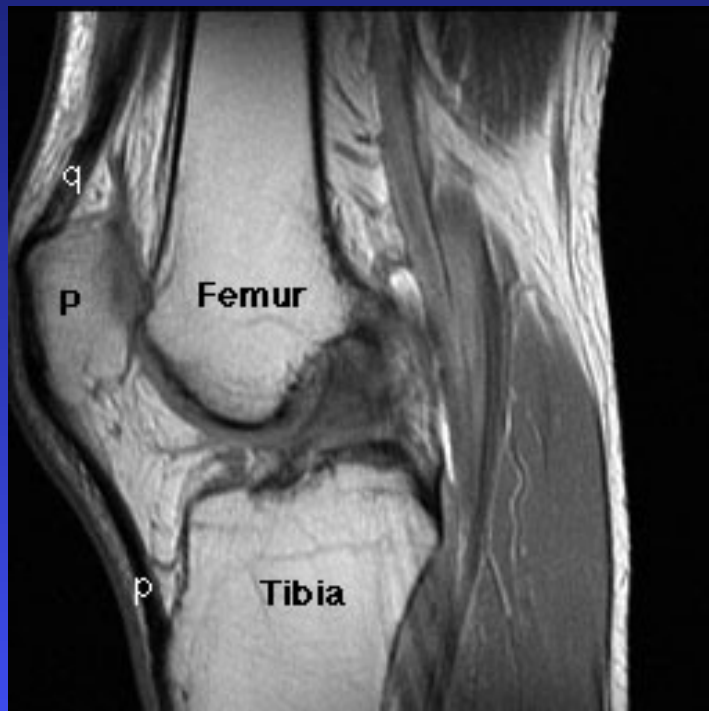


Lower Extremity Injuries



All You Need to Know

- Asses CSM
- Immobilize Injury
- Transport

Introduction

- Epidemiology of Ski Injuries
- Types of Knee Injuries
 - ◆ Sprains/ligament tears
 - ◆ Fractures
 - ◆ Dislocations
- Other Lower Extremity Injuries
- Prehospital Care
- Questions

Epidemiology of Ski Injuries

- 1970s: 5 to 8 per 1000 skier days
- 1990s: 2 to 3 per 1000 skier days
- Lower Ext. Injury:Upper Ext. Injury
 - ◆ 4:1 in 1980
 - ◆ 2:1 in 1990

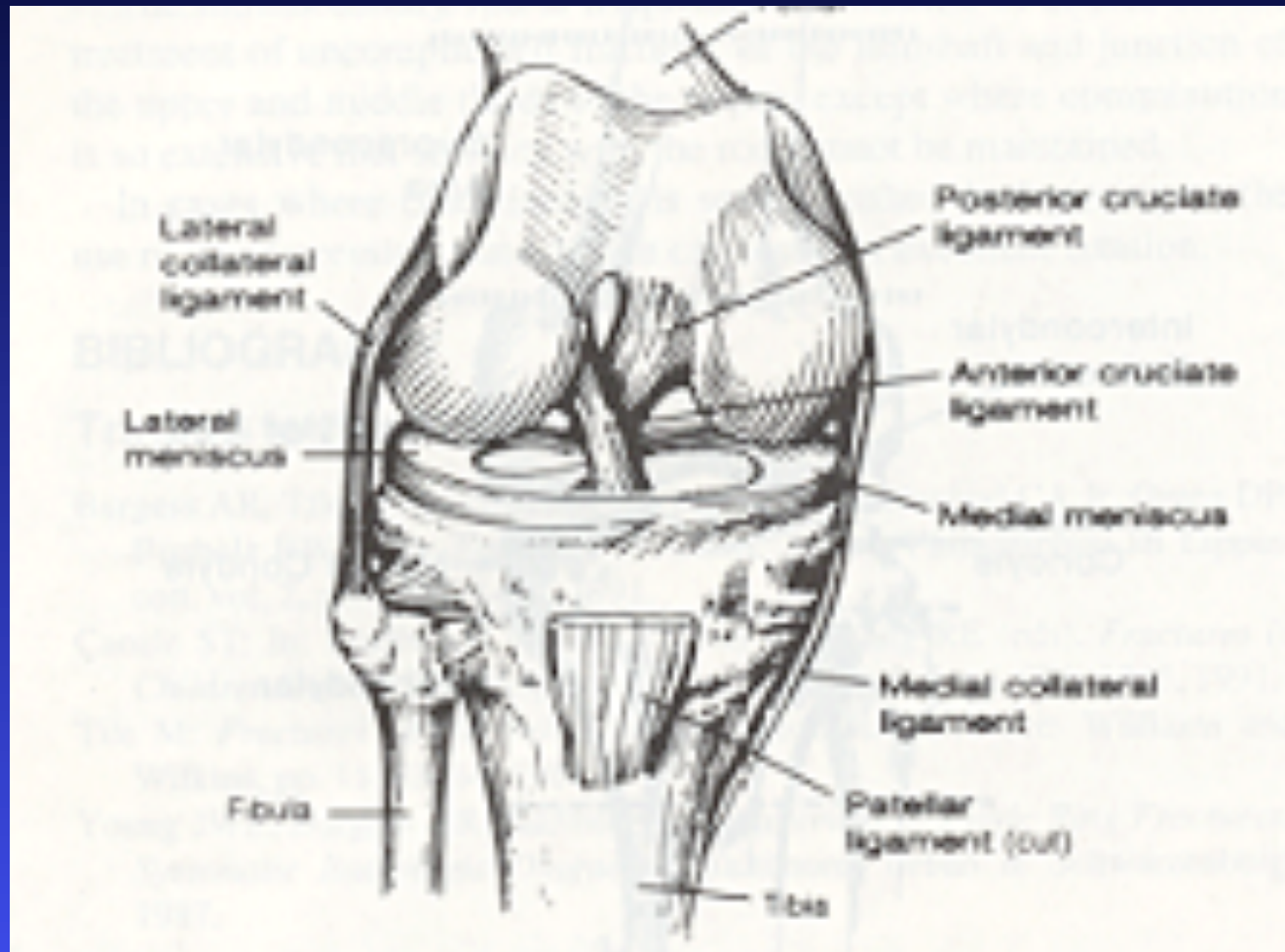
Epidemiology of Lower Extremity Injuries

- ↓ in Ankle Injuries
- ↑ in ACL Injuries
- Knee sprains most common (30% of all injuries in adults)

Knee Anatomy



Knee Anatomy



Types of Knee Injury

- Sprains
- Dislocations
- Fractures

Sprains

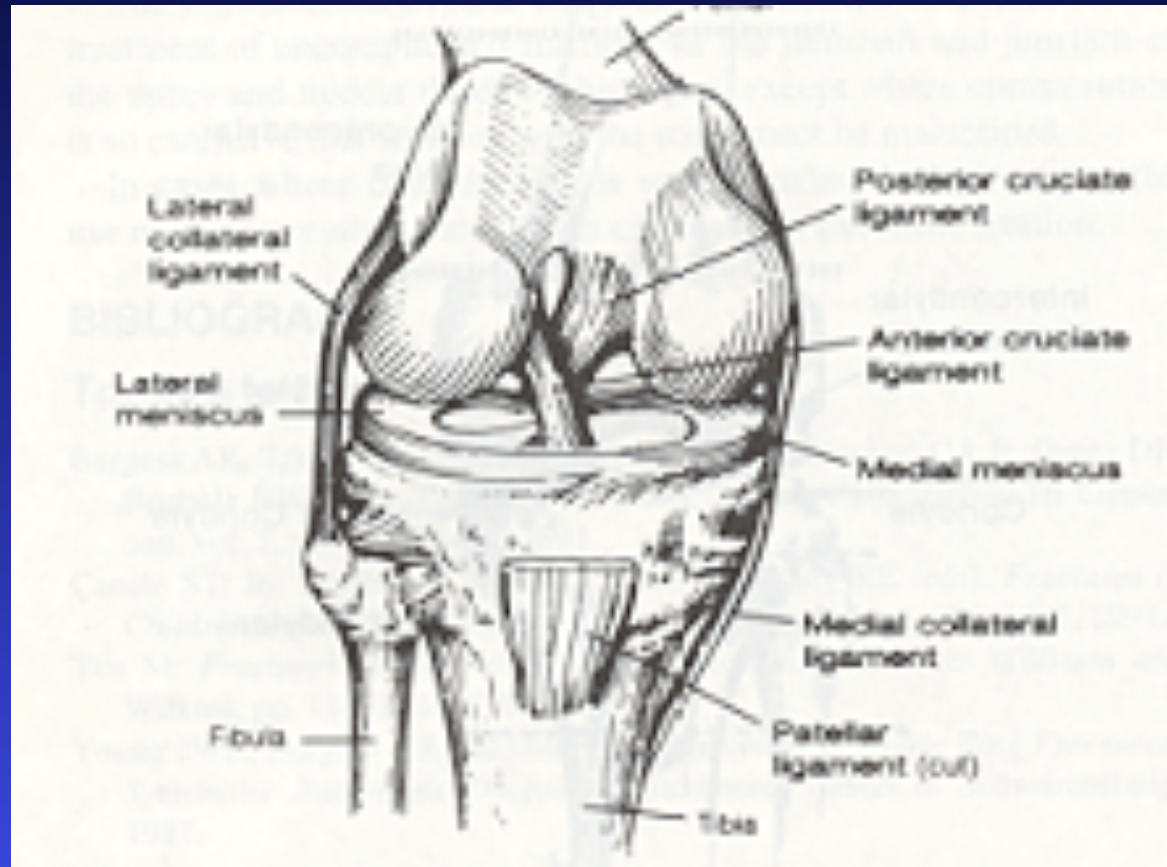
- Injury to ligaments supporting a joint
- Secondary to abnormal motion of the joint
- Range from minor tearing to complete disruption

Anterior Cruciate Ligament

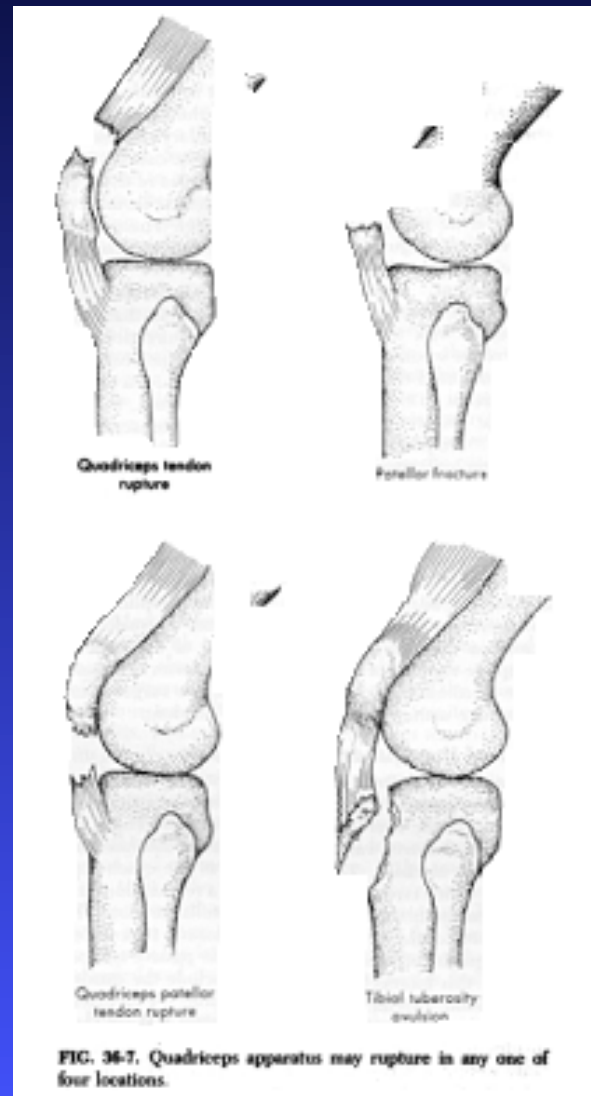
- Prevents tibia from moving forward on the femur
- Involved in 40% of sprains
- Usually injured by deceleration, flexion and rotation



Medial Collateral Ligament



Patellar Tendon/Quad. Ligament



Dislocations

- Loss of continuity between articular surfaces
- Patellar dislocation
- Knee dislocation

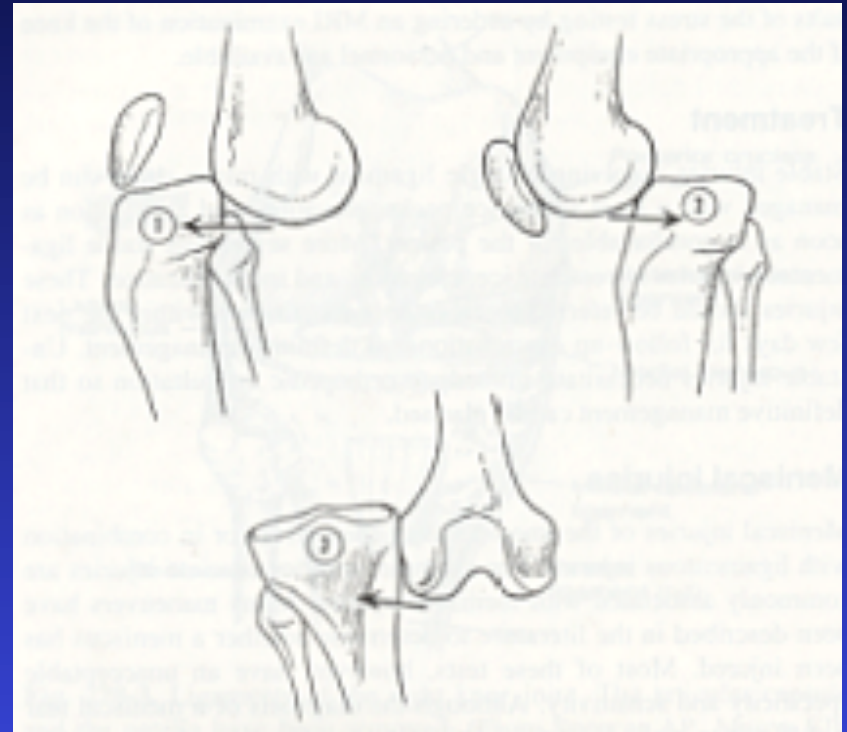
Patella Dislocation

- Secondary to twisting injury on an extended knee
- Patella is displaced laterally
- Usually easily reduced by hyperextending knee and flexing hip



Knee Dislocation

- Secondary to hyperextension, and rotary or direct force
- Associated ligamentous and possibly artery and nerve injury
- May reduce spontaneously but will be grossly unstable



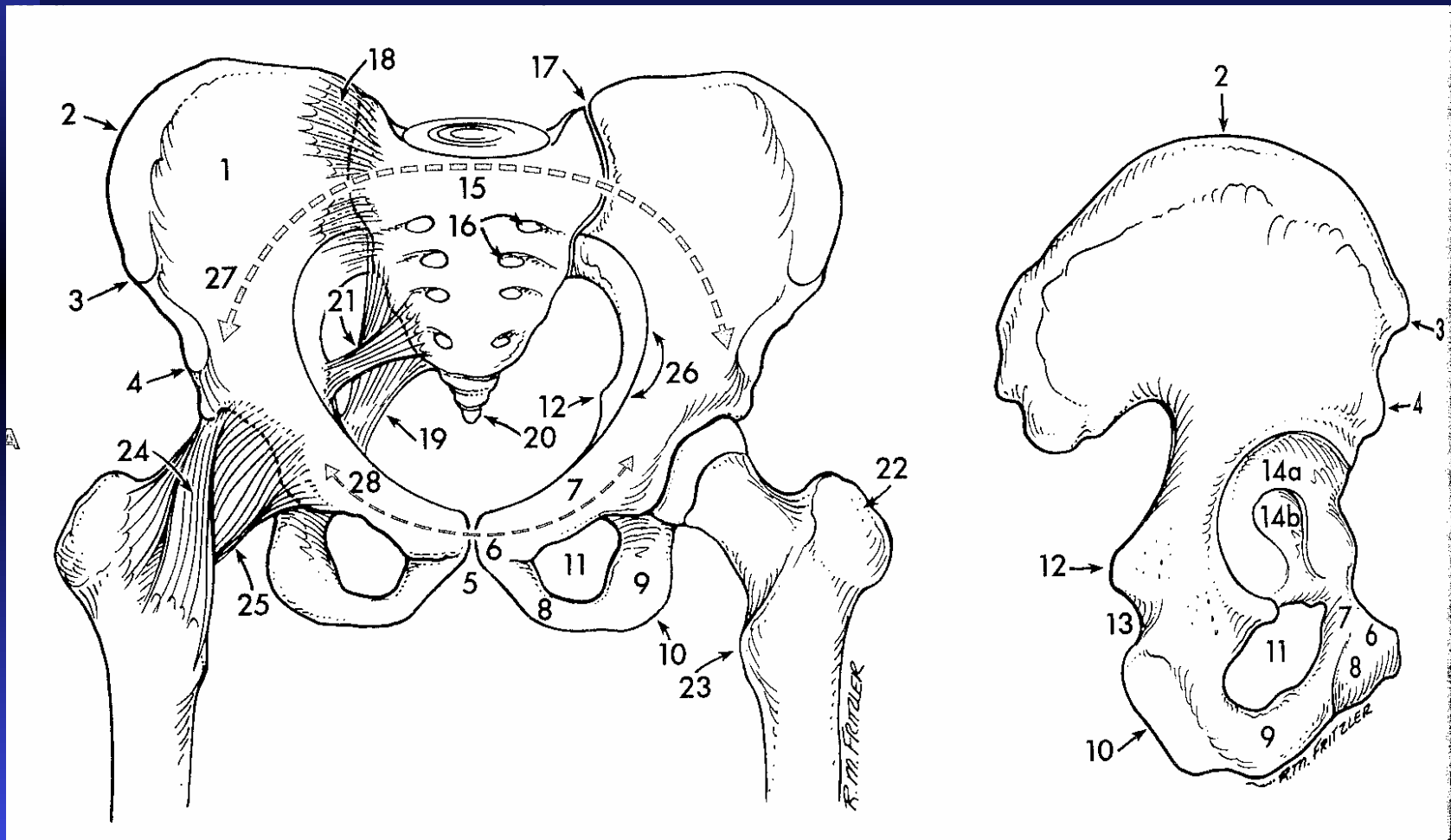
Fracture

- Can occur secondary to direct trauma or forceful twisting.
- Incidence has been declining
 - ◆ between 1972 and 1994 there was an 89% decrease in adult tibial fractures

Other Lower Extremity Injuries

- Pelvis
- Hip
- Femur
- Tibia/Fibula
- Ankle
- Foot

Pelvis Fracture



Pelvis Fracture

- Direct Blow - Skier vs Tree
- Many Types
- Potential for Significant Injury
 - ◆ Laceration of blood vessels
 - ◆ Proximity of other organs
- Examination
- Treatment

Hip Injuries

- Relatively Uncommon
- Fracture
 - ◆ Shortened and externally rotated
- Dislocation
 - ◆ Hip and knee flexed, thigh internally rotated

Femur Fracture

- Direct Blow or Violent Twisting
- Possibility of Significant Blood Loss
- CSM assessment
- Traction Splint
- Reassess
- Transport

Tibia/Fibula Fracture

- “Boot-Top Fracture”
- Frequently Angulated and/or Rotated
- Re-alignment
 - ◆ Painful
 - ◆ Reduce bleeding and preserve function
 - ◆ Allows splint placement

Ankle Injuries

- Snowboarders and Telemarkers
- Sprains
- Fractures
- Dislocations
- CSM Assessment
- Splint
 - ◆ Realignment

Foot

- Uncommon in Snowsports
- Falls From Heights
- Heel Fx Associated with Back Injury

Prehospital Care

- Assess neuro-vascular status
- Realignment
 - ◆ especially if greater than 1 hour from help
- Immobilize
- Transport