Lower Extremity Injuries
The History

- How, When and Where?
- Swelling?
- Ability to Ambulate?
- Did you hear or feel a Pop?
- Did you Relocate an Injured part?

Lower Extremity Injuries
The Physical Examination

- Have the patient demonstrate the area of maximal tenderness
- Use one finger to localize tenderness
- Is the tenderness located over the bone or the soft tissues?
Knee Anatomy

Injury Terms:

Sprain vs Strain
Sprains

Severity:
- Grade I - min. structural disruption
- Grade II - partial disruption
- Grade III - complete disruption

Physeal Fracture Patterns
Knee Ligaments in Children

KNEE LIGAMENT INJURIES IN CHILDREN

- Femoral Epiphyseal Plate
- Medial Capsular Ligament
- Lateral Capsular Ligament
- Tibial Collateral Ligament
- Fibular collateral ligament
- Tibial Emphysial Plate
- Fibular Emphysial Plate

Knee Ligaments in Children

Cook Children's.
Knee Examination

- Always examine the hip when examining the knee
- Obligatory External Rotation with Hip Flexion is an important sign of potential hip pathology
- Hip pain is often referred to the anterior thigh or knee

Slipped Capital Femoral Epiphysis

- Obligatory External Rotation with Hip Flexion
Physical Exam

• Deformity
• Swelling
• Tenderness
• Mobility
• Stability

Physical Exam

• Lachman Test for ACL and PCL
• Anterior and Posterior Drawer
MRI

- Menisci
- Ligaments
- Tumor

Torn ACL

Physical Exam

- Assess Medial and Lateral Stability
Physical Exam

- Palpate the Joint Lines for Tenderness -- Meniscal Pathology

Meniscal Tears

- Rarely Before 12
- Occasionally Isolated
- Unusual to be Minor Trauma
- Consider Discoid
- Often Hemarthrosis
- May be Repairable!
Torn Lateral Meniscus

Physical Exam

• Patellar Apprehension
Radiographs: Merchant view

Patellar Dislocation
Patellofemoral Articulation
Patellofemoral Articulation

- Quadriceps vector
- Resultant vector
- Patellar tendon vector
Ankle Sprains

Physical Exam: Stability

• Anterior Talo-fib
• Calc- fib
• Posterior talo-fib
• Deltoid
• Anterior tib-fib / Interosseus
• Maisonneuve

Ankle Sprains

Common Injury Patterns
Foot and Ankle Anatomy

Ankle Ligament Anatomy
Ankle Sprains

- Extremely Common
- Frequency in Basketball: 70%
- Severe Grade: 32%
- Recurrence: 80%

Hamstring Strains
Strain vs. Avulsion Fracture

» Site of Injury

Thigh Injuries

Quadriiceps Contusion
Pelvic Avulsion Fractures

Physeal Fracture of the Fibula
Ankle Injuries

Physeal Injury

- Treatment

Immobilize, Non-weightbearing
Ice, Elevate
Referral 24-72°

Tillaux Fracture
Fifth Metatarsal Fracture

- Usually forced inversion injury
- Minimal findings but patient almost always refuses to weightbear on affected bone

Jones vs Styloid Lisfranc Injury
Lisfranc Injury

**Mechanisms:**
- longitudinal
- twist
- bend

**Treatment:**
- Identify or suspect!
- Splint, Ice, Elevate,
- Early referral to
- Ortho for ORIF