

Handbook of Clinical Techniques in Pediatric Dentistry



Edited by **Jane A. Soxman**



WILEY Blackwell

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Clinical Techniques in
Pediatric Dentistry**

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Jane A. Soxman, RN, DDS

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Foreword

This *Handbook of Clinical Techniques in Pediatric Dentistry* is targeted primarily to general dentists and young pediatric dentists who would like a simplified, clinically relevant, step-by-step approach to delivering effective and efficient dental care to children of all ages. Why is a handbook such as this necessary or desirable? The answer lies primarily within the following set of facts and numbers. (i) Dental disease is the most common chronic illness in children in the United States. (ii) According to various government reports, between 25% and 44% of children will have a cavity by the time they enter kindergarten. (iii) By the age of 19 years, over two-thirds of children will have experienced tooth decay in permanent teeth. (iv) There are an estimated 74 million children between the ages of 1 and 17 years in the United States. (v) There are only 6400 active pediatric dentists in the United States, so there is virtually no possibility that 6400 practitioners could provide for the dental needs of 74 million children. (vi) There are approximately 165,000 active general dentists in the United States, many of whom see children in their practice, but might increase the numbers they see, if they felt more confident in the administration of pediatric dental techniques and skills. So considering these facts, not only is it desirable those general dental practitioners see more of the children, but also it is a logistical necessity, in order that many more children may receive appropriate oral health care.

Dr. Soxman, along with many well-known, experienced practitioners, academicians, and other related specialists, has created a well-illustrated, simplified, step-by-step approach to the most common clinical challenges and procedures that a practitioner treating

children needs to know. One of the aspects of this handbook that sets it apart from many pediatric dental textbooks is the number of chapters written, or contributed to, by pediatric practitioners who have over 20–25 years of private practice dental experience, as opposed to chapters written in most textbooks by those with a primary academic background. While this book is academically solid, its strength is in the clinical relevance and presentation of the various techniques from those who have accomplished them hundreds and thousands of times.

This handbook should become a strong clinical reference manual for those dentists who wish to improve their skills, efficiency, and confidence in treating children. Most importantly, it can help them provide an effective dental home for some small part of those 74 million children who deserve the best oral health care that can be made possible.

Congratulations to Dr. Soxman for embarking on this publishing endeavor and for acquiring such a great group of experienced, knowledgeable contributors. Over the years, I have come to know nearly all nine of the contributors in various capacities, and I know that their labors in creating this handbook is because each has given a professional lifetime of dedication to serving children. In addition, I believe that children will be well served by the practitioners who read and implement the information in this *Handbook of Clinical Techniques in Pediatric Dentistry!*

William F. Waggoner, DDS, MS, FAAPD, FACD
Las Vegas, NV

Preface

While speaking at an annual session of the American Dental Association, Wiley Blackwell publications requested that I meet with a commissioning editor. He inquired whether I had ever considered writing a book and if so, on what subject. My response was without hesitation. Over the past 20 plus years as a national speaker in continuing education and as a seminar instructor for general practice residents, I recalled the myriad of questions asked. I had often thought that a book on clinical techniques would provide much needed guidelines and directions for dental students, general dentists, and graduate general practice and pediatric dental residents. This book would include step-by-step descriptions, augmented with clinical photographs of routinely performed procedures and evidence-based recommendations.

The *Handbook of Clinical Techniques in Pediatric Dentistry* provides the clinician with an increased level of expertise and skills for timely identification and intervention for various presentations in the developing dentition. It also clearly describes procedures for treatment in the primary and young permanent dentitions. The most commonly encountered treatment needs are discussed, with the goal of increasing clinician and staff confidence, while decreasing chair time and stress. What you will learn and incorporate into your practice will be of tremendous benefit to you, your staff, and the children for whom you care.

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Acknowledgments

I wish to thank all contributors for accepting my request to donate and share their expertise despite their already exceedingly busy professional lives. I am so grateful for their exceptional contributions and cooperation in writing and co-authoring chapters that have wholly fulfilled my vision.

I thank Miss Beth, my assistant of 22 years, for her dedication, gentle spirit, and support as together we have treated thousands of children. Her patience and determination, taking photographs over and over again,

striving to capture the best possible facial or intraoral photograph, even with a reluctant or uncooperative child, are responsible for the clinical photographs. She sat beside me for hours on end during the evening and on weekends, reviewing clinical photographs, sizing them to specification, and revising and retyping legends.

In honor of her devotion to the children and to me, the *Handbook of Clinical Techniques in Pediatric Dentistry* is dedicated to Beth Ann Sutter.

Jane A. Soxman, RN, DDS

About the companion website

This book is accompanied by a companion website:

www.wiley.com/go/soxman/handbook

The website includes videos demonstrating some procedures described in the book.

1

Interim therapeutic restoration in the primary dentition

Jane A. Soxman

Interim therapeutic restoration (ITR) may be the procedure of choice for restoration in uncooperative children, young children, or children with special needs when definitive restorative treatment cannot be performed. ITR avoids the use of sedation or general anesthesia until a child is old enough to cooperate or curtails caries progression and/or emergency care, while awaiting availability of sedation or general anesthesia services (Kateeb *et al.*, 2013).

Indications

Alternative/atraumatic restorative technique (ART) is performed with similar indications and techniques as ITR; however, ART restorations have been traditionally placed where people have limited ability to obtain dental treatment and without a plan for future replacement (American Academy of Pediatric Dentistry, 2014a; AAPD Reference Manual, pp. 48–49). ART was first introduced 26 years ago in Tanzania and has developed into an accepted protocol for caries management to improve quality and access to dental treatment over the world (Frencken *et al.*, 2012). Mahoney *et al.* (2008) state that ART should be used only when the restoration can be periodically evaluated to insure integrity of the restoration.

ITR is minimally invasive and includes only asymptomatic primary incisors or molars with lesions confined to dentin with sound enamel margins, along with a

plan for future follow-up and final restoration (Amini & Casamassimo, 2012). Two surfaces may be treated, but the use of a matrix and rubber dam increases the complexity of the procedure, and the longevity of a multisurface glass ionomer restoration is reduced compared to a one-surface restoration. Survival rates over the first 2 years of 93% for single surface and 62% for multiple surface primary molar restorations are reported (de Amorim *et al.*, 2012). Carious lesions ideal for ITR are mesial caries on maxillary incisors, facial caries, cervical caries, and occlusal caries in the primary dentition (Figures 1.1–1.4).

Stepwise excavation of open carious lesions is another indication for ITR (American Academy of Pediatric Dentistry, 2014b; AAPD Reference Manual, pp. 48–49). Partial removal of carious dentin avoids pulpotomy. Microbial counts of bacteria are reduced under the restoration with or without complete removal of the carious dentin (Lula *et al.*, 2009).

Procedure

The procedure can be performed in 5 min or less without the use of local anesthesia or a rubber dam. The nonpainful carious dentin is removed with a large round bur in a slow-speed rotary instrument (Figure 1.5). A spoon excavator may also be used, but cautiously, due to the risk of unroofing the pulp chamber with a large mass of carious dentin (Figure 1.6). A dri-angle or



Figure 1.1 Mesial caries maxillary primary central incisors.



Figure 1.4 Occlusal caries mandibular right second primary molar.



Figure 1.2 Facial caries maxillary primary central incisors.



Figure 1.5 Slow speed with round bur to remove superficial caries.



Figure 1.3 Cervical caries primary canines and first primary molars.



Figure 1.6 Spoon excavator to remove superficial caries.

dri-aid is used to cover Stensen's duct and provide cheek retraction for a posterior restoration. When restoring a mandibular primary molar, a second dri-angle/dri-aid may be placed on the lingual to retract the tongue, while placing the glass ionomer restoration (Figure 1.7).

Materials

A high-viscosity glass ionomer is the material of choice for restoration owing to the ease of use and