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Water fluoridation in England linked to higher rates of underactive thyroid

Switch to other approaches in bid to protect tooth health, say researchers

Water fluoridation above a certain level is linked to 30 per cent higher than expected rates of underactive thyroid (hypothyroidism) in England, suggests research published online in the ***Journal of Epidemiology & Community Health***.

The findings prompt the researchers to call for a rethink of public health policy to fluoridate the water supply in a bid to protect the nation's tooth health.

In England, around 10 per cent of the population (6 million) live in areas with a naturally or artificially fluoridated water supply of 1 mg fluoride per litre of drinking water.

The researchers looked at the 2012 levels of fluoride in the drinking water supply, using data provided by the Drinking Water Inspectorate for individual postcodes.

And they looked at the national prevalence of underactive thyroid diagnosed by family doctors in England in 2012-13 and recorded in their national quality and incentive scheme (QOF) returns. Complete data were provided for 7935 general practices out of a total of 8020.

The researchers also carried out a secondary analysis, comparing two built up areas, one of which (West Midlands)

was supplied with fluoridated drinking water, and the other of which (Greater Manchester) was not.

After taking account of influential factors, such as female sex and older age, both of which are linked to increased risk of hypothyroidism, they found an association between rates of the condition and levels of fluoride in the drinking water.

In areas with fluoride levels above 0.7 mg/l, they found higher than expected rates of hypothyroidism than in areas with levels below this dilution.

High rates of hypothyroidism were at least 30% more likely in practices located in areas with fluoride levels in excess of 0.3 mg/l. And practices in the West Midlands were nearly twice as likely to report high rates of hypothyroidism as those in Greater Manchester.

This is an observational study so no definitive conclusions can be drawn about cause and effect, and the researchers emphasise that they were not able to take account of other sources of fluoride found in dental products and food and drink.

But they point out that their findings echo those of previous research, and that while they were only able to look at diagnosed hypothyroidism, there might also be other cases of impaired thyroid function that have not yet been diagnosed—and treated.

“Consideration needs to be given to reducing fluoride exposure, and public dental health interventions should stop [those] reliant on ingested fluoride and switch to topical fluoride-based and non-fluoride-based interventions,” they conclude.

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Are fluoride levels in drinking water associated with hypothyroidism prevalence in England? A large observational

study of GP practice data and fluoride levels in drinking water
www.jech.bmj.com/lookup/doi/10.1136/jech-2014-204971