Hip Injuries in the Athlete

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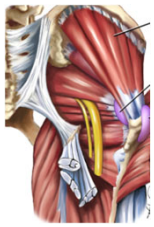

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DISCLOSURE STATEMENT

- I DO **NOT** have a financial interest/arrangement and/or an actual or potential conflict of interest in relation to this presentation

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OUTLINE

- Basic Hip Anatomy
- Athletic Hip Injuries
- Hip Exam
- Hip Impingement (FAI)
- Rehab

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HIP ANATOMY

- Largest Weight Bearing Joint
- Femur and Pelvis (Ilium, ischium, pubis)
- Femoral head deeply recessed acetabulum
- Hip Surrounded by almost 30 muscles

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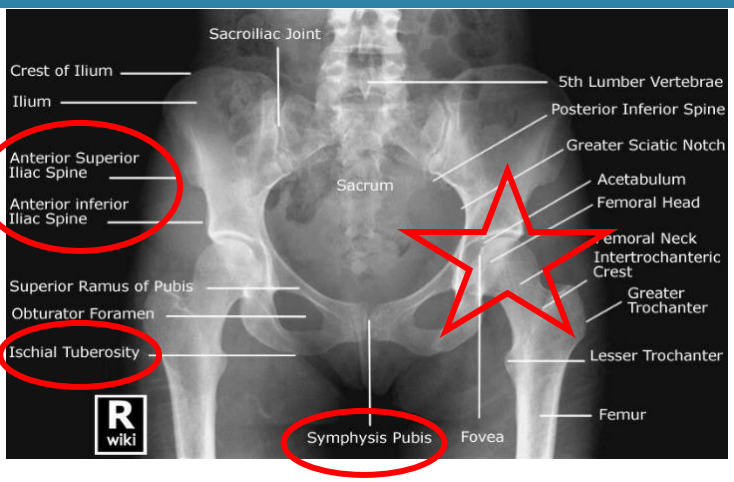
HIP ANATOMY



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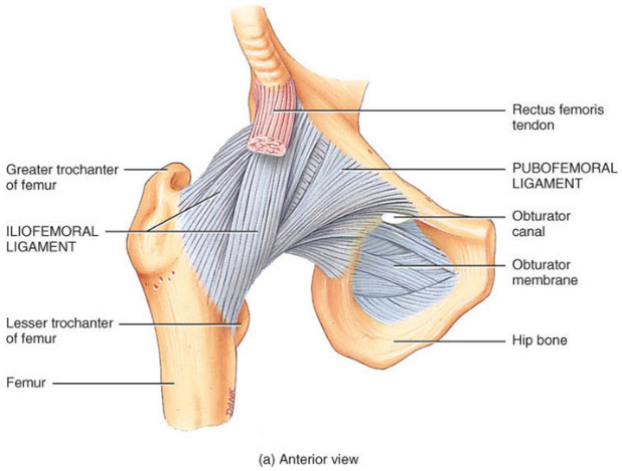
HIP ANATOMY - LIGAMENTS



(a) Anterior view

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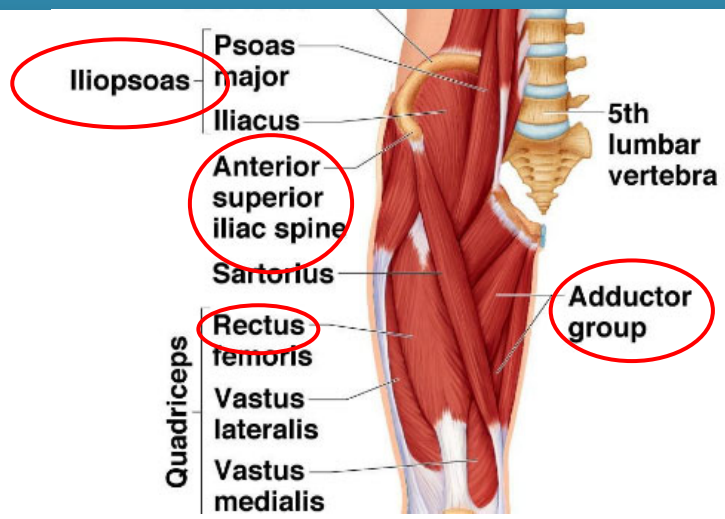
HIP ANATOMY - MUSCLE



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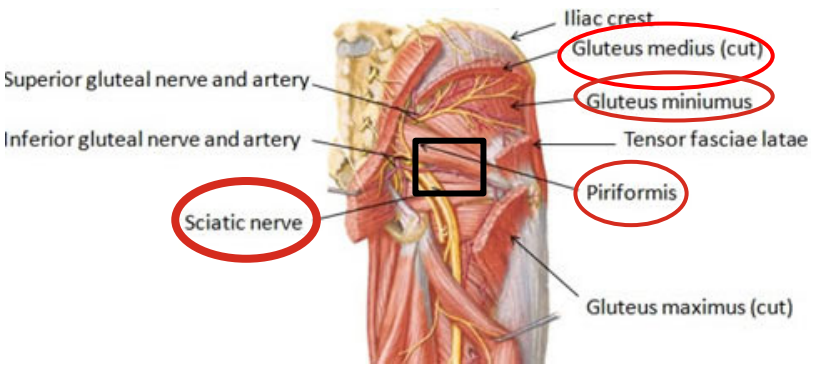
HIP ANATOMY - MUSCLE



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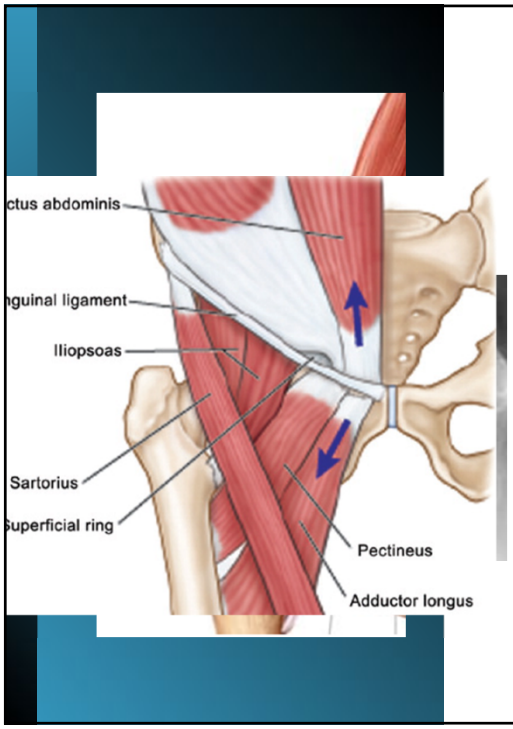

ANTERIOR

- Iliopsoas Tendinitis
  - + Stinchfield
- Internal snapping hip
  - Tight IP - Thomas test
  - Retroverted Acetabulum-FAI
- Osteitis Pubis
  - Pubic symphysis TTP
- Sports Hernia or Inguinal Hernia
  - Tenderness over lower abdominal fascia
  - Pain with resisted sit-up
  - Referral to general surgeon

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EXTRA-ARTICULAR SOURCES PAIN

LATERAL

- External Snapping Hip
  - Tight ITB snapping usually standing hip abduction and flex/ext
  - Reproducible by patient
- Trochanteric Bursitis
  - + TTP bursitis
- Gluteus Medius/Minimus Strain
  - Weakness with resisted abduction
    - Ext – gluteus maximus
    - Knee flex - gluteus medius
    - Hip flexion - gluteus minimus
    - MRI for tear

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EXTRARTICULAR SOURCE PAIN

POSTERIOR:

- Piriformis syndrome
  - TTP piriformis
  - Pain with resisted Abd/ER hip
  - Sciatic nerve sx with radiating pain
- Proximal Hamstring
  - TTP ischial tuberosity
  - Pain with flexed hip and ext knee
  - Pain with resisted knee flex
- Sacroiliac Joint Dysfunction
  - + FABER
  - +TTP
  - CT scan to assess arthritis: diagnostic injection

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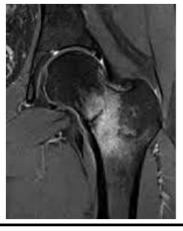
RARE SOURCES HIP PAIN

- Lumbar pathology
  - Neuro exam, SLR
- Knee sources pain
- Hyperlaxity
  - Hip microinstability

- THINGS NOT TO MISS
  - Hip infection
  - Hip stress fracture
    - Female, recent increase in repetitive activity
    - Groin pain with running



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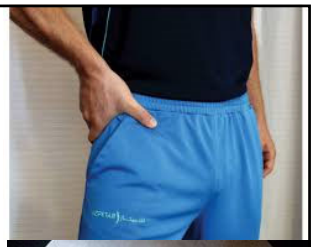
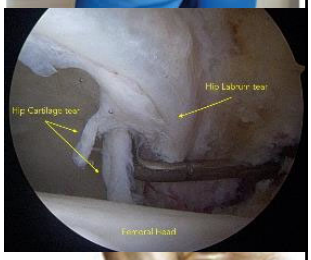
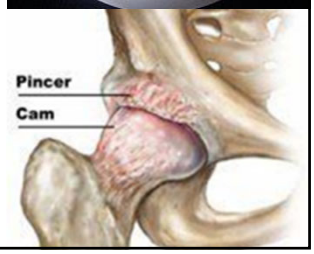
INTRA-ARTICULAR SOURCES PAIN

- Labral Tear/Chondral injury
- FAI-Hip impingement
  - CAM
  - Pincer
  - Combined
  - Subspine
- Osteoarthritis-older patient
- Loose body
- Ligament Teres Tear







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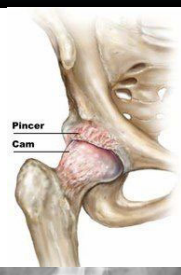
FAI - CAM IMPINGEMENT

- Non-spherical femoral head
- Early cartilage delamination followed by labral tear
- Loss of hip IR
- Impingement sign: FADDIR
- MRI to assess labral tear and cartilage damage



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IMPINGEMENT TEST

- Hip Flexed to 90 degrees Adducted and Internally Rotated
  - Reproduces groin pain
  - limited internal rotation

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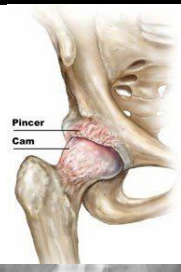
CAM IMPINGEMENT INCIDENCE

- 95% of asymptomatic hips in college football players - radiographic evidence of FAI[1]
- 69% incidence of labral tears in asymptomatic volunteers[2]
- CONCLUSION: high incidence imaging abnormalities in asymptomatic patients
  - Not everyone needs surgery
  - Symptomatic large CAM and young - recommend arthroscopy



1. Kapron et al. JBJS 2011.
2. Phillipon et al AJSM 2012.

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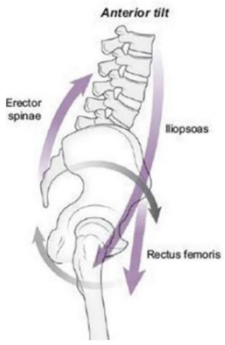
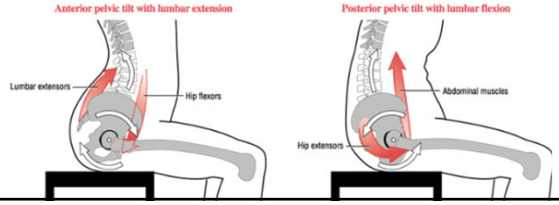
PHYSICAL THERAPY - LABRAL TEAR/FAI

- Strengthen muscle imbalance
- Increase flexibility
- Decrease associated inflammation

- Core weakness ⟹ increased pelvic tilt
  - Increased anterior hip contact

- Muscular strengthening, correct pelvic positioning, and relieving compensatory responses can resolve symptoms





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INDICATIONS FOR SURGERY FAI

- Prolonged and significant hip pain > 3 months
- No Improvement after trial of therapy
  - therapy for maintenance of hip motion
  - addressing secondary muscular dysfunction
  - hip add/abd and core strengthening
- **Steroid injection**
  - Diagnostic and therapeutic
- >2mm joint space---**No osteoarthritis** (Tonnis grade 1 or less)

  Philipon AJSM 2014 - 5 year minimum follow-up showed 86% of those ≤ 2mm joint space had converted to THA
- **No dysplasia**

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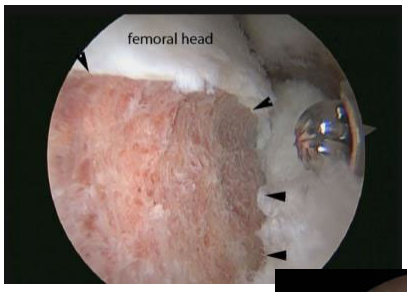
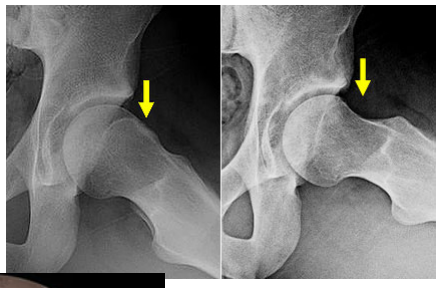
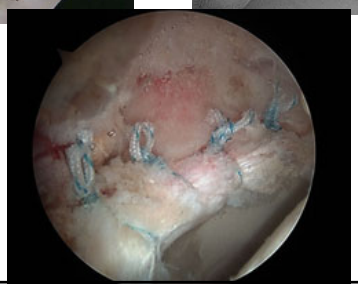
HIP ARTHROSCOPY IMPINGEMENT







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POSTOP REHABILITATION PROTOCOL FAI/LABRAL REPAIR

- Goal: Functional-based [Not Time]
- Phase 1
  - The protective phase
- Phase 2
  - The independence phase
- Phase 3
  - The recreational phase
- Phase 4
  - Return to play

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POSTOP REHABILITATION PROTOCOL

- NWB 4 weeks
- No brace
- Wk 2-6
  - Inflammation control
  - ROM
- Wk 6-12
  - Bike
  - Light strength work
- Wk 12+
  - Weights
  - Jogging
- 5-6 months
  - Sport specific drills
  - RTP protocol

RETURN TO PLAY

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Key Points

- The hip has complex anatomy
- Multiple sources of pain
  - Extraarticular
  - Intraarticular
  - History and exam essential to diagnosis
- High rate of labral pathology on MRI in asymptomatic patients
- Therapy and injections first line treatment for FAI
- Rehab and recovery period for FAI surgery analogous to shoulder labral surgery

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