

Water Fluoride: As Much Harm As Good

published in [Network Review No 74](#)

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The report of the Systematic Review of the scientific evidence on the benefits and hazards of water fluoridation was published on 6th October. This was commissioned from the NHS Centre for Reviews and Dissemination at York University by the Department of Health eighteen months ago, to resolve for once and for all the heated controversy that surrounds this issue. Our Director got the unenviable job of sitting on the expert Advisory Panel, to see fair play.

Fluoridation advocates and opponents alike were convinced from the start that this review would conclude, like others before it, that water fluoride is a safe and effective public health measure; but to us this seemed unlikely. The method of review was extremely rigorous, ruthlessly excluding any study that did not stand up and ranking the survivors for quality. The term "evidence-based medicine" was invented in England by an MRC scientist, and Cochrane Reviews are the fairest in the world. Furthermore, the young team responsible for this review proved very capable, fair minded and ably led - remarkably so since all were trained in an academic tradition that assumed fluoride was an unmitigated blessing.

The most reasonable doubt about the process was its limitation to fluoride in water, since evidence gathered from Good HealthKeeping's fluoride testing laboratory suggests most fluoride exposure is now from other sources - dental toiletries, tea and foods processed in fluoridated water. As a result the reviewers were unable to explore what diseases might result from total fluoride exposure. It was always unlikely that diseases such as cancer and hip fracture would relate strongly to fluorides in water alone, and the review confirmed this.

The main surprise was the wide extent of dental fluorosis - distorted structure of the tooth enamel producing unsightly markings. The slightest grades may be confused with other tooth damage and are not easy to see, but grades severe enough to cause concern - and therefore require correction - would affect one eighth (12.5%) of the population consuming water fluoridated at 1 part per million (ppm). The return for this is an increase of 15% in the proportion of people without any dental decay at all - an almost exact trade-off. Put another way, for every seven people treated with fluoridated water one more would have perfect teeth but one more would have fluorosed teeth. One in three of the fluorosed mouths would be severe enough to cause concern. (Much of the fluorosis is due to other sources of fluoride, so the proportion affected even at low water levels is quite high).

This is not just a dental problem. Dental fluorosis is recognised, both by the Department of Health and by MRC scientists, as an indication of early, more generalised fluoride toxicity elsewhere in the body. If it is in the teeth it is in the bones, where high enough levels may accumulate to weaken them. The studies reviewed were not continued for long enough to spot the lifetime effects of this.

There is no case here for widening the scope of fluoridation schemes. On the contrary, careful research should be urgently commissioned to fill the embarrassing gaps in our knowledge. The Good HealthKeeping fluoride laboratory is still the only way private citizens can check their fluoride consumption - NHS GPs have almost no facilities.

If the Government is as good as its word the law on fluoridation will not change, and artificial fluoridation will not be extended. Better research, and greater alertness by doctors for adverse fluoride effects in individual patients, should in time end mass fluoridation for good.

Key Review Points:

- Evidence quality was poor, and quantity very limited;
- Most studies could have been biased because dental assessors (of both caries and fluorosis) usually knew where the study subjects lived;
- Dental benefits are less (15%) than have been claimed (25-60%);
- Dental disfigurement (12.5%) is far higher than expected;
- There is almost no evidence for a reduction of social class inequalities by water fluoridation;
- Far too little evidence exists to justify any assumption that **artificial** fluoridation is as safe as 1 ppm calcium fluoride occurring naturally;
- The review does not tackle the effects of total fluoride exposure (except, by accident, its impact on dental fluorosis).

Reprinted from Good HealthKeeping, October, 2000

Dr. Peter Mansfield is the Founder of the Templegarth Trust, which encourages direct action for health.