

This response was submitted to the consultation held by the Nuffield Council on Bioethics on *Public Health: ethical issues* between May and September 2006. The views expressed are solely those of the respondent(s) and not those of the Council.

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1. Definition of Public Health. I would use the word 'maximise' rather than 'assure' as I feel it is never possible to 'assure' the conditions.
2. Five factors I agree that the five factors listed influence public health. However, I feel a very important issue, no doubt included in 'lifestyle', should be independently listed. That is the influence of sound nutrition throughout life.
3. Vaccination. I am very concerned about the number of vaccinations given to small children and in particular about the toxic adjuncts in these vaccinations. It seems to me that vaccinations are not always effective, are sometimes damaging and, like over-use of antibiotics may lead to changes in the balance of ecological systems in which microbes participate, with unknown consequences for the future. It has never been officially accepted that Gulf War soldiers' illnesses could have been caused by combinations of vaccinations (often up to 11 given on the same day) together with pesticide sprays and other toxic exposures. I am one who believes this entirely probable. There are people with religious and conscientious objections to vaccination and others, like myself, a former sufferer from ME/CFS who believes my health is better served by avoiding vaccinations. I am very much against compulsory vaccination and do not think that the state should ever be allowed to vaccinate children against the wishes of their parents.
4. Control of infectious disease In the circumstances of a severe outbreak of contagious disease among people or animals I believe the Government has an obligation to respond in the way its advisors recommend as most effective to limit the effects of the illness. This may include slaughter or vaccination of animals and quarantine of people. Vigilance and sanitary procedures e.g. on farms, in slaughter-houses, food-processing operations, hospitals and clinics should be of a consistently high standard to avoid infection. Over-use of single antiseptics is to be avoided in favour of the use of steam, hot water, and rotated antiseptics, so as to avoid the emergence of resistant organisms.

There should be more Government-backed research into the best ways of maximising immunity and tackling bacterial, viral, protozoal and fungal infections. Alternative ideas such as oxygen therapies, the use of phages, acupuncture, electro-magnetic therapies, ethnic medicines and herbs should be researched as drugs are already failing to tackle problem infections. I am against mandatory testing for TB and HIV/AIDS except in very severe outbreaks.

5. Obesity Government should support educational programmes to ensure an understanding by the public of good nutrition and the benefits of an active lifestyle. Low-cost sporting activities (including walking, swimming, cycling and various kinds of dancing) should be made available. NHS services should in principle be available to all regardless of lifestyle but there will be cases where obesity would cause extra risk in surgery and these cases should be decided in the light of clinical considerations.
6. Smoking Could it be that governments were slow to act on measures to limit smoking because of the reduction in tax-revenue that this would cause? Alternatively it is possible that it simply takes a long time for new ideas to be converted to action. It is completely right for the public to be protected from 'passive smoking' by legislation to forbid smoking at work and in bars. Individuals should be discouraged from smoking by punitive taxes but should not be precluded from free NHS health-care. Whether tobacco-taxes are levied on smokers or on tobacco companies is a matter for Government, the result in terms of discouraging smoking will probably be the same whichever strategy is adopted. The Government should vigorously uphold laws to prevent children and young people from becoming addicted to tobacco. Government could provide more education on the effects of tobacco on health and on personal finances.

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7. Alcohol The Government should vigorously uphold laws to prevent children and young people from becoming addicted to alcohol. Government could provide more education on the effects of excessive alcohol on health and well-being and provide more facilities to assist those addicted to alcohol, tobacco and drugs to overcome their addictions.
8. Supplementation of food and water. It is my opinion that there is a world of difference between on the one hand the supplementation of foods with essential beneficial vitamins and minerals and on the other hand the addition of the non-essential, harmful cumulative poison, fluoride, to water supplies in the mistaken belief that children's teeth will benefit from this practice.

Flour and refined cereals have had certain essential vitamins and minerals removed with the husk and bran during the refining process and these are sometimes replaced in the refined product either by government decree or by decision of a manufacturer. Similarly, butter-substitutes such as margarine have the essential fat-soluble vitamins A and D added. People rarely disagree with such supplementation because they view it as entirely beneficial. If individuals do disagree, there are alternative foods available (at virtually no extra cost) which enable them to avoid the additives they do not want.

Water is unique among nutrients. It makes up nearly three quarters of the human body and brain. It is essential to life and there is no substitute for water. In this country, wholesome water is a commercially-traded product. Most people wish to drink the tap water and expect it to be of good potable quality. It is the duty of the water companies to produce a wholesome and safely-delivered product, uncontaminated by harmful chemicals, bacteria, viruses and other microbial parasites. The companies use a variety of water-treatment methods—sedimentation, flocculation (necessitating the use of aluminium salts), aeration and filtering, testing for chemical and microbial contamination, dilution of excessive concentrations of chemicals, chlorination for disinfection etc. The finished product must comply with Drinking Water Inspectorate guidelines but these guidelines are not a licence to pollute up to the maximum level.

Fluoridation plays no part in the water-treatment process. Indeed, when Yorkshire Water explained their refusal to fluoridate, the Company declared that fluoridation did not add to the quality of drinking water. The only motive for adding fluoride to public water supplies is the (highly contentious) belief that fluoride reduces tooth-decay in children. This makes water-fluoridation a medical intervention and fluoridated water a medicine under the EU definition of a medicine (see below).

EU Definition of a Medicine

“Any substance or combination of substances presented as having properties for treating or preventing disease in human beings”.

(EU Directive 2004/27/EC on medicinal products for human use.)

- Under the EU's Convention on Human Rights and Biomedicine (the *Biomedicine Convention*), there are ethical requirements for State-sponsored medical interventions. The interests of the individual take precedence over those of the State (Article 2).
 - There is no over-riding Public Health interest that justifies fluoridation, tooth-decay being neither contagious nor life-threatening.
 - People must be able freely to give or refuse their consent to any intervention involving their person (Article 5) Consent must be based on a full understanding by the subject of the nature and potential consequences of the intervention and its alternatives.
- (Acknowledgements to Doug Cross)

Fluoride is unique among proposed additives to food and water. It is one of the most reactive of the elements and it has never been shown to have an essential role in human nutrition. (*Opinion of the (EU) Scientific Panel on Dietetic Products, Nutrition and Allergies on a request from the*

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Commission related to the Tolerable upper intake Level of Fluoride request No EFSA-Q-2003-018) The concept of a 'deficiency of fluoride' is thus entirely meaningless. Fluoride is highly toxic. The acute toxicity of fluoride is between that of lead and arsenic. (*Clinical Toxicology of Commercial Products*, Ed Gosselin et al, Fifth Edition, Williams and Wilkins 1984)

Because it is cleared by the kidneys at only $\frac{1}{3}$ to $\frac{1}{2}$ the rate of intake, fluoride is a cumulative poison and has been known as such by agriculturists since the 1940s.

The Student's Handbook to Animal Nutrition written in 1949 by L. T Lowe and published by Littlebury & Co Ltd Worcester, on page 26, describes fluorine(=fluoride) as 'a harmful mineral element' and 'a cumulative poison'.

In the 'Water Decade' of the 1980s, many boreholes were sunk in India to supply the populations of towns and villages with microbially-safe ground water rather than the polluted surface water which had previously caused so much dysentery. Unfortunately, the new water supplies had not been tested for fluoride and arsenic. It is estimated that up to sixty million people have been crippled as a result. Many of the youngsters, drinking water with typically 4 to 11 ppm of fluoride and exposed during tooth-development, suffer from the stained and chipped teeth of severe dental fluorosis. Others suffer, some at relatively young ages, from crippling skeletal fluorosis, gastrointestinal problems, infertility and chronic fatigue. Some of the boreholes have now been capped off. In other places de-fluoridation plants have been installed or the villagers have been taught to remove fluoride from their water by chemical exchange methods.

I personally attended a lecture about the adverse health effects of fluoride given by Professor Dr A.K. Susheela, in Bradford in 1998. Professor Susheela is a histocytochemist and a member of the Faculty of the All India Institute of Medical Sciences, New Delhi. She is the director of the Fluoride and Fluorosis Research Foundation of India and an adviser to the Indian Government. In the presence of local Councillors, Dr Susheela also presented her evidence to Minister for Public Health, Tessa Jowell, at the Department of Health, London on 26 October, 1998. She warned that fluoridation would lead to dental fluorosis and premature loss of teeth; injury to the intestinal mucosa; degenerative changes to connective tissue, muscles and bone; still-births, miscarriages and genetic damage. Dr Susheela's warning has been disregarded by the present Government.

Fluoride poisoning is very prevalent in a number of Indian states. I am certain that chronic fluoride poisoning also occurs in this country and in America but is not usually diagnosed as such because (as was also pointed out by Dr Susheela to Tessa Jowell) the NHS has no facility to test fluoride levels in blood and urine. I have recently corresponded with farmers Cathy and Wayne Justus in Pagosa Springs, Colorado, USA. Illnesses plagued their quality Quarter Horse enterprise for fifteen years. Finally, after six veterinarians had failed to identify the cause of the horses' ills, and after the exhumation of a favourite mare for bone autopsy, Dr Lennart Krook, a veterinarian at Cornell State University identified the mare's problems as having been chronic fluoride poisoning from drinking the city water which was artificially fluoridated to 1.3 ppm. As a consequence, Pagosa Springs has discontinued artificial fluoridation.

At the Government's request, the NHS Centre for Reviews and Dissemination at the University of York carried out a Systematic Review of world-wide studies on fluoridation and reported in Autumn 2000. They found that 48% of children in fluoridated areas showed some degree of dental fluorosis and 12.5% showed dental fluorosis severe enough to be 'of concern'. Baroness Hayman stated, in a Written Answer, for the Government: "We accept that dental fluorosis is a manifestation of systemic toxicity. . ."
(Hansard, 20 Apr 1999 : WA 158.).

York found that most of the studies underpinning fluoridation were of very poor quality. They estimated the benefit to teeth from fluoridation as probably about 15%, but that was based on poor studies which gave a range varying from a benefit of 65% right down to a slight disbenefit to

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children's teeth. The effectiveness of fluoridation has not been proved. In a letter issued on 3/1/2001, Professor T. A. Sheldon, chair of the Advisory Group for the *York Review* stated "The review team was surprised that in spite of the large number of studies carried out over several decades there is a dearth of reliable evidence with which to inform policy. Until high quality studies are undertaken providing more definite evidence, there will continue to be legitimate scientific controversy over the likely effects and costs of water fluoridation."

The fact that (apart from dental fluorosis) York did not find evidence of harm from fluoridation was probably due to the restrictions of the Review's terms of reference. The scientists had to look only at fluoridation and were not permitted to include evidence from animal studies nor at biochemical or biomedical research. For many years we did not understand the health-hazards of smoking or of breathing asbestos dust. We lag behind countries like Sweden where it is believed that mercury fillings are harmful. We simply do not currently recognise the harm that fluoride can cause. Fluoridation forces many people to add 1–4 mg per day to the fluoride intake they obtain from all other sources (food, beverages, juices and soft drinks, toiletries, toothpaste, medicines etc.).

A Toxicological Profile by the US Dept of Health and Human Services says that some subsets of the population are more susceptible than others to the toxic effects of fluoride and its compounds. These are people with cardiovascular problems, renal insufficiency, or poor nutritional status particularly in respect of calcium, magnesium and vitamin C. The same document emphasizes the inhibitory effect of fluoride on enzymes of glycolysis and the tricarboxylic acid cycle, the cellular enzymes which convert food to energy. The late Dr George Waldbott's list of symptoms* of chronic fluoride toxicity have remarkable similarities to present-day problems of irritable bowel syndrome and ME/CFS, though as Waldbott himself points out these symptoms may not always be caused by fluoride. Babies fed on formula mixed with fluoridated water will obtain 100 to 200 times the amount of fluoride found in human mothers' milk. Fluoridation gives no control on an individual's daily fluoride dose. This depends on amount of water drunk plus fluoride obtained from all other sources.

*G L Waldbott *Fluoridation-The Great Dilemma* Coronado Press Inc Lawrence, Kansas USA

There is growing evidence that fluoride causes problems at levels very close to what is recommended for fluoridation. In March 2006 the US National Research Council published its report on Fluoride in Drinking Water. It detailed many harmful effects of fluoride and stated that people drinking water with 4ppm fluoride (the maximum currently allowed in the U.S) were at risk from (in the case of children) dental fluorosis and (in the case of adults) bone fractures in later life. It called on the Environmental Protection Agency to reduce the Maximum Contaminant Level Goal for fluoride from 4ppm to an unspecified lower level. The maximum contaminant level in the UK and recommended by the WHO is 1.5ppm (1.5 mg/l)

Hexafluorosilicic Acid and sodium hexafluorosilicate are the only two substances allowed in UK law to be added to water for the purpose of fluoridation. In current practice, the former is used. It is sometimes said by proponents of fluoridation that the addition of 'fluoride' to water is a mere 'topping up' of the level to what is naturally present in other places. But hexafluorosilicic acid is never present naturally in water. Natural fluoride is almost always present as calcium fluoride or magnesium fluoride. Incidentally calcium and magnesium are the antidotes used to treat fluoride poisoning.

Hexafluorosilicic acid is an extremely corrosive and poisonous liquid which 'if spilled during a transport accident' quickly corrodes the road surface and can kill people if they receive relatively small amounts on the skin. (It has the potential to entirely disrupt the body's mineral metabolism.) Road accidents involving fluoridation chemicals have occurred in America. A transport accident in Deltona Woods, Florida on Sept 7th 1994 closed the highway in both directions. 2700 people were evacuated from their homes for 24 hours; 300 tonnes of contaminated dirt had to be removed from

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the side of the highway; 600 feet of motorway had to be re-surfaced, over 100 cars had to be decontaminated; fifty people went to hospital and some police and emergency workers were in hospital for up to six weeks. The clean-up took four days with crews working round the clock.

There was a near-miss accident at Avonmouth Dock UK in 2001, involving a leaking tank of hexafluorosilicic acid on board ship. The dock was effectively shut for 30 hours in what was designated a 'Major Incident'. More by good luck than good management, no serious injuries resulted. In these days of terrorism I consider it highly reckless to transport such a high-profile poisonous and corrosive substance without strong safeguards against hijacking. Storing hexafluorosilicic acid in proximity to water supplies also seems very unwise.

Fluoridation plants must be constructed in such a way that they deliver just one milligram of fluoride per litre of water (1ppm) by a fail-safe method. There have been a number of 'overfeeds' in America with a fatality in Hooper Bay, Alaska, in 1992.

It is not a cheap or simple matter for a consumer to remove fluoride from his domestic water supply should he wish to do so. The simple 'activated carbon' filters used in filter-jugs and in relatively cheap under-sink filters do not remove the fluoride ion. To remove fluoride, a distiller or a reverse osmosis machine is necessary. These cost a few hundred pounds to buy and install. They are also quite expensive to run. The distiller is costly in terms of energy as all the water has to be boiled, condensed and cooled. Reverse osmosis machines require cartridges at regular intervals and they are very wasteful of water because waste-water carrying the impurities constantly trickles out of the machine to the drain. At times of energy shortages, water shortages and global warming it is better if such technologies are not perceived necessary.

Whole-house systems for purifying water are available but are prohibitively expensive for the ordinary family. Consequently people are obliged to bathe in fluoridated water even if they are able to avoid it for cooking and drinking. Research by George Glasser and Andreas Schuld has indicated that fluoride is absorbed transdermally.

A householder deciding to avoid fluoride by buying bottled water is faced with a considerable extra cost and may also have to transport quite heavy bottles, not possible for the elderly and infirm. We are also currently faced with calls for fluoride to be added to bottled water—which heaven forbid as consumer choice would be lost.

As has been pointed out by Professor Sheldon, the effects and costs of fluoridation have not been well researched. Feasibility studies are expensive and in some cases have been ordered in advance of the public consultations which we have been promised under the Water Act 2003. One wonders how genuine will be these consultations. The Government is clearly in favour of fluoridation as evidenced by the fact that it funds the British Fluoridation Society (BFS) to the tune of some £104,000 per annum. It is also funding the Manchester-based *Fluoride Information Centre* which, together with the BFS is feeding the public with a very one-sided and sometimes erroneous view of the fluoride issue. Government Ministers and MPs are still assuring their constituents that fluoridation is entirely safe and effective when there is little evidence that either statement is true. The National Health Service is currently under a lot of financial pressure and I believe the public would rather see money spent on keeping hospital wards open and adequately staffed and funding drugs for cancer patients, rather than on an unproven attempt to minimally reduce childhood tooth decay. In fact the public will see the 90% of fluoridated water which goes nowhere near teeth but flushes W.C.s, washes cars, clothes and dishes and fills swimming pools as quite literally money down the drain.

I note that your own published Consultation Document was amended after representations from scientists of the *York Review* who have previously complained that the British Dental Association, The National Alliance for Equity in Dental Health and the British Fluoridation Society have made statements which mislead the public over the *York Review's* findings.

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Opposition to fluoridation comes from individual subscriptions and the unpaid work of many dedicated activists. It is a David and Goliath situation which has continued unabated for over fifty years. The world-wide campaign, of which I am proud to be a part, comprises research scientists, doctors, dentists, chemists and biochemists, toxicologists, environmental scientists, nutritionists, and many members of the public who perceive that fluoride (from whatever source) has damaged themselves, their children and/or their animals.

The concept of mass-medicating vast populations via public water supplies is contrary to sound science, medical ethics, Fundamental Human Rights and common sense. It flies in the face of accumulating evidence that fluoride, even at low concentrations, causes harm. I hope members of the Nuffield Council on Bioethics will take seriously the representations made to them by those who oppose fluoridation and will stop short of giving their approbation to this old-fashioned and fatally flawed so-called 'Public Health measure'. (Fluoridation has also been called the greatest fraud of all time.)

Yours faithfully

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Enc Statement from Professor Hardy Limeback