

Fluoridation: A Fifty-Year-Old Accepted but Unconfirmed Hypothesis

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Abstract — The fifty-year-old fluoridation hypothesis has not been confirmed. Despite this, millions of people are still medicated with fluoride by government decree, on the assumption that this process has been proved to be entirely safe, and very efficacious in reducing dental caries. In fact, the scientific basis of fluoridation is very unsatisfactory. It is promoted, in the main, by emotion-based 'endorsements' rather than by scientifically-acceptable evidence.

Introduction

New medical hypotheses can be of great benefit, but it is also important that each be tested by standard scientific methods before being accepted and utilized. It is remarkable, in these supposedly scientifically-enlightened days, that some governments continue to consider to be proved, and to act upon, a fifty-year-old medical hypothesis which has not been scientifically confirmed.

As a result, millions of people are daily medicated with an uncontrollable number of doses of a very toxic substance. This process is the so-called fluoridation of water. However, its aim is not to treat the water but to medicate the entire population with fluoride through their drinking-water.

The fluoridation hypothesis was defined in 1954 by some of its first investigators. It is: '... that a concentration of about 1 part per million of fluoride in the drinking water, mechanically added, inhibits the development of

dental caries in the teeth of the users of the water' (1). It was assumed that the process was entirely safe.

Commencing in 1945, five studies were conducted in America and Canada to test this hypothesis. (Unfortunately, the necessity for the use of correct statistical methods was not widely realized at that time, and none of the studies was designed and analysed by an academic statistician.) One study did not employ a control city, and the controls used by three others were unsatisfactory (2). The fifth study, in Grand Rapids, was run by dental officers of the U.S. Public Health Service, who spoiled the experiment in 1951 by fluoridating the control city after the planned 10-12-year study had been running for only six years (3).

In 1950, because of the results reported from that study, the U.S. Public Health Service endorsed fluoridation, followed by the American Dental and Medical Associations. They did this

although, at that time very few of the permanent teeth would have even erupted in the children fluoridated since birth. No tests were done to determine whether this medication was safe.

Emotional 'endorsements'. Relying on the endorsements of those three well-known organizations, without investigating the matter numerous bodies hastened to be amongst the early endorsers of this new wonder process. These included service organizations, mothers clubs and even the Boy Scouts of America. The emotion-based promotion of fluoridation was on its way.

From that time onwards fluoridation promotion has relied, almost entirely, on opinions and endorsements by various bodies, practically none of which has studied original data, or even the figures already published. Scientifically-conducted studies correctly designed to determine whether fluoridation is efficacious are notably lacking.

Unsatisfactory experimental methods. After more than thirty years the claims made by the authors of those five faulty studies still remain the main basis for the contention that fluoridation greatly reduces dental caries. In 1954 some professional statisticians severely criticized the methods used in the Grand Rapids study. However, their findings were published in a little-read journal (4) and were ignored. The unsatisfactory methods used in these five studies were pointed out in a monograph in 1959 (2) and intense pressure was immediately brought on Cambridge University Press by the Nutrition Foundation Inc., and others, in an attempt to prevent that book from being distributed in the U.S.A. They failed. False statements about the book, by authors of these studies and other pro-fluoridationists, were published in the *Australian Dental Journal* as 'book reviews'. Their criticisms were cited at length in a 1960 edition of the monograph and were shown to be incorrect.

Other studies were set up, but few employed control towns and, in general, the scientific standards were even lower than in the first few studies. In 1986 Diesendorf (5) said: 'So with the original North American foundations of fluoridation badly cracked, to say the least, the proponents now refer to the '95 studies in 20 countries' which are supposed to prove the enormous benefits of fluoridation.' 'At first glance, '95 studies' may seem to be overwhelming, but a large proportion of these are snapshot surveys,

with all their disadvantages" (5).

He also said (6): 'Large temporal reductions in tooth decay, which cannot be attributed to fluoridation, have been observed in both unfluoridated and fluoridated areas of at least eight developed countries over the past thirty years. It is now time for a scientific re-examination of the alleged enormous benefits of fluoridation.'

The failure of fluoridation 'demonstrations'. Projects termed 'demonstrations' were commenced in the U.K. in 1955/56 and in New Zealand in 1954. The U.K. 'demonstration study' (7) was set up by the Department of Health and run by the sixteen-member Committee on Research into Fluoridation (which included seven medical and dental professors). The New Zealand project, at Hastings, was conducted by the Department of Health '... to demonstrate the effectiveness of fluoridation ... in reducing the prevalence of dental caries' (8). The term 'demonstration' was used to conceal the true situation — that, as practically nothing was known of the health effects of prolonged medication with fluoride, these, like the American trials, were experiments on large numbers of human subjects without their consent.

Most of the data obtained in the U.K. trial were not published, but Schatz (9) 'graphed' some of the published data and demonstrated that the Committee's claims were nonsense. This highly-qualified committee had somehow decided in 1969 that the data it had obtained showed: '... that the fluoridation of water supplies at the level of 1 ppm. F. is a highly effective way of reducing dental decay and is completely safe' (7). In his 1972 paper 'The failure of fluoridation in England', Schatz said: 'It is clear that fluoridation does not prevent or reduce tooth decay. Instead, it merely postpones the appearance of caries by about 1.2 years. Fluoridated children develop the same amount of tooth decay as their non-fluoridated counterparts' (9).

In 1986, Colquhoun (10), by the use of the New Zealand freedom of information act — the Official Information Act of 1982 — obtained unpublished details regarding the New Zealand study at Hastings. He found that the claimed decreases in dental caries following fluoridation were '... brought about by a change in the diagnostic criteria for deciding at which stage a tooth should be filled'. He continued: 'But the change was not reported in any of the published

accounts of the trial. The school dental operators . . . were told to reduce the number of cavities requiring filling to a quarter of the number they had found according to their earlier practice, which still applied in the rest of New Zealand.' The caries prevalence rate, the D.M.F., was determined after those operators had completed each child. Therefore there were no decayed teeth, 'D', and few missing ones, 'M'. The main influence on the caries score was the number of filled teeth, 'F', which, of course, as a result of the new criteria was greatly reduced.

Safety ignored. For many years the safety of fluoridation was largely ignored — it was simply assumed that it was safe. No competent investigation of possible illnesses was made, it was claimed that no ill-effects, except dental fluorosis, had been seen in people who lived in areas where the drinking-water contained fluoride naturally. The British Department of Health's Committee on Research into Fluoridation did not investigate the health of the children involved in its eleven-year fluoridation study, but it claimed: '. . . the Report has confirmed its complete safety.'

This myth was finally shattered when Moolenburgh and his research team of physicians (11) in 1972–1975 demonstrated by double-blind tests that fluoridation can produce many harmful side-effects. Holland has now joined all the other countries of continental Western Europe in rejecting fluoridation and in closing their fluoridation plants.

Other elements in the water have been ignored. In some cities, such as Melbourne, Australia, fluoride has been added to very 'soft' water which contains very little calcium and magnesium, both of which may mitigate the ill-effects of fluoride on skeletal structures. (Some Melbourne water has only 1.6 mg/L Ca and 1.1 mg/L Mg.)

From the beginning of fluoridation it was claimed to benefit teeth and the subject was considered to be a dental one. Dentists obviously are equipped to consider the most obvious injurious effect of fluoride ingestion — dental fluorosis, which results from fluoride damaging the cells of the developing teeth — but they are not trained to evaluate recent evidence of damage, such as that fluoride produces mutagenic effects on cells, including human cells, *in vitro* (12, 13). Therefore, the safety of fluoridation is no longer a purely dental domain.

Saving reputations. Some academics have built their reputations mainly on their advocacy of fluoridation as efficacious and entirely safe. Therefore they — and the bureaucrats who have acted on their opinions without questioning their conclusions — cannot now acknowledge that they were wrong, without suffering considerable loss of 'face'. They cannot admit that there is a rapidly increasing amount of published evidence which shows that fluoridation is both dangerous and ineffective.

'Face.' Scientists generally do not realize the almost religious fanaticism displayed by many fluoridation protagonists. For instance, when a very large-scale epidemiological study, which suggested that fluoridated cities in America had cancer mortality rates considerably higher than non-fluoridated ones, was published by Yiamouyiannis and Burk (14), '. . . the fluoridation lobby fought back with a vehemence which astonished everyone!' (11). Moolenburgh also said: 'Instead of simply prohibiting the use of fluorides, as they had done with cyclamates, the authorities were to use every statistical and judicial gimmick to keep their defeat and loss of face at bay.' 'Was losing face more important than the death of thousands? Apparently it was.' (11). One factor which could contribute to this fluoride/cancer link is the subject of a new hypothesis — that the normal absorption of high-fluoride bone (which develops in fluoridated people) could release sufficient fluoride to damage not only bone cells (which has been observed) but also some of those of the developing immune system (15).

The 'lost' Cancer Institute inquiry. In 1977 a U.S. Congressional inquiry into the fluoride/cancer link discovered that the National Cancer Institute had not done any original studies to support its twenty-five-year endorsement of fluoridation (16). It forced the N.C.I. to undertake an animal study — which the N.C.I. said would take three years. Ten years later the results of that 'three year' study still do not seem to have been reported.

Caries in "naturally fluoridated" areas. In 1981 Ziegelbecker (17) examined the data of 48 000 children, from all known published studies in North America and Europe. He reported: 'The prevalence of dental caries in children aged 12 to 14 from 136 communities with drinking water

containing 0.15–5.8 ppm F shows no relationship with the concentration of fluoride naturally in drinking water.' He then said: 'It can be concluded from the above results that at the so-called 'caries prophylactic level' of fluoride (1 ppm) some signs of intoxication must be expected but no caries prophylactic effect.'

Despite such findings, in some countries such as Australia, official opinion continues to support this process. For example, in 1973 the State of Victoria introduced compulsory fluoridation by means of an Act which contains a no liability clause to protect authorities.

Fluoridation 'experts'? The Victorian Government accepts the opinion of fifteen men whom it calls 'fluoridation experts' — the members of three fluoridation committees. The most prestigious of these even said that: "Fluoride is an endogenous ion of the human organism" (18)!

Examination of the *Index Medicus* for the last five years under the subject headings of Fluoridation, Fluoride, Fluoride Poisoning, Fluoride Topical and Fluorine, has shown that none of these fifteen 'experts' is named as the author of even one paper on fluoridation or its four associated topics during that period.

In contrast, three Australian scientists who are opposed to fluoridation (M. Diesendorf, G. E. Smith and the present author) have written more than twenty papers on those topics during that time and more are 'in press' and due for publication soon. Despite this, their findings and opinions have been ignored by the Victorian Government, which, therefore, does not realize that its 'sacred cow' called fluoridation has feet of clay.

Conclusion

As a result of the failure of these fifteen 'fluoridation experts' to give the government the facts about fluoridation, and the similar failure of "experts" in other countries, millions of people are being compulsorily medicated each day with an uncontrollable number of doses of this toxic substance, irrespective of their age, state of health, need or desire — and for the whole of their lives.

Politicians and bureaucrats are reluctant to acknowledge their mistakes — if indeed they realize that fluoridation is very widely rejected because it has been shown to be both ineffective and unsafe. Therefore they are likely to continue

this medication of the population until scientists demand that the findings regarding the fluoridation hypothesis are subjected to normal scientific and statistical scrutiny and the results published. Fluoridation must not continue to be accepted on the basis of 'endorsements', merely because it is convenient for politicians and emotionally attractive to the dental profession.

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