

Celebrating 50 years of water fluoridation in Birmingham: 1964 - 2014



THE
NATIONAL ALLIANCE
FOR EQUITY IN DENTAL HEALTH

Birmingham's 50 years of dental health



**Early
gains**

Water fluoridation introduced in 1964 to help combat rampant tooth decay

In the early 1960s tooth decay was rampant among Birmingham children. To help stem the tide, on the advice of its Medical Officer of Health the City Council decided to introduce a water fluoridation scheme.

The necessary plant and equipment were installed at the Elan Valley reservoir in central Wales (the source of the city's water) and the scheme started to deliver fluoridated water to Birmingham residents in 1964.

Tooth decay in Northfield 5-year olds down by 46% within six years of the scheme starting

The benefits of water fluoridation were seen within six years. A study compared the teeth of 5-year olds in the Northfield suburb of Birmingham with those of 5-year olds in (then) non-fluoridated Dudley.

Both communities had similar socio-economic characteristics and, when fluoridation began in Birmingham in 1964, both had similar levels of children's dental health (as measured by the average number of decayed, missing and filled teeth per child).

But when children in this age group were examined in 1970, it was found that the number of teeth affected by decay had dropped by 46% in fluoridated Northfield compared with only a 2% fall in non-fluoridated Dudley. In 1986 Dudley introduced a water fluoridation scheme of its own.

* Beal J, James P (1971). *Dental Caries Prevalence in Five Year Old Children following Five and a Half Years of Fluoridation in Birmingham*. British Dental Journal, 130, 284.

Community dental health service figures showed huge fall in extractions of first and permanent teeth among under-15s

Figures from the Birmingham community dental health services revealed significant improvements in the years following the start of water fluoridation in the city.

Between 1965 and 1981, extractions of deciduous (first) teeth in children aged under 15 dropped from 35,000 to just over 9,000, and extractions of permanent teeth fell from around 11,000 to 3,500.

General anaesthetics for tooth extractions in under-15s fell from 18,000 to 2,000, whilst emergency dental visits because of bad toothache dropped from around 10,250 to 1,500.

Less tooth decay, fewer fillings and fewer

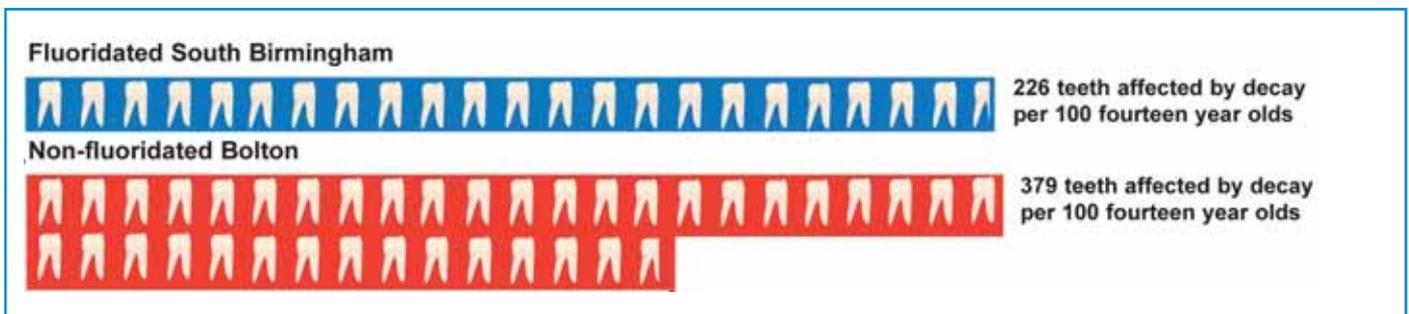
Health benefits from water fluoridation



South Birmingham v Bolton comparison of 14-year olds

In 1987, a study found that 14-year old children in fluoridated South Birmingham had 40% fewer teeth affected by decay than those of the same age in non-fluoridated Bolton. The two communities had been selected for comparison because of their similar socio-economic profiles.

Number of decayed, missing and filled teeth per 100 fourteen year olds (1987 study)



Fewer children with high levels of decay, more children with no decay

In addition, whereas 36% of Bolton 14-year olds examined in the study had experienced five or more decayed, missing or filled teeth, only 15% of the South Birmingham children had been similarly affected. The study also found major differences between the two communities in the numbers of children with and without tooth decay. Around 32% of South Birmingham children examined had no tooth decay at all, compared with just 19% of Bolton children.

* Mitropoulos, CM et al (1988). *Differences in Dental Caries Experience in 14-year old Children in Fluoridated Birmingham and in Bolton in 1987*. British Dental Journal, 164, 349.

er extractions under a general anaesthetic

Birmingham's 50 years of dental health benefits from water fluoridation



How fluoridated Birmingham compares with non-fluoridated Manchester for 5-year old children's teeth

The most recent national survey of 5-year olds' dental health in England was conducted in 2011/12. The results show that children at this age in fluoridated Birmingham have, on average, 34% fewer decayed, missing and filled teeth than their counterparts in non-fluoridated Manchester. Both cities have similarly high levels of social deprivation, a key factor associated with tooth decay.

* NHS Dental Epidemiology Programme Oral Health Survey of Five Year Old Children 2011/12

How fluoridated Birmingham compares with non-fluoridated Manchester for 12-year old children's teeth

The most recent national survey of 12-year olds' dental health in England took place in 2008/09. The results show that children at this age in fluoridated Birmingham have, on average, 42% fewer decayed, missing and filled teeth than their counterparts in non-fluoridated Manchester.

* NHS Dental Epidemiology Programme Oral Health Survey of Twelve Year Old Children 2008/09

How fluoridated Birmingham compares with non-fluoridated Manchester for tooth extractions under a general anaesthetic

A report of the Chief Medical Officer published in 2012 contains information on the number of children aged 1 to 4 admitted to hospital for dental caries, primarily to have decayed teeth extracted under a general anaesthetic.

Data for individual local authorities show that for the years 2009 to 2012 the rate of admissions for Manchester was 639 per 100,000 children, compared with 27 per 100,000 children for Birmingham.

Even allowing for possible variations between the two cities in the way hospital admissions for dental extractions are recorded, it is fair to assume that very young children in Manchester are much more likely than their Birmingham counterparts to need to have teeth removed in hospital under a general anaesthetic.

Writing in the *British Dental Journal*, Professor Ivor Chestnutt from Cardiff University (one of the authors of the York report on water fluoridation) said: "General anaesthesia for the extraction of teeth in children must surely represent the ultimate failure in dentistry."

This briefing was produced and published by:



Despite an overall improvement in dental health over the past 30 years tooth decay remains a significant public health problem in many parts of the UK. Inequalities in dental health are widespread, with children living in the poorest, non-fluoridated communities continuing to suffer unacceptably high levels of tooth decay. The National Alliance For Equity in Dental Health is a partnership of bodies concerned with dental and general public health which aims to campaign to reduce these inequalities. For further information, please contact: sarah.farmer@outlook.com