MANUAL THERAPY OF THE EXTREMITIES

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Foreword

The quality and utility of any resource, such as a textbook, is directly related to its inherent ability to provide the most salient and necessary information in the most efficient and effective manner, particularly when it comes to managing the patient currently in your hands. Dr. Eric Shamus and Dr. Arie van Duijn have developed an extremely valuable resource for practitioners who use manual therapy. In collaboration they bring a tremendous depth and breadth for management of patients using manual therapy techniques. Their extensive and unique backgrounds in clinical practice, education, and research have provided them with a perspective that has created a textbook that will have utility for a broad spectrum of both advanced clinicians as well as students at the beginning of learning manual therapy knowledge and skills.

My involvement within professional leadership, clinical practice, education, and advocacy in orthopaedic manual physical therapy (OMPT) for the past 30 years, has provided a unique appreciation for the depth and breadth of this incredibly valuable advanced subspecialty of the physical therapist profession. Manual therapy is interesting in that within its simplest form, it is a "technique" that is practiced by many individuals within health care who possess the appropriate education, skill, and regulatory designation (some manual therapy techniques, such as mobilization/manipulation, require immediate and continuous examination and evaluation throughout the intervention and, therefore, are performed exclusively by licensed professionals who have the necessary educational training and skill). Simultaneously, manual therapy is an acknowledged designation for an advanced subspecialty area of clinical practice with a unique philosophical paradigm for management of patients with disorders of the musculoskeletal, neurologic, and/or movement systems (also known as OMPT). This latter appreciation is far more complex and less understood by many individuals outside of the OMPT paradigm, including practitioners who simply perform manual therapy techniques.

Although this textbook has many extremely valuable attributes, one of its primary strengths is the ability to bridge the gap between those individuals who perform manual therapy techniques and the advanced OMPT practitioner who uses complex clinical reasoning algorithms to determine the most efficient and effective intervention, including manual therapy techniques, during the provision of patient management. The organization of this textbook promotes a high level of algorithmic reasoning because it demonstrates the various manual therapy techniques available in one place for each joint. Specificity and uniqueness are the norm among patient presentations, even among those with fairly similar diagnoses and impairments. The advanced OMPT practitioner identifies the underlying cause for the dysfunction and then quickly provides the most likely intervention to promote the best opportunity for resolution of the problem. When that intervention is ineffective, they quickly move on to another technique that is known to be effective for the given impairment. Having a robust variety of the most effective and efficient OMPT techniques that are distinct, all presented and described in one place is critical for the developing student and/or practicing clinician to learn and acquire advanced algorithmic clinical reasoning. In addition, many patients present with multiple problems within a joint that will require a variety of techniques. Again the manner in which the material is presented within this textbook—the various techniques all presented simultaneously—is perfectly suited to provide clinicians with the best opportunity to successfully manage their patients. For example, an individual presents with a joint capsular restriction, physiologic (i.e., protective) muscle guarding, and decreased muscle flexibility; the textbook provides a list with descriptions of the appropriate utility for the techniques necessary to manage all three of these different problems, bundled together to promote smooth management along the continuum of care for that patient. Finally, all clinicians have their "go-to" techniques but know they are not always effective with every patient. Another wonderful attribute of
this textbook is that it demonstrates multiple ways to manage a condition so during those times when
the go-to technique is not effective, it provides alternative techniques that have high effectiveness.
This will deepen every clinician’s toolbox!

*Manual Therapy of the Extremities* provides learners throughout the continuum with an opportu-
nity to learn and improve skill acquisition for many manual therapy techniques. I strongly endorse
the use of this textbook for students, residents, OMPT fellows in training, and fellows of the American
Academy of Orthopaedic Manual Physical Therapy because I am confident that individuals from each
of those groups will find value within these pages. Although this textbook is written for today’s prac-
tice, I am confident that it will continue to demonstrate relevance for many years forward. I wish you
the best of luck with finding the path you are seeking.

Robert H. Rowe, PT, DPT, DMT, MHS, FAAOMPT
Our goal in writing this textbook is to provide the reader with a comprehensive resource for the teaching and learning of a variety of types of manipulation techniques for the extremity joints. We chose to describe a variety of types of techniques for each joint motion, considering that most other textbooks that cover extremity joint manipulation focus on only one specific type of technique.

We also chose to organize the text around the restricted motion rather than by the type of technique in order to increase the clinical usability of the textbook: the clinician will be able to choose from a variety of techniques to treat a restriction of motion in a specific direction, without having to navigate between chapters or textbooks. We provide an overview of the functional anatomy and biomechanics of the joints, as well as a review of the available evidence for the efficacy of manual therapy, so that the clinician and student may make an evidence-based decision regarding the most appropriate technique for the specific clinical situation.

Frequently, physical therapists consider only the biomechanical effects of joint manipulation. It is important for clinicians and students to also consider the neurophysiological and psychological effects. Joint manipulation, regardless of the type of technique, stimulates cutaneous and articular mechanoreceptors. These signals travel to the dorsal horn and lead to desensitization. This in turn leads to alteration in muscle tone, motor neuron pool activity, and altered fluid dynamics. Furthermore, the stimulus created travels to the supraspinal level. Research shows that there can be reduced activation and cerebral blood flow in the insular cortex after manipulation. The endogenous descending pain inhibitory system is also activated and creates a hypoalgesic effect, or a decrease in pain level. A clinician’s choice of manipulation technique should be guided by the desired treatment effect, and for this reason the textbook provides the clinician with a variety of types of techniques that may be used to target specific treatment effects and specific tissue types.

Organization of the Text

This textbook is unique in that it organizes manual therapy techniques from a variety of perspectives to improve extremity osteokinematic movement. Osteokinematic movement is defined as the movement around a center of rotation, joint axis. For example, hip manual therapy techniques are demonstrated for limited hip flexion, hip extension, hip adduction, hip abduction, hip rotation, and distraction. Restrictions in osteokinematic movement may result from the joint capsule, ligaments, muscles, neural tension, fascia, soft tissue restrictions, and so on, each requiring a different type of manipulation technique to achieve the maximum treatment outcome. In this textbook, we provide 8 categories of manipulation techniques for each osteokinematic motion, organized as follows:

- Joint manipulation, non-thrust
- Joint manipulation, thrust
- Muscle energy technique
- Manipulation with movement
- Counterstrain technique
- Myofascial manipulation
- Soft tissue manipulation
- Self-mobilization
Each chapter describes manual therapy for each extremity joint. In the introduction of each chapter the anatomy and functional biomechanics including arthrokinematics are described, followed by descriptions of common joint dysfunctions and the available evidence for manual therapy treatment of these dysfunctions. Detailed descriptions of the 8 types of techniques for each of the osteokinematic motions of that joint are provided, and each chapter concludes with a case study illustrating the clinical management of patients with joint dysfunction. The description of multiple types of techniques for each restriction is unique to this textbook, making it the most comprehensive resource available on this topic with the overall aim of providing students and clinicians a well-rounded approach to manual therapy.

Each technique is accompanied by a photo of the technique (over 500 photos are included in this text), a description of the patient’s and therapist’s positions, instructions on how to perform the technique, and notes for any items a therapist should keep in mind.

Every patient presents with different past medical histories, different body types, different physiologic presentations, and possibly his or her own bias on the use of manual therapy. Clinicians need to have a variety of manual therapy techniques based on these differences. In addition, clinicians may try a particular technique without success, and this textbook provides alternate types of techniques that may be used based on the specific patient scenario. Techniques for self-mobilization are included to allow the patient to continue working on improving mobility and normalizing the movement patterns. Keep in mind that the effects of manipulation are transient unless they are followed by neuromuscular reeducation and strengthening. Rarely is it appropriate to use these techniques in isolation. Manual therapy techniques have their greatest benefit when combined with additional physical therapy interventions.

This is just a small sampling of the many techniques available to the manual therapist. We hope you find them useful.

Resources

This book is accompanied by a suite of resources:

- Videos demonstrate more than 190 manual therapy techniques.
- Slides with Lecture Outlines aid instruction of the material in the text.
- Test Banks are provided to help assess students on the content.
- Anatomical Labeling Exercises help students develop a foundational understanding of the anatomy of the joints included in this text.
- Skill Checklist aids in the assessment of the practical application of the material.
- Image Bank provides a quick overview of the key images in this text.
About the Authors

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Eric Shamus is an associate professor and chair of the Department of Rehabilitation Sciences at Florida Gulf Coast University (FGCU). Before FGCU, Dr. Shamus spent 14 years on faculty at Nova Southeastern University teaching in the Physical Therapy and Osteopathic Medicine programs. He taught a range of manual therapy techniques from muscle energy, counterstrain, facilitated positional release, cranial techniques, myofascial release, movement mobilization, and high-velocity low-amplitude thrust techniques. He earned his bachelor’s degree in physical therapy from Florida International University, master’s degree in biomechanical trauma from Lynn University/University of Miami, PhD in educational leadership from Lynn University and doctor of physical therapy degree from Sage University. Dr. Shamus is the author of several textbooks. He has participated in numerous national and international presentations as well as authoring multiple chapters and journal articles. In manual therapy, he teaches continuing education courses and presents to physical therapy orthopedic residents and manual therapy fellows. Eric is an active member in the American Physical Therapy Association (APTA). In the Florida Physical Therapy Association, he is the conference committee chair, serves on the continuing education committee, serves on the dry needle task force, and served on the Temporary License Task Force. For the last 15 years, he has been a delegate from Florida for the APTA House of Delegates. He is a member of American Academy of Orthopaedic Manual Physical Therapists (AAOMPT).

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Arie J. van Duijn is an associate professor and program director of the Doctor of Physical Therapy Program at Florida Gulf Coast University. He has a BS degree in physical therapy from the Academie voor Fysiotherapie in Leiden, The Netherlands, a postprofessional master of science in physical therapy degree from the University of St. Augustine, and a doctor of education degree from the University of Central Florida. Dr. van Duijn is a certified orthopedic clinical specialist and is certified in manual therapy by the University of St. Augustine. His current area of practice/teaching includes orthopedic physical therapy with a special interest in manual therapy of the spine and the extremities. His research interests include the scholarship of teaching and learning with an emphasis on orthopedic manual physical therapy and the clinical application of manual therapy interventions. He has been teaching orthopedic manual physical therapy both at the entry level and through continuing education courses since 1998. He has served in leadership positions of the Florida Physical Therapy Association and was an invited participant to the APTA PASS (Physical Therapy and Society) Summit. He has served as a Florida chapter delegate to the APTA House of Delegates since 2001. He currently serves as the founding president of the Academic and Clinical Faculty special interest group of the American Academy of Orthopaedic Manual Physical Therapy.
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