australian review which

states, "The existing body of evidence strongly suggests that water fluoridation is beneficial at reducing dental caries."

This overstating of the evidence does few favours to the scientific community, only serving to deepen public mistrust of science and scientists, adding to the already entrenched views of pro- and anti-fluoridation lobbies. The paucity of reliable good-quality evidence identified by the York review led to its authors suggesting that research is required in three areas, namely dental caries, adverse effects and economic evaluations. The Department of Health then asked the Medical Research Council (MRC) to also consider what further research was needed. The MRC detailed a number of areas for further research,³ only some of which have been conducted, leaving some of the more important questions still to be answered:

- What is the impact of water fluoridation on caries reduction in children against a background of widespread use of fluoride toothpaste?
- How do the effects of water fluoridation vary with social class?
- What are the economic impacts and the effects of fluoridation on health and wellbeing beyond the usual measures of decayed, missing or filled teeth?
- What are the effects of fluoridation on dental health in adults?

The 2005 Scottish Intercollegiate Guidelines Network guideline on caries prevention in preschool children⁴ also called for, "A robust evaluation of the benefits of water fluoridation, as well as the potential risks of fluorosis", saying this "should be a health priority".

The important issues relating to the debate on whether fluoride should be added to our water were outlined by Cheng *et al.*⁵ and these should be the focus of the debate for the Southampton public consultation rather than the more entrenched positions of the pro- and anti- campaigners. If the decision is taken to go ahead with fluoridation in Southampton, high-quality research following the move should be funded by the government that is robust enough to answer the majority of the questions raised by the MRC and others. Failure to do so would be an abdication of the duty the Health Authority and government has to populations they serve.

1. Richards D, Water Fluoridation-controversy or not. *Evid Based Dent.* 2002; 3:31.
2. McDonagh M, Whiting P, Bradley M, *et al.* A systematic review of public water fluoridation. York: University of York National Health Service Centre for Reviews and Dissemination; 2000.
3. Medical Research Council Working Group Report. Water Fluoridation and Health. London: Medical Research Council; 2002.
4. Prevention and management of dental decay in the pre-school child: a national clinical guideline. Edinburgh: Scottish Intercollegiate Guidelines Network; 2005.
5. Cheng KK, Chalmers I, Sheldon TA. Adding fluoride to water supplies. *Br Med J* 2007; 335(7622):699-702.