

# INTRODUCTION

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The knee is one of the most common areas of injury in American athletes. The lay public hears from professional sports announcers each week how many famous athletes have had knee surgeries or injuries. This critical and intricate joint is the largest in the human body. It must be stable enough to withstand considerable motion in flexion and yet be tight enough to not overextend in the opposite direction. A small degree of rotation adds another utility to the knee's function.

This issue of the *Journal of Back and Musculoskeletal Rehabilitation* is guest edited by a physiatrist and an orthopedic surgeon, each providing the distinctive perspectives of their professions. We are pleased to have Brian Bowyer and Wilhelm Zuelzer sponsor our special issue on the knee.

Zuelzer opens this special issue by providing an overview of the structure and performance required of the normal knee. He describes the knee as the primary link between the body's trunk and the ground. His introduction to the knee also reviews problems of instability and injury that also reduce motion and cause pain for patients.

Clearman's article gives a view of functional rehabilitation of the knee. She reviews how goals of rehabilitation for the injured knee may be designed, identifying the four basic steps for a knee rehabilitation program that should be followed in sequence to achieve the optimal outcome for the patient. She covers the processes for controlling inflammation, increasing range of motion, training for strength, and retraining for proprioceptive and neuromuscular changes due to injury, immobilization, or surgery. Her article takes the clinician from ice application all the way to recovery.

Bowyer provides an overview of patellofemoral dysfunction and overuse syndromes. He covers anterior knee pain from insidious development to trauma-induced damage. Patellar subluxation is detailed with several effective rehabilitation methods. Bowyer also addresses the excessive lateral pressure syndrome, abnormal patellar tracking problems, tendinitis, bursitis, and other disorders.

Meniscal injuries are covered in detail by Zuelzer in another contribution to this issue. He reviews the history, physical examination, work-up, and treatment of meniscal lesions and recommends eight standard tests for diagnosis of this type of trauma. He also discusses the difficulties in diagnosing meniscal injury, historical developments in treatment, and specific areas in need of additional research.

Cruciate and collateral ligament injuries are addressed by Dillingham and King. They discuss the rationale for rehabilitation to reduce the complications of inactivity, injury, or surgery. After detailing the anatomy and biomechanics of the knee in relation to the ligaments, they describe at length treatment methods for specific kinds of ligament injuries.

A recent issue of *JBMR*, guest edited by Lillegard and McGrew, focused on the young athlete. In this vein, Anderson follows up in this issue with a view of knee disorders in the skeletally immature athlete. He reviews several common causes of knee pain and disorders in pediatric patients and emphasizes the importance of a precise diagnosis in the selection of a treatment regimen that is appropriate for the maturational level of the patient.

Hayes provides a special commentary for this issue on his view as a radiologist of the value of plain films. With the advent of major technical advances in imaging techniques, Hayes wonders what we may be missing from a more established methodology.

Kregel's regular feature, "Research Opportunities," closes this issue. He highlights opportunities through the National Center for Medical Rehabilitation Research of the National Institutes of Health. Kregel is director of research for the Rehabilitation Research and Training Center on Supported Employment at Virginia Commonwealth University. We hope our readers are finding this section helpfully informative.

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