

Contents

Preface to the Fourth Edition / vii

Preface to the Third Edition / ix

Contributors / xi

Reviewers / xiii

Acknowledgments / xv

PART I

Basic Concepts and Techniques

1 Properties of Dense Connective Tissue / 3

LARRY J. TILLMAN AND NEIL CHASAN

- Introduction / 3
- Functions, Composition, and Classification of DCT / 3
- Physical Properties of Collagen / 7
- Mechanical Properties of Collagen / 9

2 Wound Healing: Injury and Repair of Dense Connective Tissues / 15

LARRY J. TILLMAN AND JUNE E. HANKS

- Introduction / 15
- Inflammatory Phase / 15
- Proliferative Phase / 20
- Remodeling Phase / 22
- Effects of Stress on Scar Remodeling / 22

3 Arthrology / 27

DARLENE HERTLING AND RANDOLPH M. KESSLER

- Kinematics / 27
- Neurology / 37
- Joint Nutrition / 39
- Approach to Management of Joint Dysfunction / 43

4 Chronic Pain Management in the Adult / 53

JOYCE M. ENGEL

- Definition, Incidence, and Cost of Chronic Nonmalignant Pain / 53
- Common Chronic Pain Syndromes / 53
- Views of Pain / 54
- Role of the Physical Therapist / 55
- Conclusion / 58

5 Assessment of Musculoskeletal Disorders and Concepts of Management / 61

DARLENE HERTLING AND RANDOLPH M. KESSLER

- Rationale / 61
- History / 62
- Physical Examination / 66
- Clinical Decision-Making and Data Collection / 97
- Concepts of Management / 101

6 Introduction to Manual Therapy / 109

DARLENE HERTLING AND RANDOLPH M. KESSLER

- History of Joint Mobilization Techniques / 109
- Hypomobility Treatment / 112
- Hypermobility Treatment / 121
- Therapeutic Exercises / 123

7 Myofascial Considerations and Evaluation in Somatic Dysfunction / 129

DARLENE HERTLING

- Myofascial Considerations in Somatic Dysfunction / 129
- Postural Musculofascial Systems / 132
- Myofascial Integration and Dysfunction / 146
- Skin and Subcutaneous Soft Tissue Dysfunction / 153
- Evaluation of Soft Tissue Dysfunction / 154

- 8 Soft Tissue Manipulations / 179**
 DARLENE HERTLING
- Systems of Soft Tissue Manipulations / 179
 - Muscle Lengthening and Inhibition Techniques / 207
 - Therapeutic Muscle Stretching / 210
 - Capsular Stretch / 212
 - Common Myofascial Lesions and Their Management / 213
 - Summary / 252

- 9 Relaxation and Related Techniques / 261**
 JOYCE M. ENGEL
- Introduction / 261
 - Definitions of Stress / 261
 - Theories of Stress / 261
 - Physiologic, Cognitive, Emotional, and Behavioral Indicators of Relaxation / 262
 - Role of the Healthcare Practitioner / 262
 - Evaluation of Relaxation Effectiveness / 265
 - Conclusion / 265

- 10 Functional Exercise / 267**
 NEIL CHASAN
- Introduction / 267
 - Lower Extremity Functional Profile / 267
 - Exercise Progressions / 270
 - Testing for Function / 272
 - Lower Extremity Functional Profile / 272

PART II
Clinical Applications—
Peripheral Joints

- 11 Shoulder and Shoulder Girdle / 281**
 DARLENE HERTLING AND
 RANDOLPH M. KESSLER
- Review of Functional Anatomy / 261
 - Biomechanics / 265
 - Evaluation of Shoulder / 291
 - Common Lesions / 303
 - Passive Treatment Techniques / 323
 - Dynamic Stabilization and Functional Exercises / 342

- 12 Elbow and Forearm / 357**
 DARLENE HERTLING AND
 RANDOLPH M. KESSLER
- Review of Functional Anatomy / 357
 - Evaluation of Elbow / 365
 - Common Lesions / 370
 - Passive Treatment Techniques / 381

- 13 Wrist and Hand Complex / 391**
 DARLENE HERTLING AND
 RANDOLPH M. KESSLER
- Functional Anatomy / 391
 - Biomechanics of Wrist / 401
 - Function and Architecture of Hand / 402
 - Functional Positions of Wrist and Hand / 406
 - Examination / 407
 - Common Lesions / 415
 - Stiff Hand / 426
 - Passive Treatment Techniques / 430

- 14 Hip / 441**
 DARLENE HERTLING AND
 RANDOLPH M. KESSLER
- Review of Functional Anatomy / 441
 - Biomechanics / 445
 - Evaluation / 446
 - Common Lesions / 460
 - Passive Treatment Techniques / 471

- 15 Knee / 487**
 DARLENE HERTLING AND
 RANDOLPH M. KESSLER
- Review of Functional Anatomy / 487
 - Biomechanics of Femorotibial Joint / 492
 - Evaluation / 497
 - Common Lesions / 515
 - Passive Treatment Techniques / 539

- 16 Lower Leg, Ankle, and Foot / 559**
 DARLENE HERTLING AND
 RANDOLPH M. KESSLER
- Functional Anatomy of Joints / 559
 - Biomechanics / 574
 - Examination / 584
 - Common Lesions and Their Management / 597
 - Joint Mobilization Techniques / 613

- 17 Temporomandibular Joint and Stomatognathic System / 625**
 DARLENE HERTLING
- Functional Anatomy / 626
 - Applied Anatomy / 636
 - Temporomandibular Evaluation / 639
 - Common Lesions / 648
 - Treatment Techniques / 652

PART III

Clinical Applications—Spine**18 Spine: General Structure and****Biomechanical Considerations / 671**

DARLENE HERTLING

- General Structure / 671
- Review of Functional Anatomy of the Spine / 673
- Sacroiliac Joint and Bony Pelvis / 695
- Spinal Kinematics / 699
- Common Patterns of Spinal Pain / 701
- Types of Spinal Pain / 702

19 Cervical Spine / 707DARLENE HERTLING AND
MITCHELL BLAKNEY

- Review of Functional Anatomy / 707
- Joint Mechanics / 713
- Cervical Spine Evaluation / 715
- Common Disorders / 732
- Treatment Techniques / 744

20 Thoracic Spine / 765

DARLENE HERTLING

- Epidemiology and Pathophysiology / 765
- Functional Anatomy / 765
- Common Lesions and Their Management / 769
- Thoracic Spine Evaluation / 779
- Thoracic Spine Techniques / 804

21 Cervicothoracic—Upper Limb**Scan Examination / 833**

DARLENE HERTLING

- Common Disorders of Cervicothoracic Spine, Temporomandibular Joint, and Upper Limb / 833
- Format of Cervicothoracic—Upper Limb Scan Examination / 837
- Summary of Steps to Cervicothoracic—Upper Limb Scan Examination / 840

22 Lumbar Spine / 843

DARLENE HERTLING

- Epidemiology / 843
- Applied Anatomy / 845
- Medical Models and Disease Entities / 852
- Evaluation / 858
- Common Lesions and Management / 879
- Treatment Techniques / 891

**23 Sacroiliac Joint and Lumbar–
Pelvic–Hip Complex / 935**

DARLENE HERTLING

- Functional Anatomy / 935
- Common Lesions and Management / 942
- Evaluation / 947
- Treatment Techniques of Pelvic Girdle and Acrococcygeal Region / 964
- Summary / 983

24 Lumbosacral—Lower Limb**Scan Examination / 991**

DARLENE HERTLING

- Common Lesions of Lumbosacral Region and Lower Limbs and Their Primary Clinical Manifestations / 993
- Scan Examination Tests / 996
- Clinical Implementation of Lumbosacral—Lower Limb Scan Examination / 1006

25 Case Histories and**Management Problems / 1009**

KAREN SHRADER DASILVA

- Other Forms of Therapeutic Exchange Between Patient and Practitioner / 1009
- Nonclinical Management Challenges / 1010
- Case Study Format / 1011
- Case Study Outline / 1011
- Definitions of Case Study Format / 1011
- Case Studies / 1012
- Conclusion / 1024

**Appendix: Component Motions,
Close-Packed Positions, Loose-Packed
Positions, Rest Positions, and
Capsular Patterns / 1025**

- Temporomandibular Joint / 1026
- Upper Limb / 1026
- Lower Limb / 1030
- Spine / 1032

Index / 1037