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## Former NIH (National Inst. of Health) scientist opposed to fluoride

Statement by James B. Patrick, Ph.D. at the Joint Congressional Committee on Health and Appropriations *Against the Inclusion of Fluoridation* in the Preventive Health & Health Services Block Grant, Held August 4, 1982.

Dr. Patrick earned his B.S. from the Massachusetts Institute of Technology and his M.A. and Ph.D. from Harvard University majoring in chemistry. His experience as Antibiotics Research Scientist was with the National Institute of Health and Lederle Laboratories.



Dr. Patrick is Senior Professor and Chairman of the Department of Chemistry, Mary Baldwin College, Staunton, Virginia, 1967 to date. He is author of 28 technical papers and holder of 7 U.S. patents.

"A number of scholarly volumes and numerous technical articles have been written showing the **biochemical and toxicological hazards of deliberately exposing the population to continuous dosages of such a potent chronic toxin as fluoride**. I cannot summarize them in the time of space at my disposal here, but will confine myself to sketching three points.

1. **Fluoride is an enzyme poison, in the same class as cyanide**, oxalate, or azide, which means that it is capable of a very wide variety of harmful effects, even at low doses. This characteristic of fluoride has long been known and accounts for the opposition to fluoridation of such eminent scientists as Sumner (co-author of Sumner and Myrback, "The Enzymes," which was the Bible of enzymology for an entire generation); Laubengayer, also of Cornell, and a leading authority on all aspects of fluoride chemistry; Theorell and Von Euler, both Swedes and both Nobel Prize winners for work in enzymology; Waldbott, one of the country's foremost allergists who first described penicillin allergy; and a number of others. This enzyme toxicity is the principal cause of the very low margin of safety involved in fluoridating water. A concentration of about 1 part per million is recommended for fluoridation whereas in several countries severe skeletal fluorosis has been documented from water supplies containing only two or three parts per million. In the development of drugs, even for life-threatening diseases, we generally insist on a therapeutic index (margin of safety) of the order of 100; a therapeutic index of 2 or 3 is totally unacceptable, yet that is what has been proposed for public water supplies.

2. Because of this well-known toxicity, the **vast majority of civilized nations with advanced standards of public health have rejected fluoridation and in most cases prohibit it**. The Swiss Ministry of Health studied fluoride administration for years but never

adopted it and it is now prohibited: a canton can not put fluoride in its water under any circumstances.

In Sweden the government sought the opinion of the Nobel Medical Institute, one of the most prestigious in the world. The Institute recommended against fluoridation, based largely on the toxicity I have described above, and Swedish water is not fluoridated. In a similar way the French government consulted the Pasteur Institute; that Institute strongly recommended against fluoridation and France remains unfluoridated. West Germany experimented with a few limited local fluoridation projects and then dropped the whole idea. Denmark adopted fluoridation a number of years ago, but then sharply reversed itself and now strictly prohibits the addition of fluoride to public water supplies. The only nations that I know of that have advance standards of public health and permit fluoridation are the U.S., Great Britain, and a few of the British Dominions. The reason seems to be that dentists campaigned vigorously in the English-speaking countries very early and got fluoridation adopted because of its claimed dental benefits. But the opposition of fluoridation is not concerned with dental effects nearly so much as whole body toxicity. Dentists are not trained in toxicology or enzyme biochemistry and are in no position to assess the public health hazards of fluoridation. In all of the countries that have rejected fluoridation it is conspicuous that biochemists, physiologists, pharmacologists, and enzymologists have been consulted and listened to.

3. Over 20 years ago the U.S. public health authorities who were pushing fluoridation admitted that raising the level of fluoride in the drinking water much above one part per million, or otherwise increasing the fluoride intake of the population, was hazardous. But since the introduction of fluoridation in the United States the average fluoride intake has risen sharply. Canned goods prepared with fluoridated water have elevated fluoride content because of concentration. Marier and Rose first demonstrated the significant rise in total fluoride burden, and later Jerard and I studied the question in more detail and concluded that most people are already receiving more fluoride than the public health guidelines permitted. But Jerard and I did our work when fluoride toothpastes were only beginning to be used, and fluoride mouthwashes had not yet come on the market. It is clear that fluoride intake is rising year by year, and this is a serious matter. When Jerard and I did our work Rapoport had already shown the increase in mongoloid births associated with fluoride intake, and Waldbott's work on fluoride allergies was becoming widely known. Since then the Indian, Chinese, and East German work on skeletal fluorosis has made it plain that this insidious ailment can easily masquerade as intractable arthritis if physicians are not looking for it, and the statistical association of heart disease and fluoridation of soft water has been shown. Most recently, the massive Burk-Yamouyannis survey has revealed an association between cancer and fluoridation that is a good deal more convincing than some of the more widely publicized associations such as saccharin, benzene, etc.

For these three reasons, as well as for a number of others that I have not attempted to cover here. I strongly advise against the legislature of this Commonwealth having anything to do with fluoridation. It is a scientific disgrace that a well organized lobby of the American Dental Association ever managed to stampede American legislators into ignoring the highly technical but very cogent objection to fluoridations."