September 2014

Fluoridation News

Tooth decay and hospital admissions to extract decayed teeth are lower in fluoridated areas, says Public Health England report

A water fluoridation monitoring report from Public Health England (PHE) has found lower levels of tooth decay among children in fluoridated areas than non-fluoridated areas, with no evidence of harm to health. (1) Published in March 2014, the report found a range of dental health benefits for children living in fluoridated parts of England:

Fewer young children admitted to hospital for tooth decay

In fluoridated areas there are 45% fewer hospital admissions of children aged one to four for dental caries – mostly for extraction of decayed teeth under a general anaesthetic – than in non-fluoridated areas.

This echoes a study published in the *British Dental Journal* in the same month that found much higher hospital admission rates in the mainly non-fluoridated North West of England for tooth extractions under a general anaesthetic among 0-19 year olds than in the mainly fluoridated West Midlands.

Lower prevalence of tooth decay among five-year olds

- Five-year olds in fluoridated areas are 15% less likely to have had tooth decay than children of the same age in non-fluoridated areas.
- When deprivation and ethnicity – both important factors for dental health – are taken into account, five-year olds in fluoridated areas are 28% less likely to have had tooth decay.

Public Health England's health monitoring report on water fluoridation says that in fluoridated areas there are 45% fewer hospital admissions of children aged one to four for dental caries - mostly for extraction of decayed teeth under a general anaesthetic - than in non-fluoridated areas.

Lower prevalence of tooth decay among twelve-year olds

- Twelve-year olds in fluoridated areas are 11% less likely to have had tooth decay than children of the same age in non-fluoridated areas.
- When deprivation and ethnicity are taken into account, twelve year olds in fluoridated areas are 21% less likely to have had tooth decay.

Fewer decayed, missing and filled teeth among five-year olds

- The mean number of decayed, missing and filled teeth per five-year old child in non-fluoridated areas was 0.89. In fluoridated areas it was 25% lower at 0.67.

Fewer decayed, missing and filled teeth among twelve-year olds

- The mean number of decayed, missing and filled teeth per twelve-year old child in non-fluoridated areas was 0.71. In fluoridated areas it was 11% lower at 0.63.

Under-estimate of the benefits of fluoridation

Because of the methodology employed in the data analysis for its report, PHE thinks the benefits of fluoridation are under-estimated. This is partly because PHE counted all local authorities with fluoridation schemes covering less than 50% of their populations as ‘non-fluoridated’.

Also, there is the problem of the ‘halo effect’ that blurs the distinction between fluoridated and non-fluoridated areas. The effect is caused by some children going to school in a fluoridated area whilst residing in a non-fluoridated area, and by drinks made with fluoridated water being consumed by children who live in non-fluoridated areas.

THE DENTAL BENEFITS OF WATER FLUORIDATION

Public Health England’s analysis of data from dental health surveys conducted in 2009 and 2012 found that, overall, children in the fluoridated areas of England were less likely to have had tooth decay by the age of 5 or 12 than their counterparts in non-fluoridated areas. On average, they also had fewer decayed, missing and filled teeth.

Greatest impact on children in the most deprived areas

PHE's director of dental public health, Sue Gregory, said: "These findings highlight the important contribution that water fluoridation makes to children's dental health and general well-being. It is notable that the benefits of this public health measure appear to be greatest for children living in the most deprived areas of the country. This is significant for reducing the large differences we see in dental health between deprived and more affluent areas of the country."

This was the first national water fluoridation monitoring report produced by Public Health England, which came into existence in April 2013. Legislation requires that further reports are produced at intervals of no more than four years.

1. Public Health England: *Water fluoridation – health monitoring report for England 2014*

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