

The ethics of water fluoridation

KEY POINTS

- Dental caries (tooth decay) is still a major public health problem.
- Major inequalities in dental health persist between different social groups.
- Fluoridation replicates a naturally occurring benefit.
- There is no 'right' to drink fluoride-free water, merely a personal preference.
- Fluoride is a nutrient, not a drug.
- There is a duty to protect citizens, especially the most vulnerable.
- A 'stewardship model' of society places emphasis on caring for one another.



1. The ethical dimension to health – from seat belts to tooth decay



Ethical issues are inextricably part of public health decisions. There is, for example, an ethical dimension to decisions about the banning of smoking in public places and laws requiring drivers and their passengers to wear seat belts.

Some people take the view that society should not oblige individuals to behave in ways that are beneficial either to their own health or to the health of others. These actions, they argue, should be left to individual choice.

Opposition to seat belt legislation

In June 2007, an article in the journal of the Royal Statistical Society started with the words: “It is a bad law. It is based on a dangerous, liberty-threatening principle. It hasn’t worked. It’s unfair. It should be repealed.” This was all about seat belt legislation (1).

In Britain, the United States and other countries, there are campaigners doing their best to give drivers and passengers the freedom not to belt up. They claim that road deaths have risen since the legislation. They also claim that seat belts cause deaths to drivers, passengers and pedestrians. By contrast, Warwickshire police report that in 2005 one in three roads deaths was directly attributable to people not wearing a seat belt.



2. Individual preference or the collective good – where does our duty lie?



What the debate about seat belts highlights is that some individuals recoil against collective action to prevent or reduce a particular harm, whether that harm involves deaths caused by people being catapulted through a windscreen at 70 mph or the trauma experienced by a child who needs several badly decayed teeth extracted under a general anaesthetic.

Ethical debate at the centre of public health policy-making

Ethical arguments have always been at the centre of public health. The introduction of public sewerage and water supply systems in the 19th and 20th centuries generated heated arguments at the time. Some people have vigorously opposed, and continue to oppose, the process of chlorination to kill harmful bacteria and make water fit to drink.

But what exactly do we mean by ethics? According to the Oxford English Dictionary, ethics are about the principles of human duty. If that is the case, what is our duty in relation to tooth decay and water fluoridation? Ethically, do we have a duty to fluoridate? Do we have a duty not to fluoridate?



3. Dental caries – still a major public health problem, despite some improvements

Dental caries is one of the commonest diseases in terms of the numbers of people affected. Children are particularly vulnerable.

Despite reductions in prevalence over the past 40 years, dental caries remains a major public health problem. According to the national child dental health survey in 2003, 57% of all 8-year olds have experience of caries, and 43% of all 5-year olds (2).

Significant variations in dental health experience

National statistics mask major variations in dental health experience between children in different parts of the country, and between children in different social groups. Significant dental health inequalities persist.

For example, the West Midlands Public Health Observatory found that children in the 20% most socially deprived electoral wards in the region (based on the index of multiple deprivation) had nearly two more teeth decayed, missing and filled than those from the most affluent wards (3).



Children from the most deprived areas normally have more tooth decay decayed than those from the most affluent areas.



4. How fluoridation may help to reduce dental health inequalities

Findings of systematic review of fluoridation by the University of York

There is evidence to suggest that fluoridation may narrow the dental health gap between affluent and socially deprived children.

Published in 2000, the report of a systematic review carried out by a research team based at the University of York showed that, from the studies available, the average difference in numbers of decayed, missing and filled teeth among children from the most affluent and most socially deprived groups was reduced by half in fluoridated communities compared with non-fluoridated ones (4).

However, the authors of the York report advise caution in interpreting the results of their analysis, arguing that there were insufficient studies of high enough quality available to them to be able to make definitive statements about the impact of fluoridation on dental health inequalities.

How children in some socially deprived but fluoridated parts of England have better dental health than children in some affluent, non-fluoridated communities

It is noteworthy that children from some of the most socially deprived parts of the Midlands where the water is fluoridated – such as Birmingham, Sandwell and Walsall – have better teeth than children from non-fluoridated communities in more affluent parts of the country.

Differences in levels of tooth decay between the most affluent and most socially deprived communities appear to be lower in fluoridated areas.

For example, according to a national survey of children's dental health in 2005/06 (5):

- In fluoridated Heart of Birmingham PCT (the most socially deprived PCT in England), 5-year olds had an average of 1.35 teeth decayed, missing and filled, compared with 1.78 among children of this age in non-fluoridated Herefordshire (in the most affluent third of PCTs) and 1.46 among those in non-fluoridated Buckinghamshire (the 2nd most affluent PCT in England).
- In fluoridated Sandwell PCT (the 14th most socially deprived PCT in England), 5-year olds had an average of 0.99 teeth decayed, missing and filled, compared with 1.53 in non-fluoridated South Gloucestershire (the 4th most affluent PCT in England) and 1.09 in non-fluoridated Richmond and Twickenham (the 3rd most affluent PCT in England).

An analysis published in 1999 examined the tooth decay rates of five year olds in seven fluoridated communities matched with seven comparable – in socio-economic terms – non-fluoridated communities. Townsend scores were used to define relative levels of deprivation (6).

The analysis found that, on average, children in fluoridated communities had about half the level of tooth decay experienced by children in non-fluoridated ones. The study also showed that the differences in dental health between children from affluent and socially deprived groups in fluoridated communities were smaller than the differences between children from these socio-economic groups in non-fluoridated communities.



Children who have the highest levels of tooth decay stand to benefit most from fluoridation.

5. The ethical imperative to take positive action for promoting public health

Given that there is evidence to show that fluoridation does reduce tooth decay, and given that socially deprived children suffering the highest levels of decay may be among those who stand to benefit most, it could be argued that there is an ethical imperative to take positive action.

Morally unacceptable not to act

As **Lord Colwyn**, a practising dentist, put it during the Parliamentary debates on the Water Act 2003: “Is it morally acceptable to allow children to suffer the pain and discomfort of decayed teeth and allow them to experience the trauma of tooth extraction, sometimes under general anaesthetic, when we know of a simple way of adjusting the concentration of a naturally occurring element that goes a long way to alleviating these problems?”



Counting the cost of not fluoridating water

During the same debate, **the Lord Bishop of Newcastle** highlighted the consequences of not fluoridating water supplies when he said: “I cannot think of another measure that could produce such a health gain for so many. The cost of not fluoridating is paid for by the continued suffering and poor dental health of some of the vulnerable groups in our society.”

Averting the risks of anaesthesia for extracting teeth

A former **President of the Royal College of Physicians**, **Lord Turnberg**, stressed the life-saving potential of fluoridation when he said: “Children with caries often require a general anaesthetic for treatment. While general anaesthetic for children is fairly safe, there are clearly determined risks. Every so often one reads of a disaster from dental anaesthesia. So preventing even the rare occurrences alone seems a valuable, worthwhile aim.”



Water supplies in some places have the same amount of naturally occurring fluoride as water supplies that have been artificially fluoridated.

6. Replicating a natural benefit by making good a fluoride deficiency in some water supplies

The views of legislators such as Lord Colwyn, Lord Turnberg and the Lord Bishop of Newcastle are supported by one of the country's leading thinkers in bioethics, **John Harris, the Professor of Bioethics at the University of Manchester.**



Professor Harris takes full account of the fact fluoride occurs naturally in all water supplies, and that in some water supplies the fluoride is present at exactly the same concentration as used in fluoridation schemes. It was the dental benefits enjoyed by people in naturally fluoridated communities that first drew medical scientists' attention to the potential for reducing tooth decay on a much wider basis.

Having assessed the evidence, Professor Harris wrote: "Fluoridation is perfectly ethical because it is replicating a situation which occurs naturally in some places where fluoride already exists in water at the optimum level of one part per million parts of water." (7)

Not possible to drink fluoride-free water

In other words, it is not possible to drink fluoride-free water. Nature has already determined its presence. Everyone is currently drinking water containing fluoride. The problem is that, for the majority, the level of fluoride is not high enough to confer any measurable dental benefit. At 0.1 or 0.2 parts of fluoride per million parts of water, for example, there is no reduction in tooth decay. But at or around 1 part of fluoride per million parts of water, there is.

In places such as Hartlepool and Uttoxeter, where there is 1 part of natural fluoride per million parts of water, there is no need to add any more fluoride. Local residents already enjoy the optimum protection against tooth decay that nature can bestow on them. There is no suggestion that the health of people in these communities is in any way impaired by natural fluoridation at this level.

7. No campaign to remove naturally occurring fluoride from water or to stop people drinking tea

Within the UK, about 330,000 people are drinking water that is naturally fluoridated at or around the optimum level for dental health.

No one appears to be arguing for this naturally occurring fluoride to be taken out the water, even though in the supplies that consumers receive in their taps the naturally occurring fluoride is identical to the fluoride that has been added at the waterworks in areas covered by fluoridation schemes.



Nor does there appear to be an active campaign to stop people from drinking tea, whose leaves contain between 100 and 200 parts per million of fluoride naturally. After being boiled for drinking, the infused tea retains between about one and four parts per million of fluoride, even when the tea has been made with water from a non-fluoridated area.

Anyone who thinks that adding minute quantities of fluoride to water is unethical should possibly be equally or even more concerned about tea. However, there is a manifest absence of a pressure group striving earnestly to persuade the British people to abandon their much loved 'cuppa' and there is no ethically driven campaign to try to outlaw the sale of tea.

There is no difference between the fluoride that comes out of the tap in artificially fluoridated Birmingham and naturally fluoridated Hartlepool.

8. No such thing as a right to drink fluoride-free water, merely a personal preference to do so

Chemically, there is no difference between the fluoride that comes out of the tap in artificially fluoridated Birmingham and naturally fluoridated Hartlepool. As Professor Harris argues, fluoridation is a means of replicating a natural state of affairs. There is, he says, “no such thing as the right to drink fluoride-free water, merely a personal preference to do so”.

The debate is therefore about whether individuals who happen to have a personal preference not to drink water containing one part per million of fluoride should be able to prevent society from acting collectively to ensure that everyone enjoys the protection against tooth decay provided by this public health measure.

9. Fluoride is a nutrient, not a drug

The issue of personal liberty versus the public good has been taken up by the well-known international human rights campaigner, **Lord Avebury**. No one could say this former chairman of the Parliamentary Human Rights Committee was slow to champion the cause of individual freedom. Lord Avebury dismisses as invalid the so-called libertarian arguments of those who oppose fluoridation on ethical grounds.



Not comparable to adding a substance that is not ordinarily found in water

Writing in the British Dental Journal, Lord Avebury has said: “Fluoride is a natural constituent of water supplies, as indeed it is of many foods. The adjustment of the quantity to an optimum level cannot be compared with the addition to water of a substance not found there ordinarily.” (8)

What is at stake is the erosion of millions of teeth and the resultant suffering and misery which fluoridation would go far to prevent.

Lord Avebury has also rejected claims that fluoridation constitutes a form of mass medication, pointing out that adding fluoride to water is not a means of curing a disease. He said: “A substance which has the effect of maintaining medical or dental health is more in the nature of a food or a nutrient than a medicine.”

The same conclusion was reached by a New Zealand commission of inquiry into the fluoridation of public supplies in 1957. Its report states that “fluoridation is not a drug but a nutrient and fluoridation is a process of food fortification”. (9)

No consumer has the right to dictate the chemical composition of water

For Lord Avebury, the ethical debate about fluoridation can be summarised as follows: “No consumer has the right to dictate the chemical composition of water, a recipe for anarchy. What is at stake is not the erosion of liberty but ...the erosion of millions of teeth and the resultant suffering and misery of thousands of children which fluoridation would go far to prevent.” (8)



10. A duty to protect citizens from dental caries, especially the most vulnerable ones

Verdict of Irish High Court



In December 1960, the Irish Parliament (Oireachtas) passed the Health (Fluoridation of Water Supplies) Act, which gave the Minister for Health the power to require health authorities to arrange for fluoridation of water supplies for everyone connected to the public water supply system. Local authorities - the bodies responsible for water supplies - were obliged by this legislation to co-operate with health authorities in implementing the policy.

Following the passage of the Act, a resident of Dublin applied to the Irish High Court to have it overturned on the grounds that it was unconstitutional. In a hearing lasting 65 days, the counsel for the plaintiff argued that the Act had overridden the inalienable rights of the individual citizen, which the State had a duty to respect and, as far as practicable, to defend by its laws. These rights, it was argued, included that of 'bodily integrity'.

Personal rights not unlimited

In his final judgement, delivered in 1963, **Mr Justice Kenny** stated: "None of the personal rights of the citizen are unlimited: their exercise may be limited by Parliament (Oireachtas) when the common good requires this." (10)

He added: "When dealing with controversial social, economic and medical matters, Parliament has to reconcile the exercise of personal rights with the claims of the common good and its decision on the reconciliation should prevail unless it was oppressive to all or some of the citizens or unless there is no reasonable proportion between the benefit which the legislation will confer on the citizens or a substantial body of them and the interference with the personal rights of the citizen."

*Need to reconcile
personal rights with
the common good*

On the question of bodily integrity, Mr Justice Kenny accepted that it would be oppressive to impose on a country's citizens any process which might be dangerous. But he also accepted arguments that fluoridation was safe and that it constituted no danger to individuals' bodily integrity. He concluded: "In my judgement, the fluoridation of the public water supplies in this country is not a violation of any of the plaintiff's constitutional rights and this action must be dismissed."

Verdict of the Supreme Court

The judgement of Mr Justice Kenny was upheld by the Irish Supreme Court in July, 1964. **Chief Justice O'Dalaigh** commented: "The effect on the teeth (of fluoridation) is demonstrably beneficial. The purpose and the effect of fluoridation is to improve children's teeth and so, indirectly, their health. These benefits are to a great extent carried forward into adult life". (11)

An obligation on the community to make good the fluoride deficiency in water in order to protect citizens from dental caries



Rejecting the plaintiff's contention about the possible violation of bodily integrity, the Supreme Court stated: "Fluoride ions occur naturally in water and in many foods. The Act has for its object where water is deficient in fluoride ions to bring it to the optimal level by fluoridation. Fluoride ions thus added differ in no respect from fluoride ions naturally occurring in water.

"In modern life the provision of public water supplies in cities is necessarily a community obligation, and if water occurring naturally is deficient in some of its wholesome elements, it is the right if not the obligation of the community to make good the deficiency where this can be done without harm or danger to the public.

"The desirability of adding to food or water elements in which they are deficient or removing elements which may be harmful has been widely recognised and frequently exercised. Water is chlorinated, salt iodised, vitamins added to margarine, flour fortified whenever these measures are shown to be beneficial."

Dental caries is the type of danger from which the State has the duty to protect its citizens.

The Supreme Court went on to develop the argument that the State has a duty to protect its citizens from disease. It said: “Dental caries is no new thing. It has adversely affected generation after generation and will continue to do so if measures are not taken. This constitutes the type of danger from which the State has not merely the right but the duty to protect its citizens. To deal with the problem, parliament has chosen a method, namely the fluoridation of the public water supply. The plaintiff has failed to refute the evidence that this is not only the most effective method but is indeed the only effective method.”

Fluoridated water does not constitute an infringement of bodily integrity

The judgement continued: “The Court is left in no doubt that the fluoridation of water to the extent proposed in the Dublin Health Authority area where the plaintiff resides cannot be said to involve physical changes which affect in any way either the wholeness or the soundness of the person concerned.

“The ingestion of the fluoridated water cannot, therefore, be said to constitute an infringement of or a failure to respect the bodily integrity of the plaintiff or her children.”

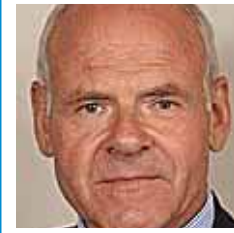
Not mass medication

The Irish Supreme Court also firmly rejected the anti-fluoridation argument of ‘mass medication’. It said: “The Court does not accept that the fluoridation of water is, or can be described as, the mass medication or mass administration of ‘drugs’ through water. This matter was examined in detail by the Commission set up by the Government of New Zealand to inquire into the desirability of fluoridation and the conclusion was reached that ‘fluoride is not a drug but a nutrient and fluoridation is a process of food fortification’. It is, in the opinion of the Court, a misuse of words to refer to this process as mass medication or mass administration of drugs.”

11. Strong argument in favour of ensuring freedom from tooth decay

Obligation to protect children

Whereas anti-fluoridation campaigners may emphasise their preference for freedom from fluoride in water, there is a powerful counter-argument that emphasises the need for freedom from tooth decay. Whilst this potentially painful and distressing condition can and does affect all sections of the community, it has a particular impact on children, a group of the population least well placed to be able to campaign for their rights.



Lord Colwyn has encapsulated this argument with great eloquence when, in a House of Lords debate, he asserted: “It is all very well saying that they (children) should clean their teeth and that we should take their sweets away from them. But it is not until you have had to hold down a screaming four-year old child, anaesthetise it and pull out baby teeth that you realise the immorality of not initiating a proven, comprehensive plan that will prevent untold cases of future suffering.”

12. The Irish Forum on Fluoridation and the need to enhance social welfare, promote equality and protect citizens

In May 2000, the Irish Minister for Health and Children established the Forum on Fluoridation and invited **Professor Pat Fottrell, former President of the National University of Ireland, Galway**, to act as the Forum’s independent chair.

Forum members included representatives of the relevant Government Departments (in particular the Department of Health and Children which has the primary responsibility in this field), regional health authorities, university faculties engaged in relevant research areas, consumer bodies, environmental interests, and professional dental and medical bodies. In addition, its members included recognised authorities on ethics, law and sociology. The Forum report was published in 2002.

Among other issues the Forum considered the legal and ethical dimensions of fluoridation in terms of the relationship between the State and the individual – particularly in the light of the changing values in society since the early 1960s when mandatory fluoridation legislation had been enacted in Ireland.



Professor William Binchy, Regius Professor of Law, Trinity College, Dublin, gave evidence to the Forum on both the legal and ethical questions raised by fluoridation. His interesting presentations are included in full in Appendixes 16 and 17 of the Forum report (<http://www.doh.ie/publications/fluoridation.html>) (12). Professor Binchy discussed in detail the contemporary legal position, comparing it with the earlier judgements of Justice Kenny and Chief Justice O'Dalaigh. He said that in his opinion the courts would be very reluctant to come to the conclusion that the Irish Republic's 1960 Health (Fluoridation of Water Supplies) Act could be considered to infringe any constitutionally protected rights.

Public health responsibilities must be taken seriously

Professor Binchy also highlighted the radical changes which have taken place internationally in the 20th century in the predominant values relating to personal autonomy. Developing this theme, Professor Binchy suggested that there had been a movement 'from the social to the individual' and that there was now increased emphasis on autonomy and 'disconnectedness'.

Nevertheless, he said, the State had assumed very wide-ranging new functions designed to achieve the goals of "enhancing social welfare, encouraging equality, protecting citizens from injury, improving their health, protecting potentially vulnerable groups such as employees and, within families, children - indeed generally to improve the quality of life for all." Public health is regarded as an important aspect of the State's responsibilities, he asserted.

The State has a duty to improve the quality of life for all.

Fluoridation is intended to safeguard the health of its citizens.

13. View of leading Irish ethicist

A sub-group of the Forum reviewed Professor Binchy's presentations and also consulted Dr Richard Hull, a respected ethicist. The sub-group addressed three areas of uncertainty:

- **Firstly, whether water fluoridation posed any particular ethical problems:**

Dr Hull addressed this question in terms of choice. He said that people can choose not to drink tap water, though he acknowledged that the choice was not an easy one. If the State were concerned about this, he said, consideration would have to be given to supplying an alternative source of water.

- **Secondly, whether water fluoridation breaches bodily integrity or interferes with autonomy:**

Dr Hull said that water fluoridation is a paternalistic intervention by the State to safeguard the health of its citizens. However, he said, such interventions are justifiable and the degree of infringement of bodily integrity by water fluoridation is relatively minor.

- **Thirdly, the issue of scientific uncertainty – it being impossible to state categorically that anything is completely safe:**

Dr Hull suggested that the question relating to scientific uncertainty comes down to risk versus benefit. From an ethical perspective, he said, risk can be justified if the benefit significantly outweighs the risks.

Freedom requires positive conditions such as a certain level of health

Dr Hull further discussed the topic in terms of a potential conflict of values, between freedom and autonomy on the one hand, and welfare and paternalism on the other. Viewed from an extreme libertarian perspective with the core values of freedom and autonomy, suggestions of equality and state intervention would be rejected, he said. However, he argued that other, less extreme, welfare liberal views might concede that freedom requires positive conditions such as a certain level of health, education and economic well being. Freedom in this sense is more positive and means more than just being free from interference.

Freedom involves positive rights to assistance

Furthermore, he said, along with positive conditions for freedom come positive rights to assistance. This reflects a position where allowing harm can be as bad or worse than doing it. Such a position is consistent with limited paternalism, and allows for autonomy to be limited to a certain extent for the sake of freedom and justice.

He stated: “It is all very well to emphasise the value of autonomy, but the desire to effectively safeguard the health and safety of children (who are not yet autonomous) could be said to constitute a strong counter-emphasis.”

Dr Hull concluded by saying that any evidence that fluoridation is unsafe will, of course, weaken the arguments in favour of it, although perhaps not fatally. Even given a modicum of risk, we might still ask whether it could ever be ethical to withhold an ‘on balance’ beneficial treatment and to fail to prevent suffering when it is within our power? To do so ‘would be to deliberately fail to protect and promote the health of people in our community,’ he said.



14. Nuffield Council on Bioethics report on ethical issues in public health

On 13th November 2007, the Nuffield Council on Bioethics published a landmark report on ethical issues in public health (13). The report, produced by a working party chaired by Lord Krebs, offers policy-makers a carefully balanced ethical framework – based on a ‘stewardship model’ – for making decisions about public health issues on a case by case basis.



The framework is not exclusively concerned with fluoridation. It is intended to apply to all public health policy-making and decision-taking and has emerged from the working party’s analysis of different strands of political thought and philosophy.

Priority given to policies that address health inequalities and protect children

The Nuffield Council report recognises the tensions between protecting personal autonomy on the one hand and promoting the welfare of all on the other. Nevertheless, it appears to give priority to public health policies that will address health inequalities, protect the health of children and other vulnerable groups, and secure environmental conditions that reduce ill health. On this point it says: “...we viewed the reduction of health inequalities as central to any public health programme.”

This view is justified on the ground that: “...good health is central to making use of opportunities that are available in societies, and policies that do not provide people with fair and equal starting positions in the pursuit of such opportunities must be judged unjust.”

Good health is central to making use of opportunities that are available in societies.

A value that expresses the way that we each benefit simply by being members of a society in which the health needs of others are addressed.

Caution on the role of individual consent and preference for a society where people care about one another

The Nuffield Council report is critical of libertarians' excessive stress on consent in the field of public health, concluding that its relevance and usefulness are often overestimated in this context.

Specifically, the report says: "Concern for the needs of the population as a whole means that very demanding interpretations of individual consent as an expression of individuality and autonomy should be viewed with caution. Instead, democratic, transparent decision-making procedures can often ensure an appropriate balancing of the interest of individuals and those of society."

In rejecting the libertarian standpoint, the Nuffield Council working party searches for what it calls "a value that expresses the way that we each benefit simply by being members of a society in which the health needs of others are addressed." The working party likes the term 'community' to describe this value which, in its view, is: "the value of belonging to a society in which each person's welfare, and that of the community, matters to everyone."

A stewardship model that justifies collective action for the common good

This value is central, the report argues, in the "justification of both the goal of reducing health inequalities and the limitation on individual consent when it obstructs important general benefits." This line of thinking leads the Nuffield working party to embrace the stewardship model which, in its view: "...gives expression to the obligation of states to seek to provide conditions that allow people to be healthy, especially in relation to reducing health inequalities."

Under this model, public health policies that involve intrusion in people's lives and a reduction in their individual liberty or choice must be justified by peer-reviewed evidence of potential benefits and avoidance of harm. There must be open public discussion about and approval of those policies.

An important dimension of public health is to balance choice with the imperative to support those who do not have the opportunities to choose.

Reducing health inequalities should be considered central to the goals of public health.

Responsibility to protect those whose choices are constrained

The report highlights the potentially illusory nature of choice, pointing out that many apparent choices are not actually available to some sectors of society because people cannot afford or access them, do not know about them or are constrained by social or other barriers.

The working party concludes: “From an ethical and practical standpoint, an important dimension of public health policy is therefore to balance the liberal emphasis on choice and autonomy with the imperative to support those who do not have the opportunities to choose because of, for instance, poverty or dependency.”

Applying the Nuffield ethical framework to decisions on water fluoridation

The Nuffield working party applies its own ethical framework to fluoridation. In particular, it looks at elements of the framework that could be used for and against fluoridation.

The report says that ethical arguments in favour of fluoridation include:

- “...the liberal state has a duty to provide interventions that reduce ill health...”
- “...ensuring environmental conditions that sustain good health.”
- “...children are susceptible to dental caries, are less able to make informed choices about their dental health, and are dependent on parents and carers to assist with or promote preventive measures such as toothbrushing.”
- “Reducing health inequalities should be considered central to the goals of public health, and prioritarian programmes that address inequalities can, in principle be ethically justified. This justification could be used for fluoridation of water, given that it may potentially improve dental health across the population including in lower socio-economic groups.”

The Nuffield working party then considers arguments from its own ethical framework which could, theoretically, be used against fluoridation. Interestingly, the working party negates those arguments – in the following ways:

- “Considerations about consent could be used to argue that the measure should not be introduced either where some individuals, however few, were opposed to it, or where individuals who had not agreed to it might be affected by it, such as those from outside the area. However, this would presuppose clear evidence about risks of harm and in the absence of such evidence give too much weight to the importance of choice and consent, allowing them automatically to override any collective good that might be achieved through the measure.”
- “Some respondents to the consultation suggested that water could be regarded as intrinsically pure and natural, or as a public good that should be provided in as ‘neutral’ a form as possible....We find the argument that water is ‘special’ to be problematic. The composition of tap water varies from one place to another and is already altered in various respects during the water treatment processes.”
- “We do not accept that the addition of potentially beneficial substances to the water supply should always be prohibited. Rather, we seek to identify the situations in which this may be appropriate.”

References

1. Adams, J (2007): Britain's seatbelt law should be repealed. *Journal of the Royal Statistical Society*, 86-89.
2. Office for National Statistics (2004): Children's dental health in the United Kingdom, 2003
3. West Midlands Public Health Observatory (2003): West Midlands health issues: dental health in 5-year olds.
4. McDonagh M et al (2000). NHS Centre for Reviews and Dissemination, University of York: A systematic review of public water fluoridation.

5. Pitts NB, Boyles J, Nugent ZJ, Thomas N and Pine CM (2007): BASCD Survey Report: The dental caries experience of 5 year old children in Great Britain, 2005/6. *Community Dental Health*, 59-63.
6. Riley JC, Lennon MA, Ellwood RP (1999): The effects of water fluoridation and social inequalities on dental caries in 5-year old children. *International Journal of Epidemiology*, 1999: 28, 300-305.
7. Harris J (1989): *The ethics of fluoridation*. Liverpool: British Fluoridation Society.
8. Lord Avebury (1984): Fluoridation and individual freedom. *British Dental Journal*, 277
9. Report of the New Zealand Commission of Inquiry into the Fluoridation of Public Water Supplies (1957): Wellington, Department of Health.
10. Kenny MJ (1963): FLUORIDATION. Judgement delivered by Mr Justice Kenny in the High Court, Dublin, 1963. Dublin. Department of Health.
11. Chief Justice O'Dalaigh (1964). Judgement of the Supreme Court of Ireland delivered by Chief Justice O'Dalaigh on 3rd July, 1964. Dublin: Department of Health.
12. Forum on Fluoridation (2002): *Forum on Fluoridation in Ireland*. Irish Department of Health and Children. Dublin. <http://www.fluoridationforum.ie/>
13. Nuffield Council on Bioethics (2007): *Public health: ethical issues*. London.