

## *The facts about water fluoridation*

All water supplies contain fluoride naturally. Water fluoridation is the process of 'topping up' the natural fluoride content of public water supplies to a level that is known to improve dental health safely and effectively. In temperate climates that level is 1 part of fluoride per million parts of water (1 ppm); this is a level that occurs naturally in many places throughout the world.

## *What are the dental benefits?*

Despite an overall improvement in dental health over the past 30 years, tooth decay remains a significant public health problem in some parts of the UK. Inequalities in dental health are widespread throughout the UK, with children living in the poorest, non-fluoridated communities continuing to suffer unacceptably high levels of tooth decay. Many studies have confirmed that water fluoridation reduces tooth decay, and has no harmful side effects. Children are the group that benefit most from water fluoridation, but adults benefit too.

## *Is dental fluorosis (marks on the teeth) a serious problem?*

Dental fluorosis appears as mottling or marks on the tooth surface. It has been recognised for over 70 years and is known to be associated with fluoride ingestion. In the UK, fluorosis is mainly a cosmetic problem, with the more severe unsightly and cosmetically unacceptable forms being uncommon in both fluoridated and non-fluoridated areas. So, whilst dental fluorosis is not a serious problem, to reduce the possibility of excessive fluoride intake by young children, parents are advised to use only a smear or small pea sized piece of toothpaste and to supervise their children's tooth brushing. Children who are at low risk of tooth decay, living in a fluoridated area, or receiving fluoride supplements, should use a lower strength fluoride toothpaste.

## *Are there any effects on general health?*

Oral health and general health are strongly linked. Fluoridation improves a population's dental health, and as a consequence its general health. Studies and independent reviews of the relevant medical and scientific literature over many years have consistently failed

to find evidence that water fluoridation has *any* effect on the health of the body other than reducing tooth decay.

## *Who takes decisions on fluoridating water supplies?*

Local health authorities are responsible for deciding in principle whether fluoride should be added to local water supplies. They have to consult the local population, and then ask the water supplier to make the necessary technical arrangements. Health authorities, with the aid of Government grants, will meet the total cost of water fluoridation schemes.

## *How is water fluoridated?*

Fluoridation takes place at the water treatment works where a calculated solution of fluoride is added to water under close control. The chemicals used for water fluoridation are specifically manufactured to very high quality standards, and must meet Department of Environment purity specifications. There is no difference between fluoride added to water supplies and that which occurs naturally. Water fluoridation has an excellent safety record.

## *Where is water fluoridated at present?*

In the UK around 6 million people (approximately 10% of the population) currently receive a fluoridated water supply. The West Midlands being the most extensively fluoridated region.

Worldwide around 400 million people benefit from a fluoridated water supply, with the US being one of the most extensively fluoridated countries.

## *What is the impact on the environment?*

Fluorides are very common in the environment. Reviews of the literature and environmental impact assessments have found no evidence of any adverse environmental effects resulting from water fluoridation. Water fluoridation could be described as *environmentally friendly* since it ensures maximum utilisation of natural resources and reduces waste.

## *How much support is there for water fluoridation?*

There is strong professional and public support for water fluoridation. Worldwide, every major health body that has ever considered

the evidence, including the World Health Organisation, has confirmed the effectiveness of water fluoridation and found no evidence of harm. Independently conducted opinion surveys consistently show that around 70% of the public believe that fluoride should be added to water supplies to prevent tooth decay.

#### *Is it ethical to fluoridate water?*

From an ethical perspective, water fluoridation can be seen as replicating the benefits already conferred on those communities whose water supplies naturally contain optimal levels of fluoride. Fluoride-free drinking water is not a basic human right but a question of individual preference. However, in a society where people come together for mutual benefit, such personal preferences must be balanced against the common good – particularly when the main beneficiaries are children as they are least able to help themselves.

#### *Is it cost-effective to fluoridate water supplies?*

Water fluoridation is highly cost-effective in areas where tooth decay rates remain high, and the local water treatment works serve large populations.

#### *What progress has been made recently in fluoridating water in the UK?*

Legislation enacted in 1985 is widely acknowledged to have been a failure. No new schemes have been introduced under that legislation. However, following calls from health professionals and the water industry, in 2003 the Government changed the law, so that where there is strong community support for water fluoridation it can be implemented. There is a strong case for targeted water fluoridation in parts of the UK, particularly the North of England, Scotland, Wales, Northern Ireland and Inner London.

#### *What should happen next?*

Local strategic health authorities have the power to decide whether fluoride should be added to the water supplies consumed by their populations. If formal consultation demonstrates local support, the Strategic Health Authority may then request the relevant water supplier to make the necessary technical arrangements, and the water company will be obliged to do so.

The legislative framework should be in place by the end of 2004; meanwhile Primary Care Trusts, in liaison with Strategic Health Authorities, should consider water fluoridation without delay – especially in areas where dental health is poor.