

FROM THE AUTHOR

As an educator, one of my goals in writing this book was to create an educational tool for massage therapists that will instruct at the appropriate level while subsequently meeting the needs of the profession as the required competency level rises. With dual certifications in athletic training and massage therapy, I have the privilege of actively working in both professions. My experience has given me unique insights relative to the growing needs of massage education, and I continually strive to improve the quality and standards of the profession both inside and outside the classroom.

Experience has shown me that many massage therapists possess excellent hands-on skills yet still need additional training in assessing and treating the intricacies of orthopedic conditions. Conversely, many therapists who have advanced training in treating orthopedic pathologies often lack the knowledge and skill of effective soft tissue application. While many texts on orthopedic assessment in massage are technically sound, some lack information when it comes to describing how to address specific medical conditions. This text seeks to fill in some of the blanks.

While this book focuses on the clinical aspects of massage therapy, it's been my experience that utilizing a variety of techniques, when applied with specific intent, achieves the best results. Therefore, throughout this text students are encouraged to tailor the information to suit each patient's specific needs.

In my opinion, there are two primary components of clinical massage: knowledge and assessment. First, a clinical massage therapist must have advanced knowledge of anatomy and physiology. Such knowledge will aid the therapist in determining when treatment is appropriate and when it is necessary to refer patients to other health care providers. Second, to determine the best course of treatment, a therapist must be able to skillfully assess a condition. Assessment includes everything from taking a client's history, palpating the tissue, and administering special tests to then incorporating all the results into a treatment plan using well-developed clinical reasoning skills. I have written this text with these two primary components in mind.

As massage therapy continues to grow and become accepted as a form of preventive and restorative health care, particularly in the treatment

of musculoskeletal dysfunction, the demand for highly skilled therapists who can tackle such pathologic conditions has grown as well. It is my belief that massage therapists can make a significant contribution to the preventive medicine movement. And while manual therapy is not the only tool available in preventive health care, it is a significant piece of the puzzle for an improved quality of life. My hope is that this text will contribute to the continuing growth of this dynamic form of health care.

ORGANIZATION AND STRUCTURE

Written primarily for the massage therapy profession, this text allows individual instructors to have the freedom and flexibility of either using it at its intended advanced level or tailoring it to their specific needs in the classroom. As an advanced examination of clinical orthopedic massage therapy, the text addresses the body's tissues and offers a systematic approach to applying various techniques in relation to specific orthopedic conditions. Its initial review of basic techniques serves to enhance one's existing knowledge of massage, thereby offering a platform of skills on which to build; it also offers fresh insight into the practice of massage as a whole. While the book introduces techniques that are modifications of common strokes, it does not identify any single technique as the "be-all and end-all" for every ailment. In fact, it allows for a broader application of the information by encouraging individual therapists to customize treatments based on their patients' specific needs. The four-step treatment outline allows therapists to utilize their strengths within the protocol by using their techniques of choice; however, a suggested method of treatment is always included for those with less clinical experience.

The text is divided into two main parts. While it is not intended to offer a comprehensive review of every massage therapy technique, Part I does review some basic components, including the importance of manual therapy and its place in health care; a working definition of clinical massage; basic equipment needs, draping techniques, proper body mechanics, and correct stroke application; and theory and principles of advanced techniques. Connective tissue massage encompasses a wide range of application methods; therefore, several of the major theories are covered, as well as the theory of trigger-point therapy. Also covered are advanced strokes, the use of active and passive motion, and various stretching techniques.

Part II begins by presenting a systematic approach to treating orthopedic conditions. It discusses the importance of having a focused approach on the condition and then addressing compensatory concerns. It then discusses proper assessment techniques and the steps necessary to make a prudent and proper treatment decision, including taking a history, determining the mechanism of the injury, and performing manual muscle testing and orthopedic assessments. Part II also addresses common conditions in various regions of the body, all of which were chosen because they are effectively treated through soft tissue therapies. This part also covers all the relevant information necessary for dealing with a specific condition, including topics such as anatomy and physiology, the client

history, proper orthopedic assessments, and stretching. Finally, Part II reviews the treatment of general conditions for which massage takes on a supportive role and focuses on compensatory issues.

FEATURES OF THE TEXT

Generally, the more senses involved in the instruction process, the better students retain the material. Therefore, the book offers support materials that are designed to appeal to students with a wide range of learning styles. Among these features are:

- Logically organized chapters, which allow for easy progression through the material
- Full-color photos and illustrations of the featured techniques and body structures
- A hardbound spiral cover, which allows the book to lie flat for easy reference while the reader is studying or doing practical applications
- Key terms listed at the beginning of the chapters that introduce important concepts
- User-friendly, at-a-glance marginal definitions
- Practical tips containing important information that engages the reader and provokes critical thinking
- A consistent organizational chapter format in Part II for effective learning
- Clear references throughout the chapters that assist readers in finding material located elsewhere in the text
- Chapter objectives at the start of each chapter that offer a preview of the chapter's material
- Review Questions at the end of each chapter
- Critical-Thinking Questions at the end of each chapter that encourage students to troubleshoot multiple scenarios and engage in discussion
- Quick Reference Tables at the end of each chapter in Part II that summarize key points covered in the chapter
- Links at the OLC to supplemental education materials

ONLINE LEARNING CENTER (www.mhhe.com/jurchclinical)

The Online Learning Center (OLC) consists of three sections: Information Center, Instructor Center, and Student Center. The Information Center has sections of the student text, including a sample chapter.

The Student Center also has sections of the student text, along with a mixed quiz for each chapter, the Glossary from the book, and games for enhanced learning.

The Instructor Center contains the Instructor's Manual for this text, which includes an overview of and introduction to the material to aid

instructors with its incorporation into the curriculum. The manual also includes extended chapter outlines, sample course outlines, curriculum suggestions, sample lesson plans, teaching strategies/instructor tips, learning activities, and answers to the questions in the text.

Also for the instructor are PowerPoint presentations for each chapter; an image bank of the text's illustrations, which can be printed and used as handouts; and EZ Test questions for each chapter.

McGraw-Hill's EZ Test is a flexible and easy-to-use electronic testing program. The program allows instructors to create tests from book-specific items. It accommodates a wide range of question types, and instructors may add their own questions, as well. Instructors can also create multiple versions of the test, and any test can be exported for use with course management systems such as WebCT, BlackBoard, and PageOut. EZ Test Online is a new service that gives instructors a place online where they can easily administer EZ Test-created exams and quizzes. The program is available for both PC and Macintosh operating systems.

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Walkthrough

chapter 9

Conditions of the Hip and Knee

chapter outline

I. Introduction

II. Anatomical Review

a. Bony Anatomy of the Hip

b. Bony Structures and Surface Anatomy of the Hip

c. Soft Tissue Structures of the Hip

d. Additional Soft Tissue Structures

e. Bony Anatomy of the Knee

f. Bony Structures and Surface Anatomy of the Knee

g. Soft Tissue Structures of the Knee

h. Muscles of the Hip and Knee

III. Movement and Manual Muscle Testing of the Region

a. Movements of the Region

IV. Dermatomes for the Hip and Knee

V. Trigger-Point Referral Patterns for Muscles of the Region

a. Gluteus Maximus

b. Gluteus Medius

c. Gluteus Minimus

d. Piriformis

e. Tensor Fascia Latae

f. Sartorius

g. Pectineus

h. Adductor Longus and Brevis

i. Adductor Magnus

j. Gracilis

k. Quadriceps Femoris Group

l. Hamstring Group

m. Gastrocnemius

VI. Specific Conditions

a. Hip: Piriformis Syndrome

b. Hip: Iliotibial Band Friction Syndrome

c. Knee: Patellofemoral Dysfunction

VII. Summary

VIII. Review Questions

IX. Critical-Thinking Questions

X. Quick Reference Tables

a. Bony Structures of the Hip

b. Soft Tissue Structures of the Hip

c. Bony Structures of the Knee

d. Soft Tissue Structures of the Knee

e. Muscles of the Hip, Thigh, and Knee

f. Trigger Points of the Hip and Knee

g. Orthopedic Tests for the Hip and Knee

chapter objectives

At the conclusion of this chapter, the reader will understand:

- bony anatomy of the region
- how to locate the bony landmarks and soft tissue structures of the region
- where to find the muscles, and the origins, insertions, and actions of the region
- how to assess the movement and determine the range of motion for the region
- how to perform manual muscle testing to the region
- how to recognize dermatome patterns for the region
- trigger-point location and referral patterns for the region
- the following elements of each condition discussed:
 - background and characteristics
 - specific questions to ask
 - what orthopedic tests should be performed
 - how to treat the connective tissue, trigger points, and muscles
 - flexibility concerns

KEY TERMS

acetabulum

angle of inclination

anteverision

chondromalacia patella

iliotibial band friction syndrome (ITBFS)

ligamentum teres

meralgia paresthetica

patellar tendinosis

patellofemoral pain syndrome (PFPS)

piriformis syndrome

quadriceps angle (Q angle)

screw-home mechanism

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Every chapter opens with a Chapter Outline, Objectives, Key Terms, and an Introduction that help prepare students for the learning experience.

Introduction The hip and the knee compose an important part of the lower extremity. While constructed differently, they are interrelated and dysfunction in one can affect the other. The hip and the knee provide a stable foundation that allows the upper body and the trunk to perform activity. Since humans interact with their surroundings through bipedal locomotion, limitations in either of these regions can be devastating.

The hip's strong, bony stability helps protect it from injury. It is one of the body's two ball-and-socket joints, and it is one of the largest and most stable joints in the body. During locomotion, however, the hip can be subjected to forces that are four to seven times the body's weight, thus making the joint vulnerable to stress-related injuries (Anderson et al., 2000). While injuries to the hip are not as common as injuries to the lower extremities, the overall prevalence of hip pain in adults has increased over time (Paluska, 2005). Yet 30% of hip-related pain still remains without a clear etiology.

There are three reasons why it is difficult to determine the origin of hip pain:

1. The joint is not superficial. Pain may be felt across a broader region, making it more difficult to determine which structures are involved.
2. Hip pain is often referred from the surrounding structures, and dysfunction in the sacrum, the lumbar spine, and the groin can all refer pain into the hip.
3. There is debate as to the specific topographic area that can be defined as the "hip" (Birrell et al., 2005).

Not surprisingly, the prevalence of hip pain depends largely on the assessment methods used, and, unfortunately, no gold standard of assessment exists.

Quite different from the hip, the knee is prone to traumatic injury because of its anatomy. It is located at the ends of the two longest bones in the body, the femur and tibia, which act as two long lever arms, exposing the joint to large torques. Because these two long bones are stacked on one another, the knee has to rely on soft tissue structures, such as ligaments and muscles, to provide stability. This intricate balance between static and dynamic structures makes the knee a complicated area to assess. All the relevant structures must be considered, including related areas that may refer pain into the knee, such as the lumbar spine, hip, and ankle.

Entire texts are written on the pathology of the hip and knee. While this chapter is not a comprehensive review of these regions, it does provide a thorough assessment of the dysfunctions and some of the more common pathologies in the regions. In addition, this chapter covers:

- Specific bony landmarks for palpation
- Soft tissue structures, including the muscles of the region
- The movements of the region, and basic biomechanics of the hip and knee
- Manual muscle tests for the hip and knee
- Dermatome and trigger-point referral patterns for the involved muscles
- Some common causes of dysfunction, and how to assess and treat them using soft tissue therapy

Dynamic color illustrations and photographs enhance learning.

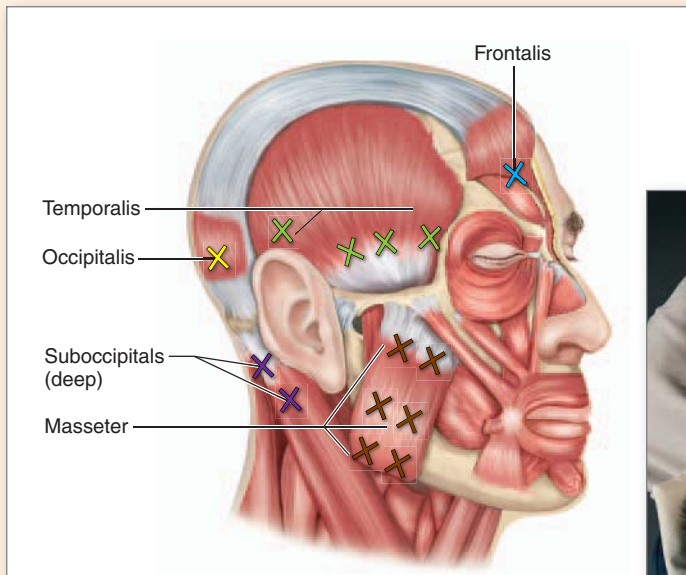






Table 6-8 Orthopedic Tests for SIJ Dysfunction

Orthopedic Test	How to Perform
<p>Gillet's (sacral fixation) test</p>  <p>(This is a mobility test.)</p>	<p>Have the client stand directly in front of you, facing away.</p> <p>Place your thumbs on the PSIS on both sides, and have the client fully flex one thigh to the chest while standing on one leg.</p> <p>The PSIS on the flexed side should move in an inferior direction. If it does not move or moves in a superior direction, it indicates a hypomobile joint or a "blocked" joint; this is a positive test.</p>
<p>Sacroiliac compression (gapping) test</p>  <p>(This is a pain provocation test.)</p>	<p>Client is in the supine position.</p> <p>Place your hands cross-armed on the ASIS, and repeatedly apply a downward and outward pressure to the ASIS as if you were trying to spread the two ilia apart.</p> <p>Unilateral pain in the posterior leg, the PSIS, or the gluteals may indicate an anterior sprain to the SIJ. Pain elsewhere may indicate the involvement of other structures.</p>
<p>Patrick's (Faber's) test</p>  <p>(This is a pain provocation test.)</p>	<p>Client is in a supine position.</p> <p>Place the outside of the foot and ankle of the involved leg on the knee of the contralateral leg, and let it fall out to the side.</p> <p>Place one hand on the knee of the involved leg and the other hand on the ASIS of the uninvolved leg.</p> <p>Stabilize the ASIS, and apply pressure to the bent knee.</p> <p>Pain in the SIJ of the involved side may indicate pathology and is considered a positive test.</p>
<p>Gaenslen's test</p>  <p>(This is a pain provocation test.)</p>	<p>Client is in the supine position close enough to the edge of the table that the hip extends beyond the edge.</p> <p>Have the client draw both legs up to the chest and slowly lower one into extension.</p> <p>Pain in the SIJ of the extended leg is considered a positive test and may indicate pathology.</p> <p><i>Note:</i> If the client cannot lie in the supine position, place him or her on the side and draw the bottom leg up to the chest; have the client hold the position. Bring the top leg into hyperextension while stabilizing the pelvis.</p> <p>Pain in the SIJ is considered a positive test.</p>

Tables within each chapter help summarize important information.

"It is a good, straightforward writing on the basic and useful information needed to plan a treatment." *Nancy Cavender, Rising Spirit Institute of Natural Health, Atlanta, GA*

Marginal definitions provide easy reference to the important terms within each chapter.



iliotibial band friction syndrome (ITBFS)

A common overuse injury caused by excessive friction between the distal iliotibial band and the lateral condyle of the femur, resulting in inflammation and pain.

Practical Tip boxes give students important information to expand on concepts or enhance the treatment of conditions.

Practical Tip

The primary goal in treating contusions is to remove the excess blood and fluid from the area as quickly as possible to provide the optimal environment for healing.

SUMMARY

“For a treatment to work, it must be specific” (Kraft, 2003). Formulating a treatment plan is an ongoing process for each client. It involves a constant sequence of assessing, treating, reassessing, and either continuing with the same treatments or trying something different. This requires that therapists continually use all of their resources to provide the most effective therapy possible. This chapter has discussed the components of gathering information to create a treatment plan. In order to know how to heal, the therapist must first understand the types of tissue involved, the ways injuries can occur, and the injury process itself. Information must be gathered from the client that will contribute to the overall picture of the problem. This information is gathered in several different ways, ranging from verbal questioning to manual assessment techniques. When an injury occurs, other structures may be affected far away from the injury site. The methods of assessing the kinetic chain and determining the level of compensation were discussed in this chapter. Once the necessary information is obtained, various methods presented in the chapter help assemble it into useful patterns and a treatment plan.

The key points in each Chapter Summary help students retain what was just learned.

Review and Critical-Thinking Questions at the end of every chapter reinforce the concepts learned in the chapter.

REVIEW QUESTIONS

1. How large are the forces that the hip is subjected to during locomotion?
2. What is the angle of inclination?
3. What is the purpose of a labrum in the joint?
4. What is the strongest ligament in the body?
5. What is the function of the ligamentum teres?
6. What are the functions of the menisci?
7. What are the six orientations of the sciatic nerve in relation to the piriformis?
8. What is a classic symptom of iliotibial band friction syndrome?
9. What is the “movie theater sign”?
10. What is the difference between true and functional leg-length discrepancies?
11. Why does the degeneration of the articular cartilage in chondromalacia not cause pain?
12. What is the Q angle, and how is it measured?

QUICK REFERENCE TABLES

Bony Structures of the Lumbar Spine

<i>Lamina groove</i>	Groove on either side of the spinous processes from the cervical region to the sacral region.
<i>Umbilicus</i>	Known as the belly button and lies at the level of L3-L4.
<i>L4-L5 interspace</i>	L4-L5 interspace should line up with the top of the iliac crest.
<i>Iliac crest</i>	Place the palms of your hands in the flank area just below the ribs, and press down and in. You should feel the top of the crests.
<i>Transverse processes L1-L5</i>	Directly lateral to their spinous processes. Make sure you are lateral to the musculature. The longest and easiest to find is L3. Use the L4-L5 interspace to locate L4 and the rest of the segments. L1 is more difficult to locate as it is partially covered by the 12th rib. L5 is also difficult, as it is covered by the iliac crest.
<i>Iliac tubercle</i>	From the top of the crests, move anteriorly to find this tubercle. It is the widest point on the crests.
<i>Anterior superior iliac spine (ASIS)</i>	Most anterior part of the crest. Have the client lie supine, and place the palms of your hands on the front of his or her hips.
<i>Anterior inferior iliac spine (AIIS)</i>	From ASIS, move inferiorly about ½ inch. You won't be able to directly palpate this structure.
<i>Pubic crest</i>	Place your fingertips in the umbilicus. Rest your hand in an inferior direction on the abdomen. Slowly press down and in; the heel of your hand will hit a bony ledge.
<i>Pubic symphysis</i>	Once you find the crest, there is a joint directly in the middle.
<i>Pubic tubercles</i>	On either edge of the pubic crest are small bumps.
<i>Anterior transverse processes of lumbar spine</i>	Have the client flex the knees to soften the abdomen. Use the umbilicus and ASIS as reference points. Starting at the ASIS, slide into the tissue until you reach the lateral edge of the rectus abdominus. Once there, direct pressure downward.

QUICK REFERENCE TABLE

Quick Reference Tables summarize information discussed in the chapter in a quick and easy format.

“The Quick Reference Tables make the material easier to follow.”
Michael Sullivan, Anne Arundel Community College, Arnold, MD