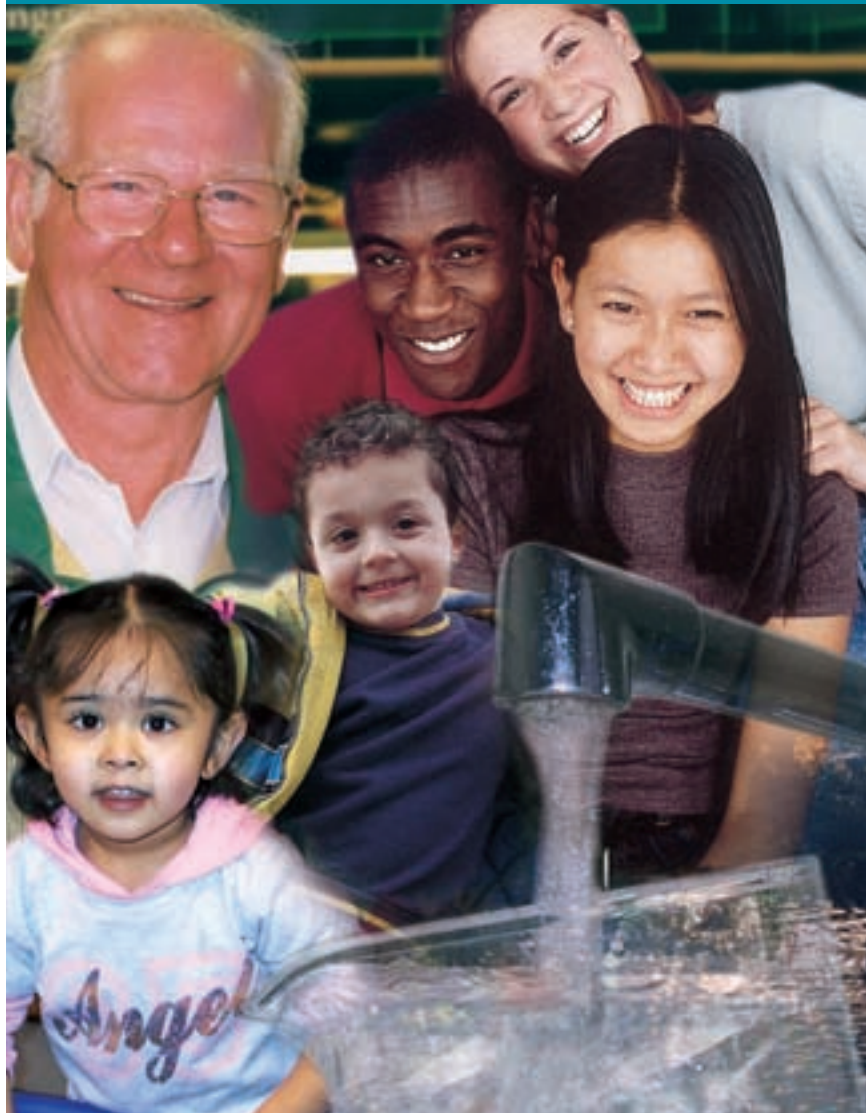


One in a Million

The facts about water fluoridation

2nd edition



*Published by
The British Fluoridation Society
The UK Public Health Association
The British Dental Association
and The Faculty of Public Health*



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The British Fluoridation Society

The British Fluoridation Society was founded in 1969 by a group of concerned professionals anxious to see an improvement in the dental health of the UK population by the implementation of Government policy for water fluoridation. Founder members include Eric Lubbock MP (now Lord Avebury, former Chairman of the Parliamentary Human Rights Group). From its inception the Society has been a multi-disciplinary organisation, and has enjoyed the support of politicians from all political parties. The aims of the Society are:

- To promote improvement of dental health by securing the optimum fluoride content of water supplies (one part per million);
- To promote and co-ordinate medical, dental, educational, and administrative efforts to achieve this;
- To distribute information about dental health.

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The UK Public Health Association

The United Kingdom Public Health Association - known by the initials UKPHA - is an independent voluntary organisation, formed by the coming together of three organisations in 1999 to unite the public health movement in the UK. As a multidisciplinary membership organisation, the UKPHA:

- Brings together individuals and organisations from all sectors who share a common commitment to promoting the public's health.
- Seeks to promote the development of healthy public policy at all levels of government and across all sectors.
- Acts as an information platform and aim to support those working in public health both professionally or in a voluntary capacity.

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The British Dental Association

The BDA is the largest professional association for dentists in the UK, and develops policies to represent dentists working in every sphere, from general practice, through community and hospital settings, to universities and the armed forces. It aims to be a national player in the development of healthcare policy.

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The Faculty of Public Health

The Faculty of Public Health of the Royal College of Physicians is a medical professional organisation which gives independent advice on the public's health. It aims to:

- Promote, for the public benefit, the advancement of knowledge in the field of public health.
- Develop public health with a view to maintaining the highest possible standards of professional competence and practice, and to act as an authoritative body for consultation in matters of education or public interest concerning public health.

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Foreword

One in a Million

There have been major improvements in oral health over the past twenty years, but despite this there remains persistent oral health inequalities across the United Kingdom. Dental disease broadly correlates with social deprivation, the results of which are only too evident in terms of pain from dental decay, time off school and work, and young children having teeth extracted under general anaesthetic.

The West Midlands and parts of the North East of England are notable exceptions, and have some of the best oral health in the UK, despite having significant areas of multiple deprivation. The almost unanimous agreed reason for this remarkable success story is that a large proportion of the population in these areas receives fluoridated drinking water and has done so for a considerable period of time. Indeed seven out of the ten Strategic Health Authorities with the best oral health in the UK have naturally occurring or artificially fluoridated water supplied to a varying proportion of their populations.

It has been the policy of successive governments that health communities in areas of high dental disease should have the option of fluoridating their water. The present government signalled its support for the targeted use of fluoridation to reduce oral health inequalities in *The Health of the Nation* and *Modernising NHS Dentistry* (issued as part of the *NHS Plan*). The *Independent Inquiry into Inequalities in Health* (the Acheson Report) also commended fluoridation.

Previous legislation did not place the water industry under a statutory obligation to fluoridate when asked to do so by health authorities. This has resulted in no new fluoridation schemes

since at least 1985. Therefore, I was very pleased when in 2003 both Houses of Parliament voted by a considerable margin to correct this anomaly under the new Water Industry Act 2003.

We are anticipating that with secondary legislation in place by the end of the year those Strategic Health Authorities who wish to proceed to consult on new water fluoridation schemes will now do so in the knowledge that, providing their local populations agree, water fluoridation will happen.

One in a Million is an excellent resource for Primary Care Trusts, Strategic Health Authorities and the public as they decide whether or not to take water fluoridation forward in their localities. It chronicles the history and effectiveness of this important public health measure and importantly also discusses its safety. I commend it to all local decision-makers as they enter into the process of local consultation required by the new Act and I am very pleased to be able to give it my full endorsement.



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April 2004



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Preface

Tackling poor oral health

There are many reasons why people, from young children to older adults, suffer from poor oral health – from the social and economic conditions in which they live, to their personal habits, including their diet and standard of oral hygiene. There are a number of steps that individuals can take on a personal basis to prevent oral problems

occurring. These include: reducing their consumption and especially the frequency of intake of drinks, confectionery and foods containing sugars; brushing their teeth thoroughly twice every day with a fluoride toothpaste; and going to the dentist for an oral

examination every year. Educational campaigns are designed to give people the information they need to choose a healthier lifestyle, but delivered in isolation, they are far from a complete solution.

Fortunately, there is a broad range of actions that can be taken on a community basis to help tackle the issue. These can help to make the healthier choices the easy choices. An example would be helping children to cut down on sugary foods and drinks by having healthier options available in the school canteen at lunchtime, and making drinking water freely available to pupils throughout the school day. Public policies can also promote health, for example, legislation enabling communities to opt for water fluoridation if this is suitable for their area, or if fluoridation is impractical, using other methods of delivering the benefits of fluoride, such as the distribution of free toothpaste for children at high risk of dental decay. Finally, health promotion can include: strengthening community action, so that people themselves have more power to develop ways of improving their lives, rather than having experts ‘doing things’ to them; and reorienting health services, away from purely curing illness to preventing it as well.

In this context, therefore, water fluoridation is one of many strategies that are available for improving oral health. A different combination of approaches will be right for different areas, and in geographical localities of high dental need, fluoridation is a safe, effective and cost-effective option. Where water fluoridation is technically feasible, this report will help decision-makers in health and local authorities to decide if it is a public health measure that they want to pursue, and to consult their communities about it so that they can make a genuinely informed choice.

Water fluoridation – a brief history

During the 1930s researchers discovered that people living in areas where drinking water contained naturally elevated fluoride levels experienced less tooth decay. Further work demonstrated that, in a temperate climate, a level of 1 part of fluoride per million parts of water (1ppm) was ‘optimal’ for the prevention of tooth decay. Researchers then hypothesized that the benefits of naturally occurring fluoride might be replicated in communities where the drinking water was low in fluoride by artificially adjusting the level to around 1ppm.

In 1944, Dr Trendley Dean and his colleagues established a community intervention trial in Grand Rapids, USA, to test this hypothesis. The results of their pioneering trial, along with others undertaken elsewhere in the US, Canada, the Netherlands, New Zealand, East Germany, and the UK showed clear benefits to dental health from drinking water ‘artificially’ fluoridated at 1ppm.

In 1953, the UK Medical Research Council recommended that the Government should send an expert committee to visit the North American trial sites. On the basis of this committee’s report the government established demonstration schemes in Anglesey, Watford and Kilmarnock, publishing detailed reports after 5 and 11 years. Impressed by the results, local authorities in Birmingham and Newcastle established new fluoridation schemes and by the early 1980s around 10% of the UK population were benefiting from these.



Monument commemorating 50 years of water fluoridation in Grand Rapids, Michigan. The five pillars of the white marble monument designed by Stephen H Pierpoint represent the five decades of fluoridation, and are inscribed with a brief history of water fluoridation. The monument is located on the riverside Louis Campau Promenade in Grand Rapids, and incorporates a drinking fountain which delivers fluoridated water.

Despite the success story of water fluoridation in Birmingham and Newcastle, subsequent efforts to extend water fluoridation in the UK beyond the current 10% have been thwarted by inadequate legislation and a small but vocal anti-fluoridation lobby. As a result, tooth decay remains an intransigent public health problem in socially deprived, non-fluoridated communities throughout the UK. The extension of water fluoridation from the current 10% to around 25-35% of the UK population - targeted to communities with high levels of disease - would make substantial inroads towards reducing the still wide inequalities in dental health.

Fluoridation in the future

After decades of frustration over water fluoridation, there is light at the end of the tunnel. We now have in place a new Act that will enable health authorities to implement water fluoridation in areas of high need where there is community support. This publication, originally produced in 1994, has been thoroughly revised and updated to provide a balanced, comprehensive and reliable reference document, as we enter what should now be a period of successful implementation.

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