

## BOOK REVIEW

### Promoting Oral Health - The Use of Salt Fluoridation to Prevent Dental Caries - by Saskia Estupiñán-Day

Reviewed by John Warren

As stated in its description, the softcover book, *Promoting Oral Health - The Use of Salt Fluoridation to Prevent Dental Caries*, provides step-by-step guidance on how to plan, promote, launch, operate, monitor and evaluate salt fluoridation programs. In short, the book, in its 111 pages, provides a great reference volume for policy-makers, administrators, academicians and others in the fields of public health and dental public health. For US and Canadian audiences, the book provides not only guidance in establishing salt fluoridation programs, but also a review of previous research supportive of such programs. For audiences in Latin America and the Caribbean, the book provides a wealth of practical information for establishing and maintaining a salt fluoridation program.

The book begins with a section, "History and Success Stories" which, in Chapter 1, provides a historical overview of the development of salt fluoridation in Switzerland, and includes a table of key landmarks in the history of salt fluoridation. The second chapter describes early studies in Switzerland, Hungary and Columbia that demonstrated the feasibility and potential effectiveness of salt fluoridation. Chapter 3 focuses on caries reductions since 1980 across the Americas, including summary data from virtually all nations in the western hemisphere concerning caries prevalence and severity in children. The chapter then describes the Pan American Health Organization (PAHO) plan for caries reduction, and the implementation of salt fluoridation programs in Costa Rica, Jamaica, and Mexico as well as their effectiveness. The results from these three nations suggest remarkable reduction in caries severity (as measured by DMFT) in the range of 10-15 percent annually. However, nearly all other western hemisphere nations also reported marked declines in caries severity over the same time period in the absence of water or salt fluoridation, so that as with current assessments of water fluoridation effectiveness, it is somewhat difficult to distinguish the effect of salt fluoridation from the overall secular trend. Nonetheless, Chapter 3 provides compelling evidence of the dramatic effectiveness of salt fluoridation.

The book's second section, "Planning, Launching and Running a Salt Fluoridation Program," begins with a chapter (Chapter 4) devoted to educating communities about fluorides and fluoridation. The chapter provides a sound framework for educating the public, health care

providers, policy-makers and others about salt fluoridation. One should note that the chapter does not include any suggestions for specifically dealing with organized opposition to salt fluoridation programs. Also, one could quibble with the assertion that there is a significant systemic effect of fluoride (equal to or greater than a topical effect). Overall, however, the chapter provides excellent guidance regarding health education and health promotion.

Chapter 5 begins with examples of why water fluoridation has not worked well in many Latin American nations and provides a strong rationale for salt fluoridation programs in the region. The balance of the chapter is devoted to a detailed description of salt mining, the salt industry, salt processing and the methods used to add fluoride to salt. This part of the chapter provides necessary background information and detailed descriptions of salt fluoridation procedures. Frankly, it may provide more information than many readers want to know about salt and salt production.

Chapters 6 and 7 discuss strategic planning and epidemiological surveillance, respectively, and are a bit redundant regarding evaluation methods. The strategic planning chapter (Chapter 6) provides guidance and a real-world example of performing cost-benefit analyses of salt fluoridation programs and then proceeds with a description of the program evaluation process. While the cost-benefit example suggests cost-benefit ratios of at least 1:40, the analysis included only the costs associated with the technical aspects of initiating salt fluoridation. Given the lengthy description regarding information gathering and evaluation which follows (including baseline and recurring caries prevalence studies, urine fluoride excretion monitoring, nutrition monitoring and assessment of fluoride concentrations of foods and beverages) – costs which were not considered in the analysis – it would appear that true cost vs. benefit ratios may not be as favorable as stated. Chapter 7 expands on the information gathering and evaluation portion of Chapter 6, providing somewhat exhaustive detail regarding surveillance activities such as determining fluoride levels in foods and water supplies.

The third and final section of the book, "Tool-kit for Decision-makers, Health Planners, Legislators, Epidemiologists, and Health Workers," provides further practical

information about establishing and maintaining salt fluoridation programs. Chapter 8 provides a brief summary of PAHO's recommendations regarding salt fluoridation programs, including a designation of essential and non-essential recommendations. These recommendations represent the core content of the book, and may have been more appropriately included as an executive summary at the beginning of the text. As written, the reader is confronted with a great deal of information on certain activities (e.g., testing of urine fluoride) only to find out near the end of the book that such activities are "non-essential". Of course, most readers will use this book as a reference rather than reading it "straight through" (as this reviewer did), so that this criticism is of only minor concern.

Chapter 9 provides some guidance as to the legal framework for salt fluoridation programs, and most of the chapter is devoted to an example of legislation regarding additives to salt (iodide and fluoride). Finally, Chapter 10, "Standardized Research Protocols", provides information regarding examination, calibration and data reporting for dental caries and dental fluorosis prevalence surveys. The caries and fluorosis criteria are the

traditional DMFS and Dean's Index, respectively, and as such may not be "state of the art"; however, given the desire for standardized criteria across many nations, these criteria are appropriate.

In addition to some of its shortcomings described above, the book makes little mention of any potential safety concerns regarding salt fluoridation, including mention of any research or research needs in this regard, or how to respond to those who may oppose salt fluoridation for citing safety concerns. Similarly, the book omits mention of any demonstrated or potential benefits of salt fluoridation for adults, with all data and recommendations presented focused on children. Overall, however, the strengths of the book far outweigh the weaknesses, so that *Oral Health – The Use of Salt Fluoridation to Prevent Dental Caries*, represents a great resource for anyone interested in salt fluoridation from practical, academic or public-policy perspectives.

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