Clinical Orthopaedic Rehabilitation | Knee Injuries

COURSE DESCRIPTION

This program is a practical, clinical guide that provides guidance on the evaluation, differential diagnosis, treatment and rehabilitation of patients with orthopaedic problems. The focus of this volume is on Knee Injuries.

In an easy to use format, it covers all orthopaedic conditions and procedures from initial examination through the postoperative or post-injury period, including arthroplasty, fractures, and sports injuries. Each chapter is written jointly by an orthopaedic surgeon and a physical therapist.

LEARNING OBJECTIVES

Knee Injuries | Module 1

- Describe the etiology, underlying pathology, onset or mechanism of injury, classifications, clinical findings including special tests and biomechanical testing, imaging abnormalities, and pain findings for the following (and associated structures, if applicable):
  - Anterior cruciate ligament injuries
  - Arthrofibrosis of the knee
  - Posterior cruciate ligament injuries
  - Medial collateral ligament injuries
  - Meniscal injuries
  - Patellofemoral disorders
  - Patellar tendon ruptures
  - Patellar tendinitis
  - Iliotibial band friction syndrome

Anterior Cruciate Ligament Injuries

- Discuss treatment strategies for the ACL-deficient knee following rupture
- Describe the suggested criteria for surgical intervention following ACL injury
- Detail the surgical interventions for ACL repair including timing of surgery, choice of graft, reconstructive technique, and fixation method
- Describe the principles guiding an effective rehabilitation protocol following surgical ACL reconstruction and special considerations
- Describe various open and closed kinetic chain exercises following surgical ACL reconstruction and the appropriate progressions

Perturbation Training for Postoperative ACL Reconstruction and Patients Who Were Nonoperatively Treated and ACL Deficient

- Define perturbation training and the goals following both ACL reconstruction and non-operative treatment
- Define copers and noncopers following ACL injury
- List the screening tests and criteria for successful outcome of nonoperative treatment of an ACL injury
- Describe effective treatment strategies for nonoperative treatment of ACL injury including functional progressions to perturbation training
• Describe various perturbation training exercises and functional progressions based on requirements for different sports

Knee Injuries | Module 2

Gender Issues in ACL Injury
• Report the incidence rate of ACL tears for female athletes compared to male athletes, along with the mechanism of injury
• Provide examples of intrinsic versus extrinsic factors and how they cause ACL injuries
• List ACL injury prevention and rehabilitation strategies for the female athlete including the components of a perturbation training program, hip strengthening exercises and functional progressions

Functional Testing, Functional Training, and Criteria for Return to Play After ACL Reconstruction
• List the risks involved in returning to play too soon following ACL reconstruction
• Describe the rehabilitation and surgical factors, strength assessments, and functional deficits to address when designing a return to play program and schedule following ACL reconstruction
• Describe the concepts behind functional training for the lower extremity including exercise and rehabilitation progressions
• Discuss the importance of trunk control in preventing ACL injuries

Knee Injuries | Module 3

• Define functional training and functional progressions, and why these are important when designing any rehabilitation program
• Describe the various performance measures to be assessed including functional strength, dynamic joint stability, speed, agility, and coordination, and plyometric exercises
• Give examples of plyometric activities including descriptions on how to perform each exercise
• Coach an athlete through speed, agility and coordination activities for the lower body
• Be prepared to give examples of how these plyometric activities relate to functional movement in sport
• Detail the Advanced Lower Extremity Sports Assessment (ALESA) including key design and implementation into a rehabilitation or training program
• Give examples of the tests used in the ALESA and describe how the test is scored

Other ACL Rehabilitation Adjuncts
• Describe the following ACL rehabilitation adjuncts with respect to efficacy, advantages, and timing of inclusion into therapeutic rehabilitation strategies
  o Continuous passive motion
  o Weightbearing status and transitional brace use
  o Muscle training
  o Electrical muscle stimulation and biofeedback
  o Proprioception
Knee Injuries | Module 4

Treatment and Rehabilitation of Arthrofibrosis of the Knee
- Describe the goals and primary focus of rehabilitative strategies for preoperative and postoperative surgical intervention for arthrofibrosis of the knee
- Identify and describe all 4 types of arthrofibrosis
- Be able to explain surgical intervention for each type of arthrofibrosis of the knee
- Understand how range of motion in the knee changes postoperatively

Posterior Cruciate Ligament Injuries
- Provide the biomechanics of the PCL-deficient knee with respect to anatomy and exercise demands
- Discuss rehabilitation considerations following PCL injury with respect to motion, weightbearing, external support, strengthening exercises, and risks to associated structures
- Describe proposed etiologies of PCL injury
- Provide rehabilitation strategies for operative and non-operative care of both acute and chronic PCL injuries

Medial Collateral Ligament Injuries
- Identify the classifications of MCL injury with respect to clinical findings and laxity (mm)
- Describe the focus of each stage of rehabilitation following MCL injury

Knee Injuries | Module 5

Meniscal Injuries
- Describe the differences in shape and movement between the lateral and medial menisci
- Discuss how vascular supply affects meniscal healing rates
- Be prepared to discuss rehabilitation considerations following meniscal injuries including weightbearing, axial limb alignment and post-surgical repair strategies

Patellofemoral Disorders
- Discuss various etiological factors that can contribute to patellofemoral pain
- Complete a thorough examination of the knee with a chief complaint of patellofemoral pain syndrome (PFPS)
- Identify the important signs and symptoms when evaluating a patient complaining of pain in the patellofemoral joint
- Discuss the rehabilitation considerations for PFPS

Knee Injuries | Module 6

Hip Strength and Kinematics in Patellofemoral Syndrome
- Define the frontal plane projection angle and how the clinician assesses this within a clinical examination
- Describe the differences between GPPS and ELPS with respect to clinical findings and rehabilitative strategies

Overuse Syndromes of the Knee
- Describe common clinical findings in patellar tendinopathy
Patellar Tendon Ruptures
- Detail the treatment strategies following surgical treatment of patellar tendon rupture

Articular Cartilage Procedures of the Knee
- Provide the clinical background, types of motion, strengthening and weightbearing progressions, and rehabilitation considerations following articular cartilage procedures of the knee
- Discuss how to guide a patient through adverse outcomes following articular cartilage procedures of the knee
- Provide the treatment algorithm for focal chondral lesions of both the femoral condyle and patellofemoral joint