

**FLUORIDE IN DENTISTRY (2nd Edition)**

Ole Fejerskov, Jan Ekstrand and Brian A Burt (Editors)  
(Munksgaard, Copenhagen 1996)

**THE GREATEST FRAUD: FLUORIDATION**

Philip R N Sutton  
(Susan Sutton, Lorne 1996)

Reviewed by John Colquhoun

The above two books by dental scientists have been received by this editor for review. The first is intended for use by dentists and dental students, as was the first edition. Many dental researchers have contributed to this updated survey of dental uses of fluoride.

What is remarkable about *Fluoride in Dentistry* (2nd Edition), especially to anyone concerned with a more interdisciplinary approach to fluoride research, is its extreme selectivity of evidence. For example, the first chapter of the Section "Clinical uses of fluoride", on the subject of water fluoridation, starts and ends with the view, usual in dental literature, that fluoridation is both effective and safe. Totally omitted from its lengthy list of references are comprehensive recent studies and reviews which indicate little or no effectiveness and seriously question the safety of fluoridation. Similarly, the three chapters on fluoride and bones, including a piece headed "Concentration of fluoride in bone", do not cite the important research of Finnish scientists Alhava and Arnala, who actually measured and reported very high fluoride concentrations in human bone after 10 or more years residence in a fluoridated city. Even more disappointing is the chapter "Fluoride toxicology and health effects," wherein only acute fluoride toxicity is discussed. A brief piece at its end, headed "Sublethal toxic effects of fluoride", considers only dental fluorosis. The extensive early studies by Waldbott and others, as well as more recent investigations reporting skeletal and non-skeletal toxic effects of fluoride, published in this and other journals, are completely ignored.

The chapters on dental fluorosis, the only toxic effect which the authors seem to acknowledge, are by contrast very good. Most interesting is the critique of the much-used Dean classification of dental fluorosis, as well as other early North American dental fluorosis studies. The authors conclude, from more recent evidence, that "... *even with very low fluoride intake from water, a certain level of dental fluorosis will be found*" and "... *there exists no 'critical' value for the fluoride intake below which the effect on dental enamel will not be manifest*. The conclusion reached by Hodge that dental fluorosis will not occur at a water fluoride content below 1 ppm is therefore not tenable" (emphases in the original). The oft-repeated claim that "it is very difficult or almost impossible to discriminate between dental fluorosis and other enamel disturbances" is also firmly repudiated, and evidence is presented that, when a sensitive scoring system for dental fluorosis was used, "the only etiologic factor which could be identified as associated with any of the enamel changes recorded was fluoride."

However, in spite of these admissions about the widespread dental sign of fluoride toxicity, the book's omissions of evidence of other toxic effects of fluoride convey a misleading conclusion that fluoride in low doses is a wonderful elixir rather than a dangerous toxin.

The book states in the first paragraph of its Preface: "Over the last generation, the extent and severity of dental caries in the economically developed world has declined to an extent that was unimaginable in the days when many of today's dental practitioners attended dental school, and most indicators are that this trend is still in progress. Fluoride, in the different ways it is used today, is universally agreed to have been the principal influence in this major public health phenomenon" (which reveals, perhaps, the limited universe of dentists). The possibility that improved nutrition, rather than increased fluoride intake, has been a major factor is not seriously considered.

Later chapters present strong evidence that the tooth decay-arresting effect of fluoride is a local ("topical") one, not a systemic one. The earlier claimed systemic benefit is held to be "uncertain" - negligible if any, and possibly non-existent. The concluding chapter on "Rational use of fluorides in caries control" vigorously advocates increased topical uses, and plays down systemic uses, emphasizing the need to avoid the toxic consequence (dental fluorosis - the only one the authors admit occurs at low levels of fluoride intake).

Not adequately addressed is the question: how can water fluoridated to 1 ppm provide the same or greater topical benefit as fluoride toothpaste at a thousand times higher concentration? Fluoridated water and beverages, like toothpastes, do not have long periods of contact with the teeth.

The other book, by the late Philip Sutton, is of quite a different character. Far from selecting and omitting research studies to suit his case, Sutton subjects every report which purports to prove a dental benefit from fluoridation to intense critical examination. Published after his death by his daughter-in-law, the book is, in effect, an updated version of his earlier classic, *Fluoridation: Errors and Omissions in Experimental Trials*. Indeed, Chapter 19 is a reprint of that earlier edition, which critically examined the first North American fluoridation trials and is still relevant today, having stood the test of time. A later chapter makes further observations on those trials, while earlier chapters critically analyse and assess all succeeding pro-fluoridation studies, as well as criticisms of his analyses by proponents. Sutton's book will justify to many of his readers the change in title from the sedate "errors and omissions" to "the greatest fraud." It has become very apparent that, as Diesendorf and others have pointed out in this journal, not a single study has ever been published which actually proves that fluoridation works.

The book is modestly priced (Australian \$14 plus \$11 postage, from the publisher, PO Box 22, Lorne, Victoria 3232, Australia).