

TACHDJIAN'S
*Pediatric
Orthopaedics*

THIRD EDITION

from the Texas Scottish Rite Hospital for Children

VOLUME 3

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with Much Love
to Our Families*

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PREFACE

.....

With the publication of Dr. Mihran Tachdjian's first edition of this text in 1971, pediatric orthopaedics gained a foothold as a distinct subspecialty within the field of general orthopaedics. The unprecedented scope of the book represented the breadth of the specialty, making it quite clear that there was a distinct body of knowledge and a unique practice within the larger field of orthopaedics that required special training and experience for competent performance. While I have always held Mihran Tachdjian in the highest regard for his ability to organize and disseminate pediatric orthopaedic knowledge, I have come to a new realization of the remarkable extent of his energies as my colleagues and I have done the work of rewriting this authoritative text. As our efforts came to a crescendo, we often found ourselves shaking our heads and muttering, "And you are telling me that one man wrote this by himself!"

How does one rewrite a classic? It must be done with respect for the original author and regard for the value of the original work. Gray no longer writes *Gray's Anatomy*, and Webster no longer edits a dictionary. As I see it, the better we revise and update the book, the more homage we pay to its originator. With that in mind, our goal has been to produce a book that is new and vibrant. We hope our effort is such that Dr. Tachdjian would have been proud to have our names added to his. As we have rewritten the chapters, we have tried to keep the spirit of Dr. Tachdjian's work while adding our point of view, our topical organization, and relevant information published since the last edition was written. We hope the result is useful, practical, readable, and authoritative. We have added what we have learned from our extensive experience and our large collection of clinical material. The text of the major chapters is new, while some smaller chapters have been extensively revised. We have updated and preserved many of Dr. Tachdjian's excellent surgical plates. Many new figures and plates have been added, keeping the emphasis on the fact that this is a complete work *for surgeons, written by surgeons*. The chapter on polio remains unchanged as a tribute to Dr. Tachdjian, not out of courtesy, but out of recognition that this chapter says everything one needs to know about the treatment of polio in a clear and succinct manner. Many relevant principles of orthopaedic surgery remain beautifully explained in that chapter.

Pediatric orthopaedics has grown into a specialty of its own through the efforts of Dr. Tachdjian and his contemporaries. There was a time when any orthopaedist felt capable of doing any orthopaedic operation. Today, subspecialization is a fact of life, and few would undertake complex procedures in the whole gamut of orthopaedics. This book is for those who practice pediatric orthopaedics, those learning the subspecialty, and orthopaedists in general who are faced with children's problems. We have not attempted to tell anyone what he or she can or cannot do, but we have indicated which procedures require extensive experience and training to be safely and successfully performed.

Our reference lists are shorter than in previous editions, as many older references and many non-English references have been omitted. For the historian, these are available in previous editions of this text. We have emphasized references that are available in most libraries, those that are classics in the field, and review articles detailing current concepts.

The effort has been larger than envisioned, and I owe tremendous thanks to the hard-working staff clinicians of Texas Scottish Rite Hospital for Children (TSRH), whose names are listed in the author credits. We have become better, more informed physicians and surgeons because of the experience, but I fear significant family time has been lost that cannot be easily repaid. To them go my eternal, heartfelt thanks. Special credit goes to Cindy Daniel, our organizer and technical editor, who took on the job with incredible vigor, dedication, and intelligence. Her willingness to work enormous amounts of overtime helped drive the project to completion. Also, I thank Louise Hamilton, my secretary; Phyllis Cuesta, our manager; and Alicia Gregg and Joyce Wagner for all their help. A huge word of thanks goes to Roger Bell, Stuart Almond, Pat Rogers, Rick Smith, and Sandy Carduff in our media department for the immense number of illustrations that now grace the text. I thank the entire staff of TSRH for their support, especially Sam Hilburn, chairman of the board; J. C. Montgomery, president; and Robert L. Walker, administrator, for their generous support. Finally, a special word of thanks is sent upward to our first technical editor, Dan Faber, a dedicated, sensitive person who passed away during the preparation of this book.

Tony Herring



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PREFACE TO THE PREVIOUS EDITION

During the past 18 years, great strides have been made in pediatric orthopedics. A new edition of this book is long overdue. The gestation period of such an *Arbeit* has been prolonged because of the tremendous amount of labor involved in writing a single-author book. The objectives and format of the textbook have not changed from the first edition. I have attempted to present a thorough and comprehensive treatise on the affections of the neuromusculoskeletal system in children.

I have expressed my preferred methods of treatment and surgical procedure based upon my personal experience and the privilege of association with the leaders in pediatric orthopedics throughout the world who have participated in the faculty of the Pediatric Orthopedic International Seminars, which I have directed annually since 1972. The names of the faculty appear in the acknowledgments in the following pages [second edition].

The illustrations and operative plates are all original; the

majority represent the superb artistry of Mr. Ernest Beck, to whom I am greatly indebted. I also wish to acknowledge Miss Patricia Piescinski for her beautiful drawings.

I wish to thank the entire staff of the W.B. Saunders Company, particularly Miss Ruth Barker, Mr. Albert Meier, Mrs. Kathleen McCullough, and Mr. Edward H. Wickland, Jr.

I would also like to express my gratitude to Mrs. Mikie Boroughf, who assisted in the preparation of this book.

A question frequently posed to me over the years has been, "How do you write such an extensive book?" Every word has been handwritten in my illegible handwriting, readable only by Mrs. Lynn Ridings, without whose assistance and editorial support this work would not have been possible.

Mihran O. Tachdjian, M.D.

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Medicine is an ever-changing field. Standard safety precautions must be followed, but as new research and clinical experience broaden our knowledge, changes in treatment and drug therapy become necessary or appropriate. Readers are advised to check the product information currently provided by the manufacturer of each drug to be administered to verify the recommended dose, the method and duration of administration, and the contraindications. It is the responsibility of the treating physician, relying on experience and knowledge of the patient, to determine dosages and the best treatment for the patient. Neither the publisher nor the editor assumes any responsibility for any injury and/or damage to persons or property.

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