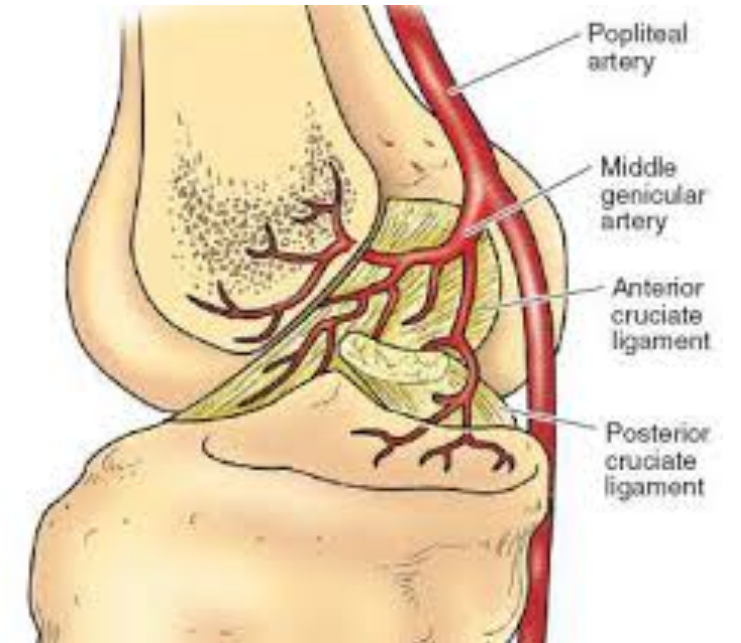
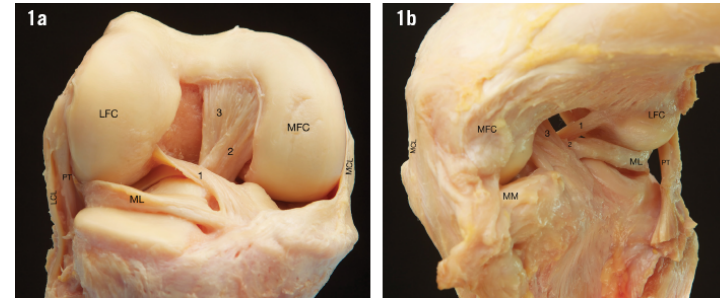
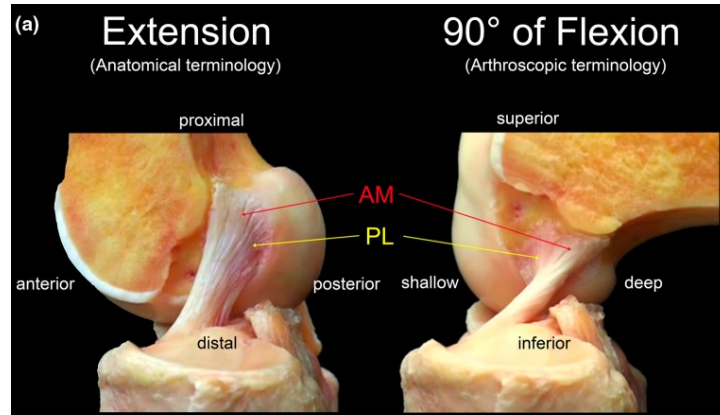


Sports injuries

Dr. Mohammad hamdan



Anterior cruciate ligament Tear



Anatomy

function

stability to prevent
anterior translation
of the tibia relative
to the femur/AM

Secondary restraint
to tibial rotation
and varus/valgus
rotation/PL

Mechanism of injury

non-contact pivoting injury







Sex-related differences

ACL injury more common in female athlete (4.5:1 ratio) due to:



Why?

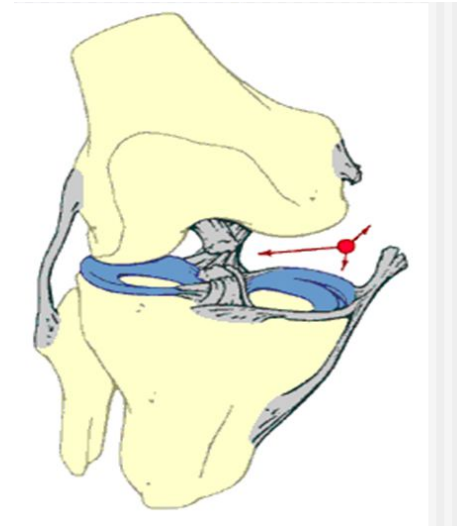
landing biomechanics and neuromuscular activation patterns (quadriceps dominant) play the biggest role

Risk factors

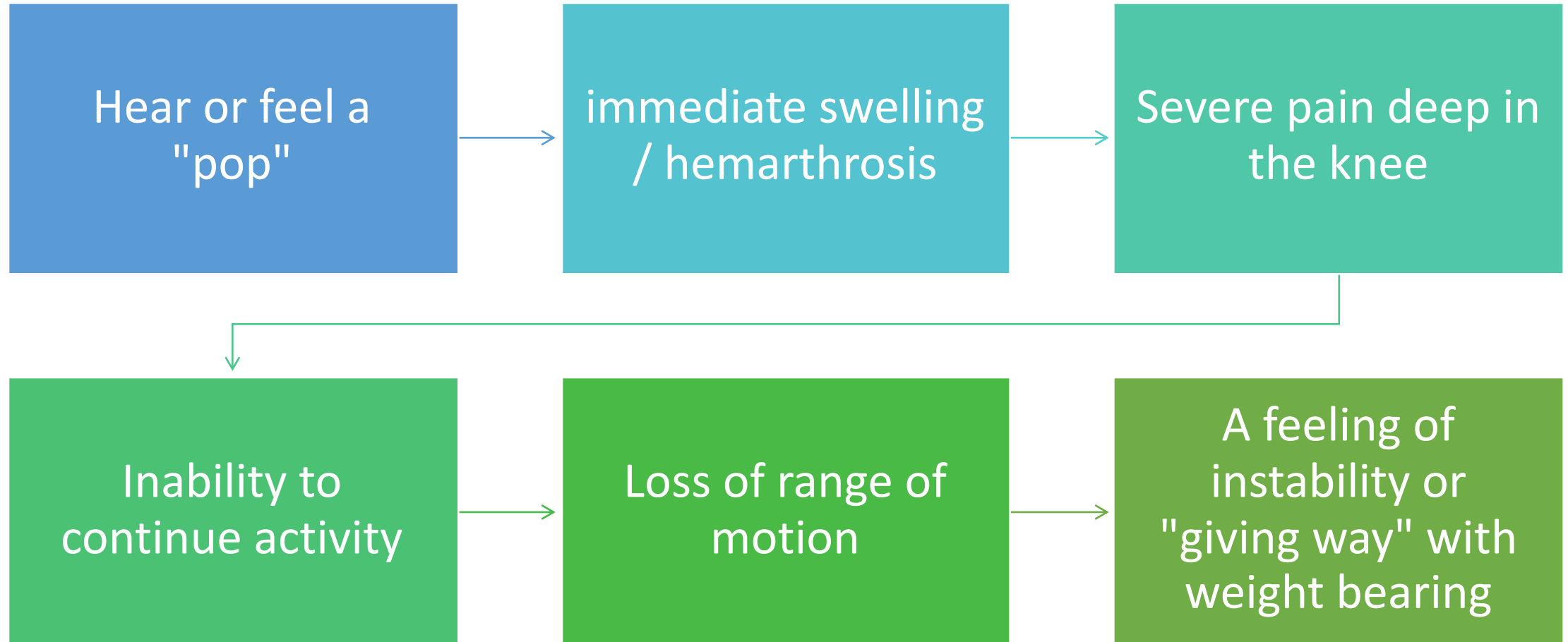
Anatomic	<ul style="list-style-type: none">• BMI• Impingement on intercondylar notch, smaller notch• Smaller ACL• Hypermobility/joint laxity• Previous ACL injury
Biomechanical	<ul style="list-style-type: none">• Increased knee valgus and extension during landing• Decreased knee and hip flexion• Fatigue resistance
Neuromuscular	<ul style="list-style-type: none">• Lower hamstring:quad ratio (more quads dominant)• Lower hamstring recruitment• Weaker core stability
Hormonal	<ul style="list-style-type: none">• Preovulatory phase of menses (hormones affect coordination)• Females on OCP not as affected during this phase
Genetic	<ul style="list-style-type: none">• Collagen production (COL5A1 gene linked to decreased risk of injury in women)

Associated injuries

- Meniscal tear...lateral > medial or medial > lateral
- Chondral injuries
- Unhappy triad



Symptoms



Physical exam

effusion

quadricep avoidance gait

Anterior Drawer test

Lachman's test (most sensitive exam test)

Pivot shift



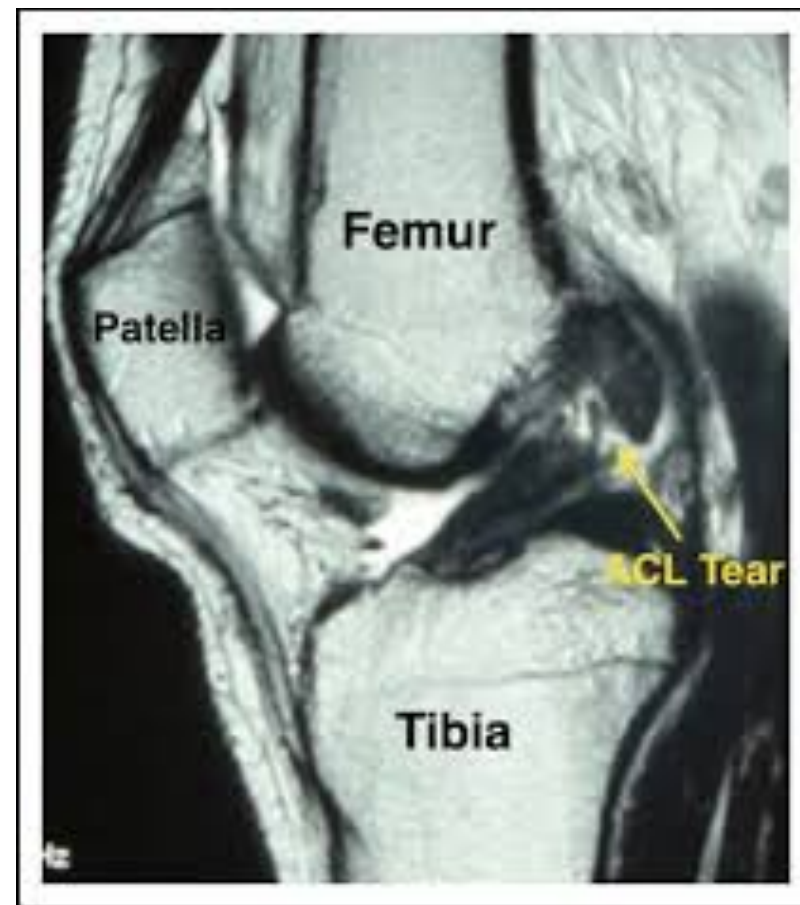
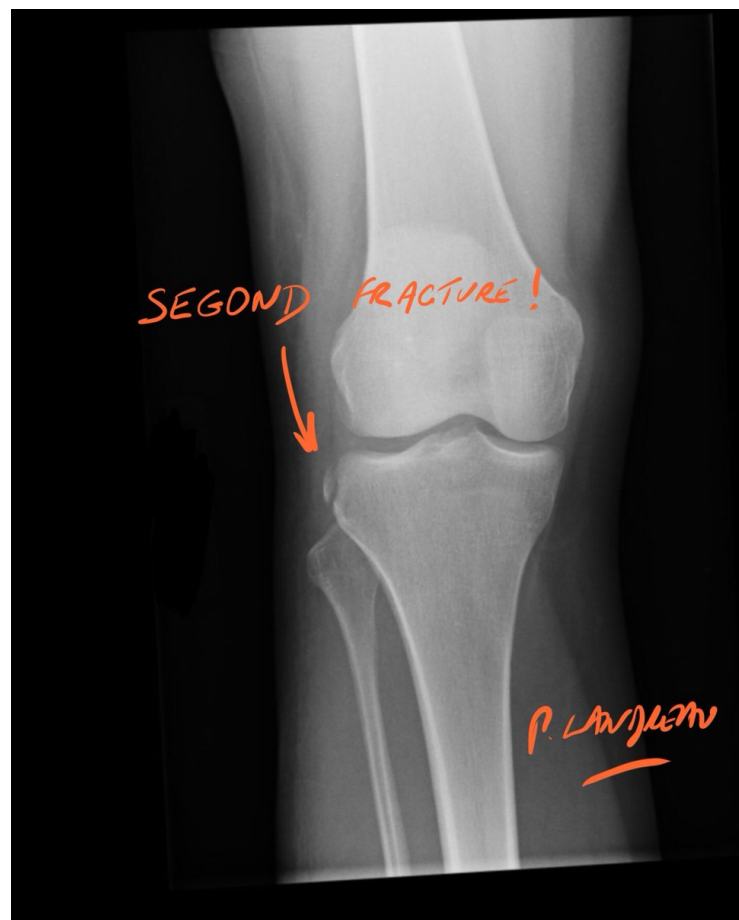
Imaging

Radiographs

- usually normal
- Second fracture

MRI

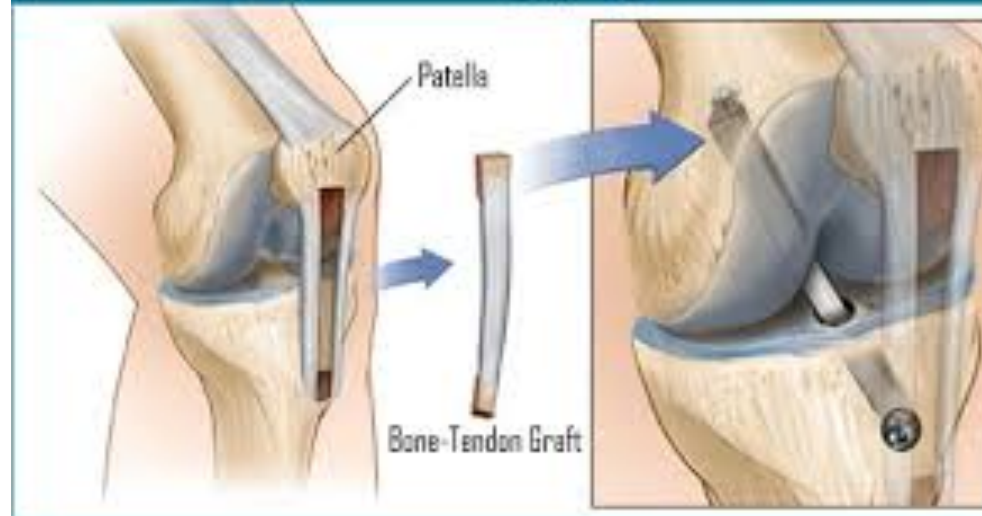
- discontinuity of fibers
- bone bruising



Treatment

- Nonoperative
 - physical therapy, lifestyle modifications, Analgesia
- Operative
 - ACL reconstruction

ACL Reconstruction Surgery - Ligamentization



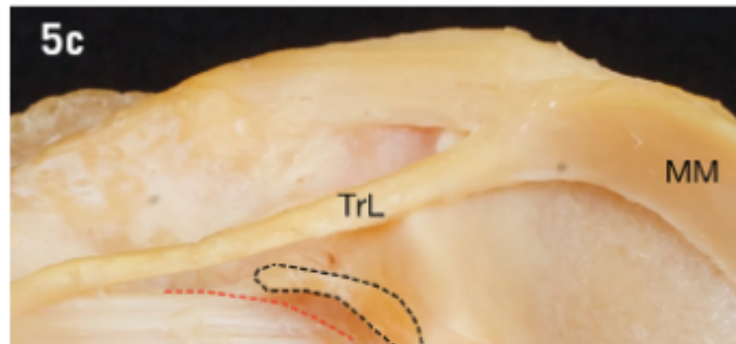
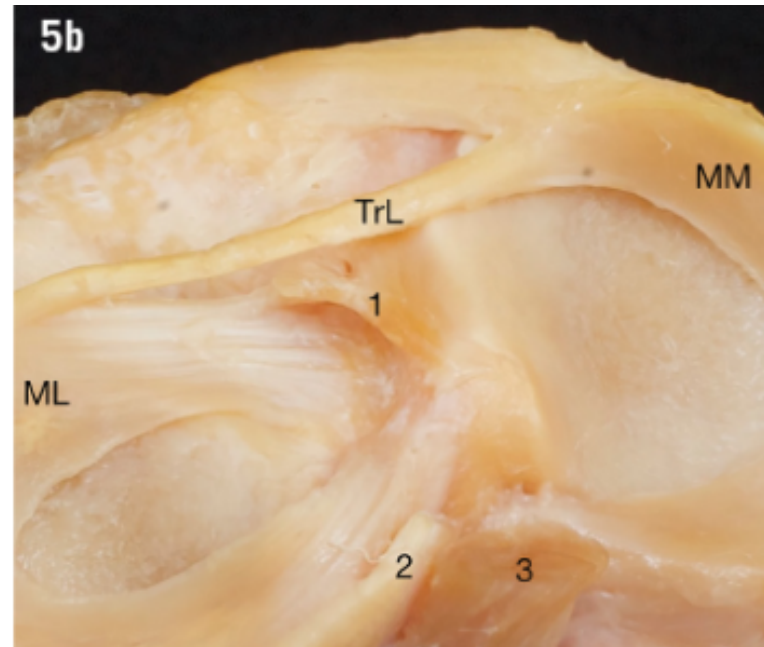
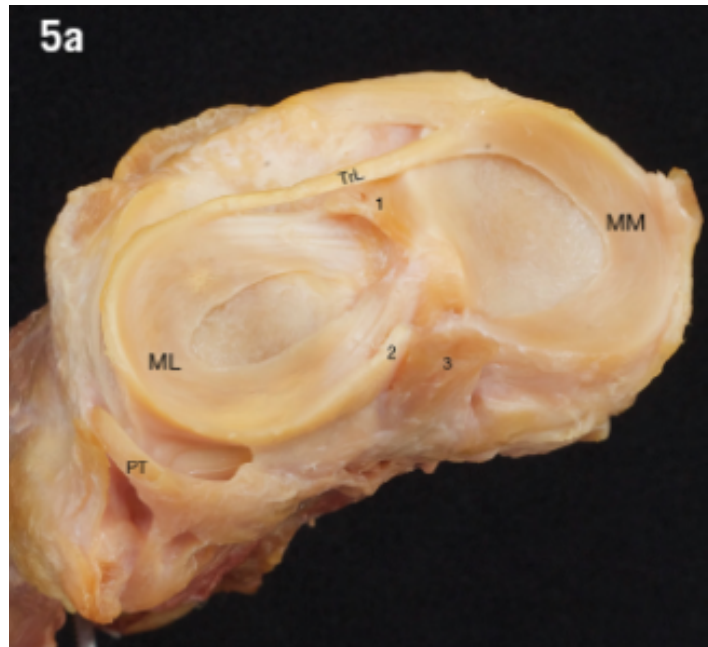
A. *Achilles tendon*



B. *Hamstring tendon*



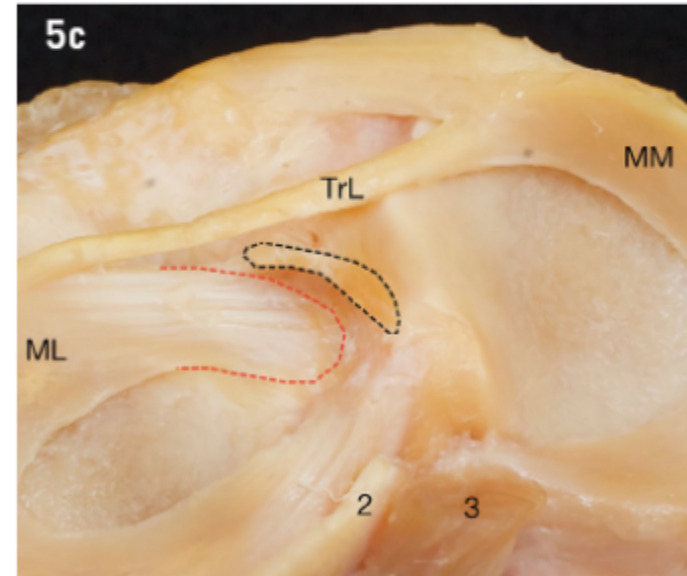
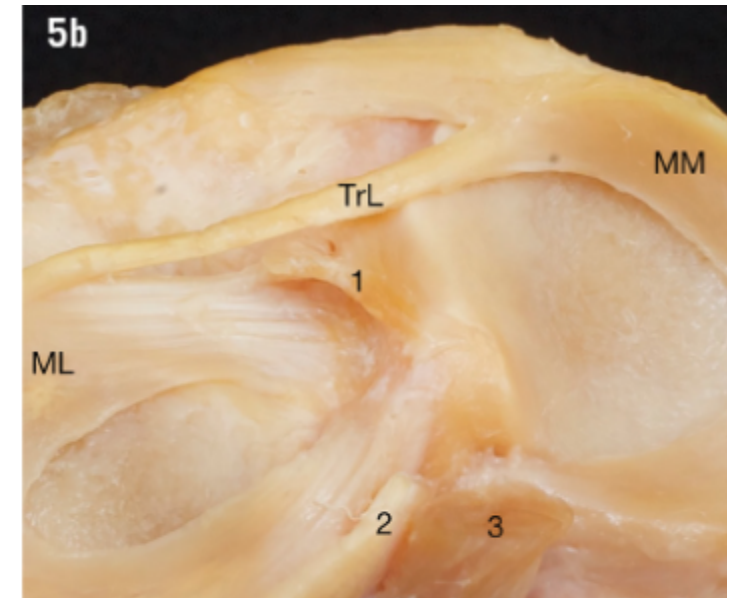
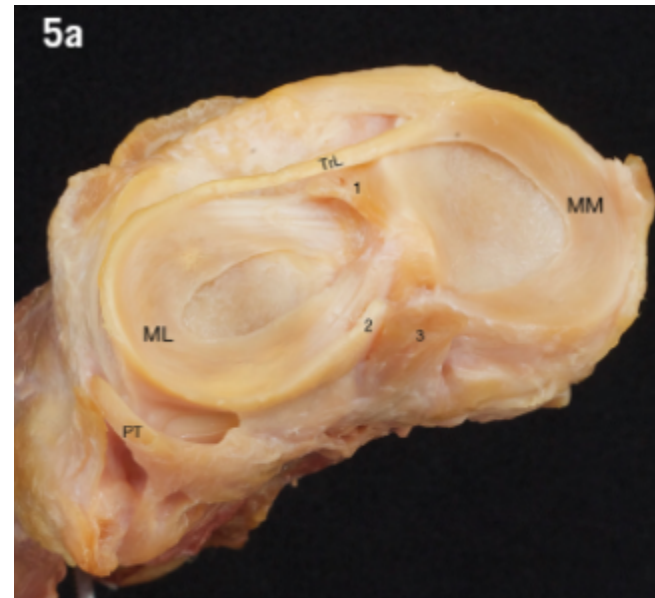
C. *Patellar tendon*



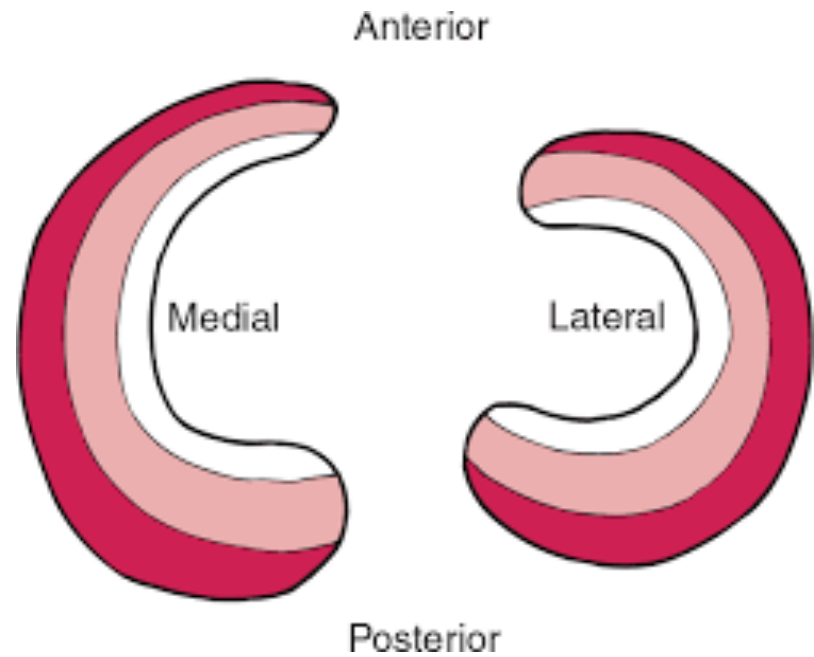
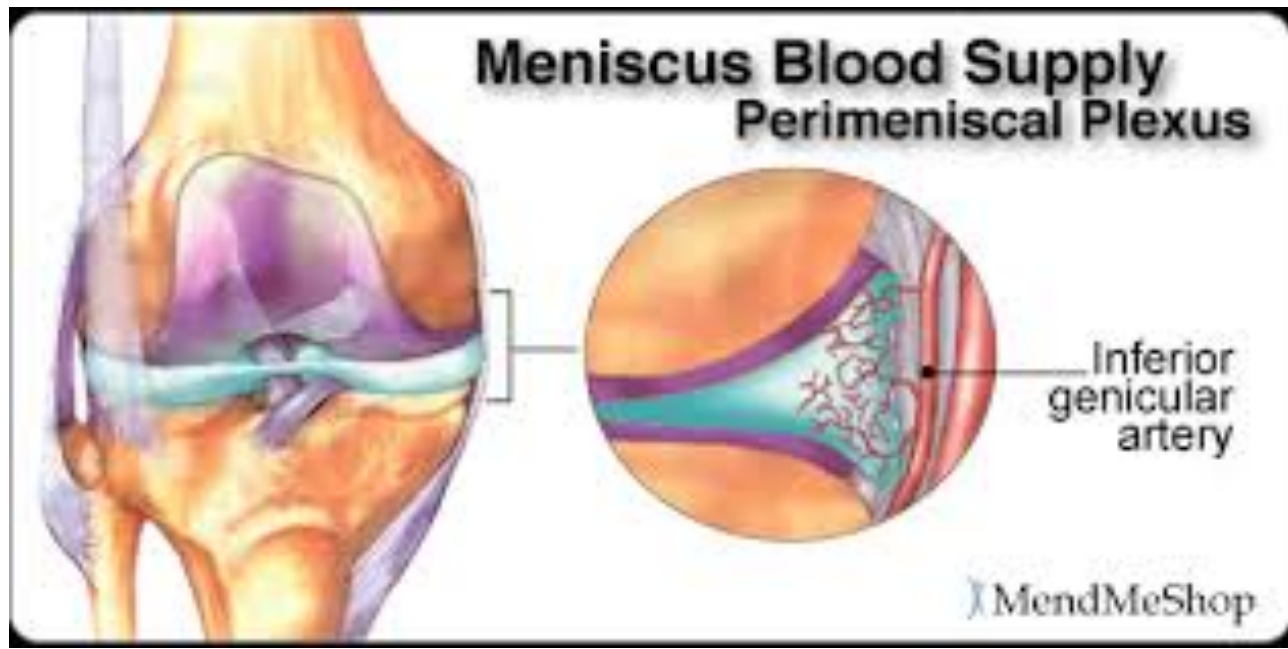
Meniscal
injuries

Anatomy

- MM>LM
- bimodal

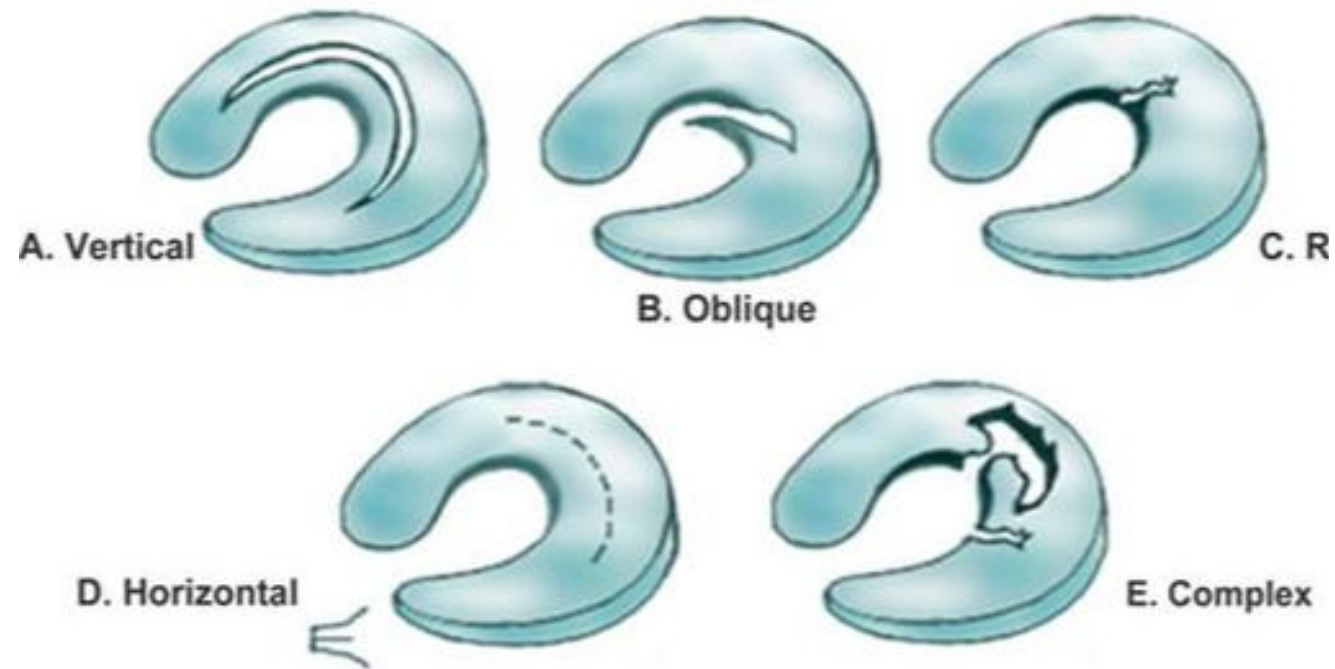


Blood supply



Classification

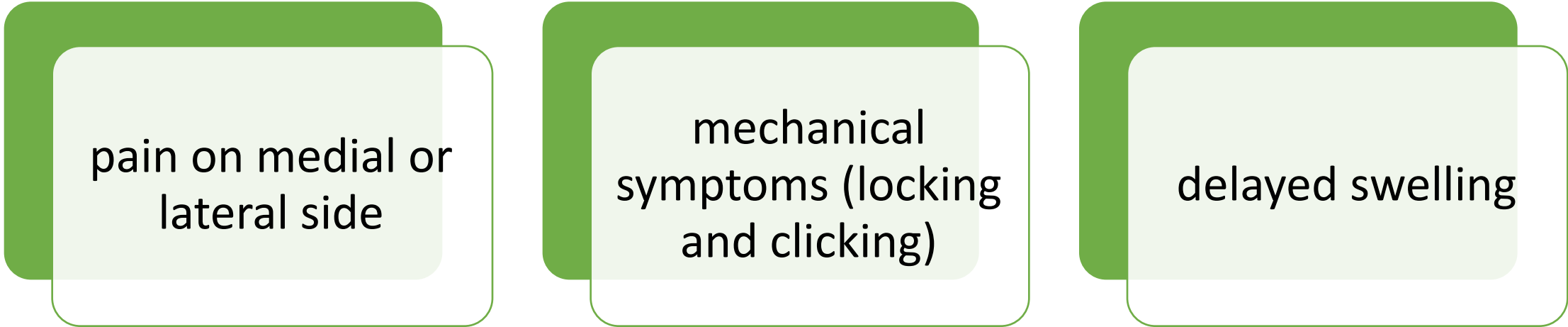
Meniscus Tear Patterns







Symptoms



pain on medial or
lateral side

mechanical
symptoms (locking
and clicking)

delayed swelling

Physical exam

joint line tenderness
(most sensitive
physical examination
finding)

Effusion

Limited ROM if there
is locking

McMurray's test

Meniscus | McMurray Test

FIFA | MEDICAL
NETWORK

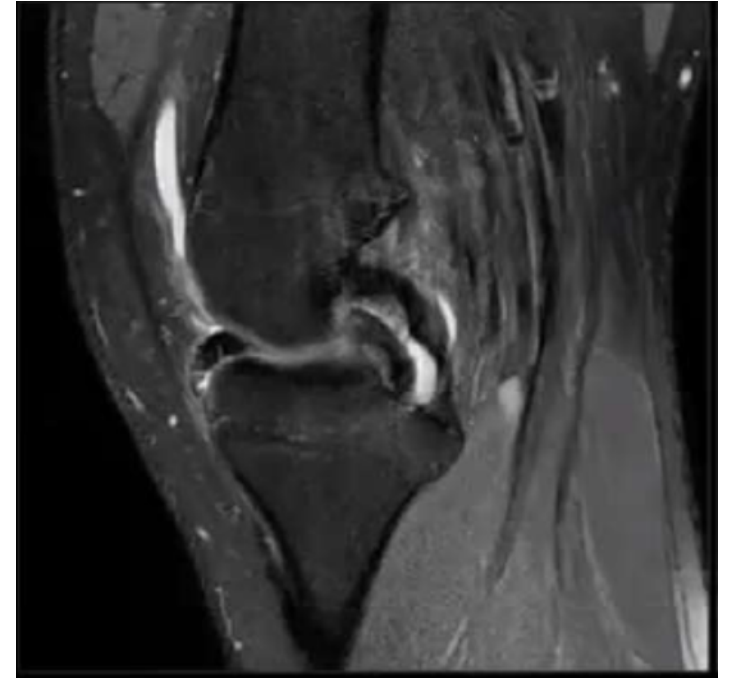
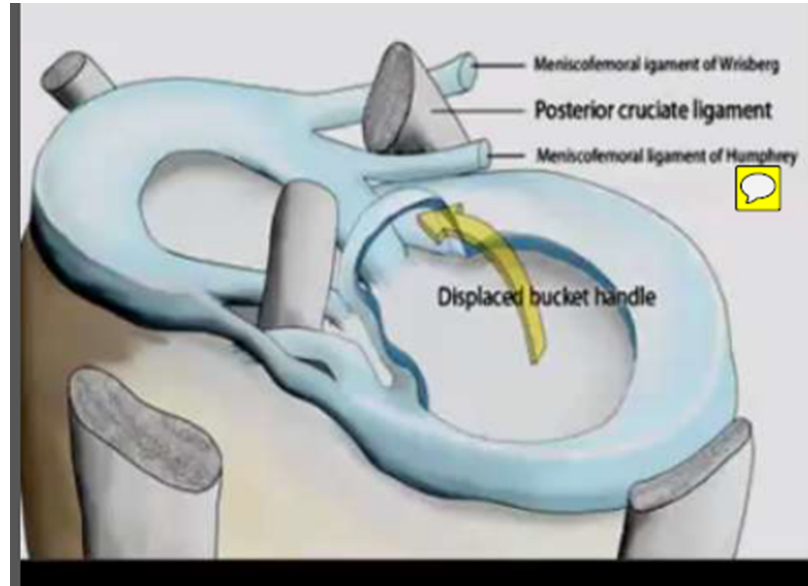
Imaging

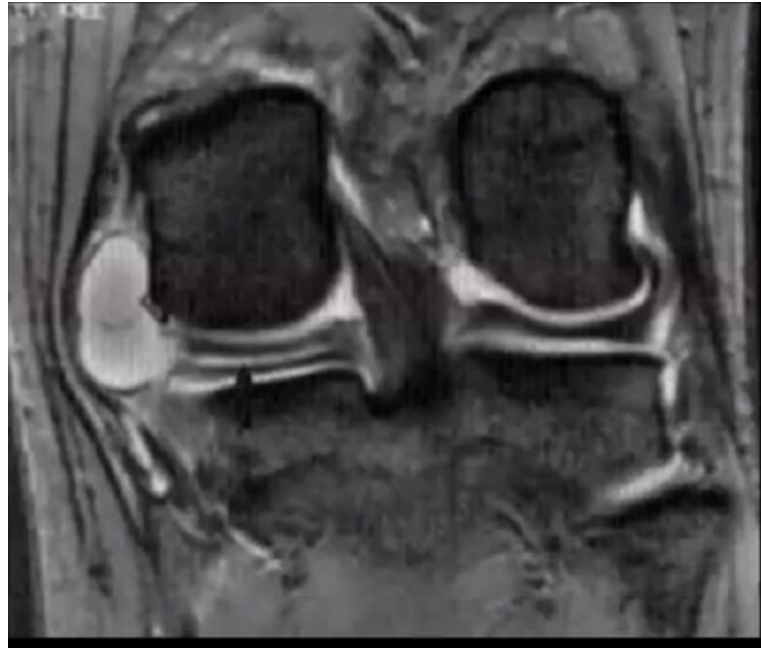
Radiographs

- Normal

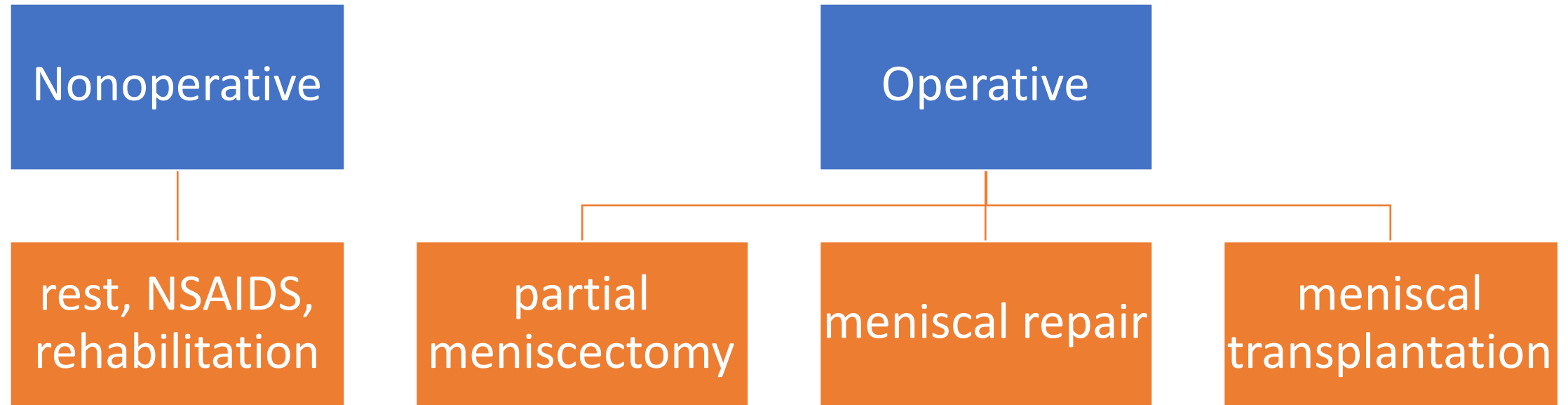
MRI

- most sensitive diagnostic test, but also has a high false positive rate





Treatment



Arthroscopic Partial Meniscectomy (damaged parts of the meniscus are removed)

