




Hip Pain: When your Hip won't let you Hop!

*UCSF Osher Mini-Med School
Lecture Series*


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Disclosures

- No relevant disclosures to this talk



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About Me

- Bay Area Native



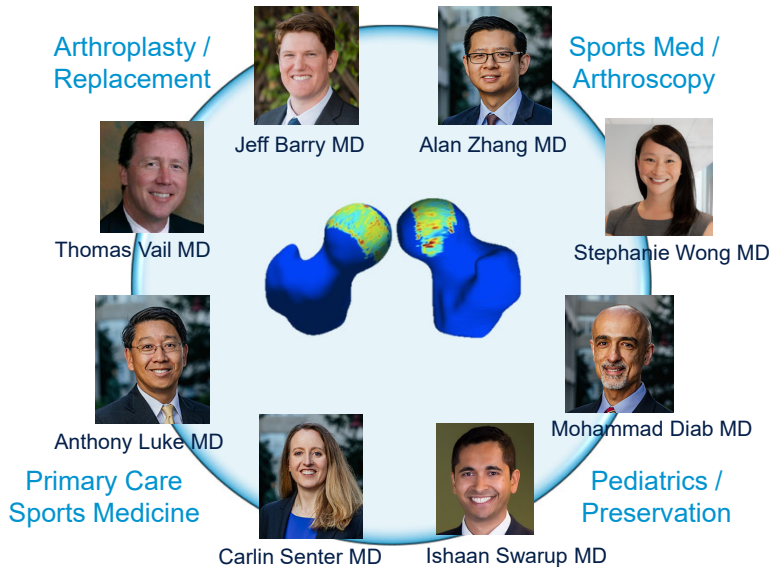
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 - U Can Stay Forever

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Clinical Locations for UCSF Orthopaedics

San Francisco

- UCSF Orthopaedic Institute – 1500 Owens – Mission Bay
- UCSF Mt Zion and Parnassus

North Bay

- UCSF-MarinHealth San Rafael Clinic
- MarinHealth Medical Center (Marin General Hospital)

East Bay

- Berkeley Outpatient Center

Peninsula

- San Mateo and Redwood Shores



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Goals

- Explore the anatomy of the hip joint
- Breakdown the most common contributors to hip pain
 - STAIRS+
 - How to differentiate between them
- Answer your questions!

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What's Hip?

A COMPLETE GUIDE FOR HIP PAIN – CAUSES, SYMPTOMS, & TREATMENT

Chiropractic Treatment for Hip Pain

HEALTH WEB MAGAZINE

Integrated Pain Relief

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- Depends!
- To orthopaedic surgeon
 - The hip is the top portion of the femur
 - The hip joint is the femoral head and acetabular socket

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Hip Anatomy - Bones

Sacroiliac joint

Sacrum

Coccyx

Femur

Pubic symphysis

Iliac crest

Ilium

Ischium

Pubis

Pelvis

Labrum

Acetabulum (Socket)

Femur

Femoral head (Ball)

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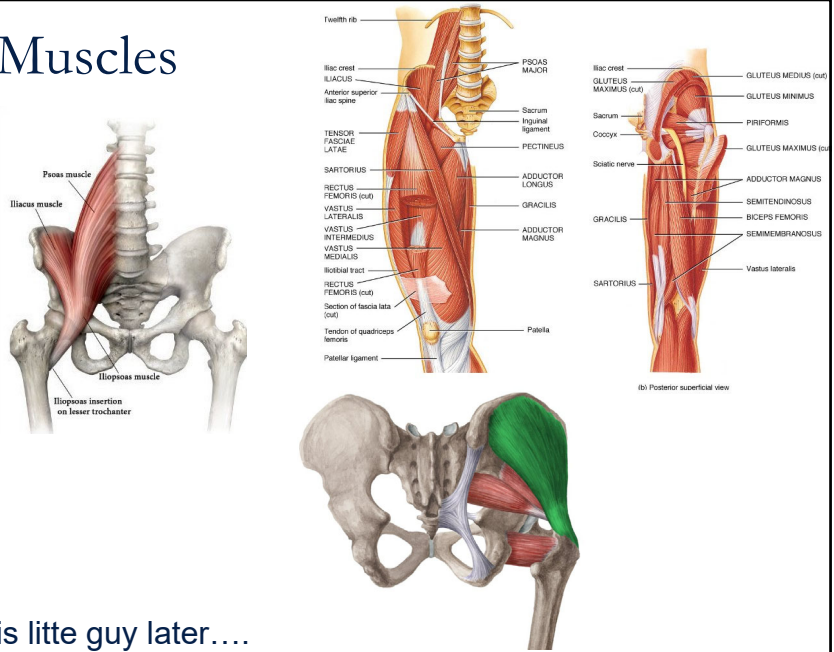
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Hip Anatomy - Muscles

- Major Groups
 - Hip Flexors
 - Hip Abductors
 - Hip Adductors
 - Hamstrings

- Two to Know
 - Iliopsoas (or psoas)
 - Gluteus medius

- Piriformis – more on this little guy later....

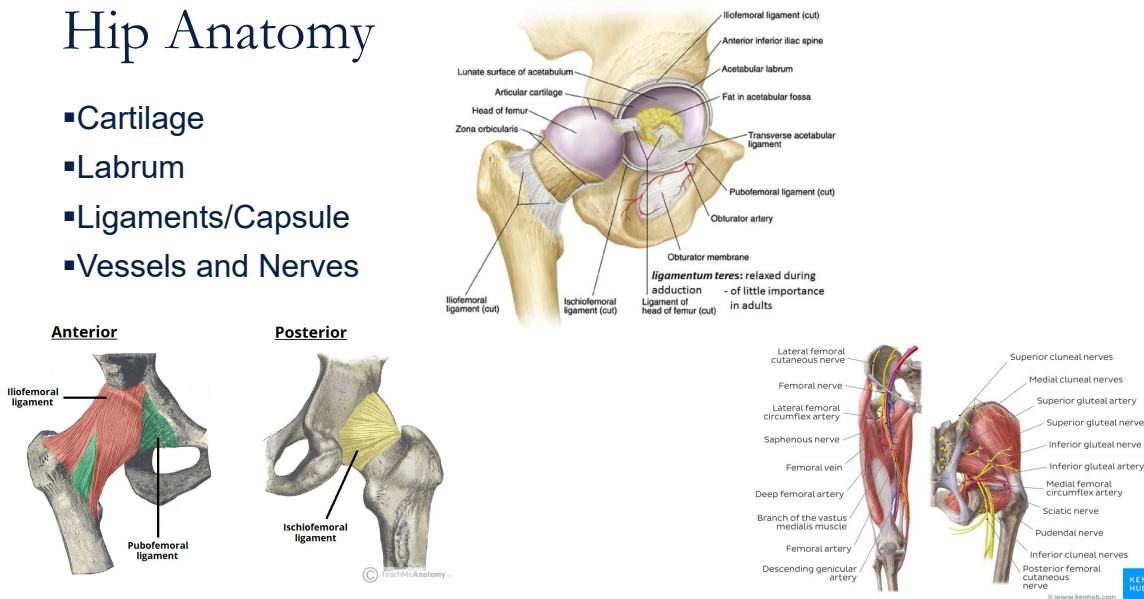


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Hip Anatomy

- Cartilage
- Labrum
- Ligaments/Capsule
- Vessels and Nerves



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Most Common Hip Pathologies

STAIRS

- Strains
- Trochanter
- Arthritis
- Impingement
- Referred Pain
- SI Joint Pain



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Strain (Muscle Strain)

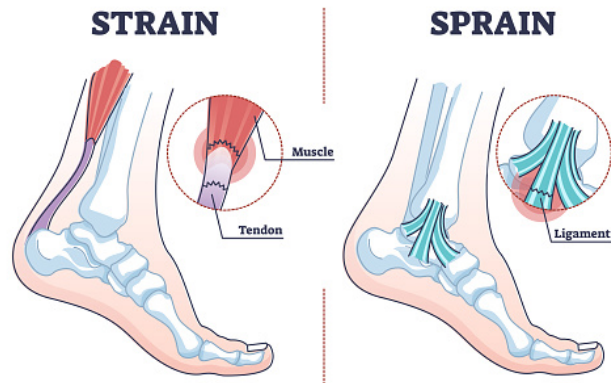
- Most common injury in hip/pelvis
- Occurs at muscle/tendon junction
- Partial tearing of muscle
- Acute injury
- Muscles crossing 2 joints more prone
 - Hamstrings, rectus femoris (quad), sartorius, psoas
- Hip flexors, quad (anterior)
- Adductor (medial)
- Hamstring (posterior)



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Strain or Sprain??



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<https://media.istockphoto.com/vectors/sprain-vs-strain-anatomical-comparison-as-medical-foot-injury-outline-vector-id1334784457?k=20&cm=1334784457&cs=170667a&cw=0&h=dzgfIAARDbplHYdhwF5wTwV3yWgTMAUTuwalCPpGXM=>

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Strain (Muscle Strain)

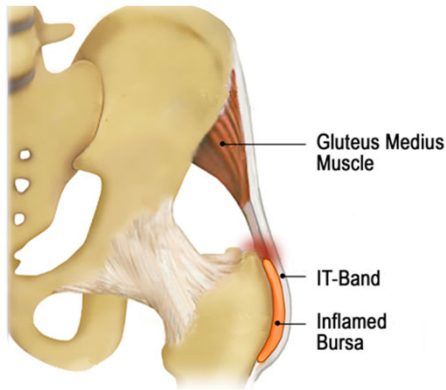
- RICE
 - Rest, Ice, Compression, Elevation
- NSAIDs (advil, aleve, motrin, voltaren etc)
- Gentle range of motion and stretching early
- Progress to strengthening once pain resolved
- Return to play/sports: 1-4 weeks



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Trochanteric Pain (lateral hip pain)



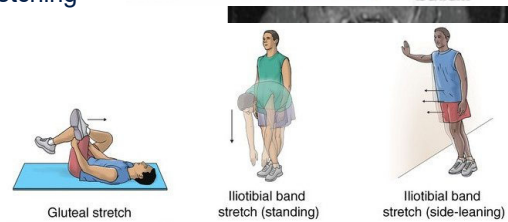
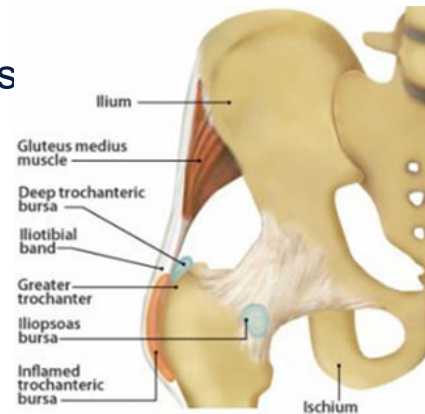
- Trochanteric bursitis
- Gluteus tendon tears
- IT band syndrome
- External snapping hip

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Trochanteric Pain: Trochanteric Bursitis

- Inflamed bursa under IT band
- Common women 40-70 years old
- pain with walking, sleeping on side, getting up from sitting
- **Tender to touch** over greater trochanter, no weakness
- Treatment
 - Physical therapy and stretching and stretching and stretching and stretching
 - NSAIDS
 - Corticosteroid injection
 - Operative (RARE): endoscopic bursectomy

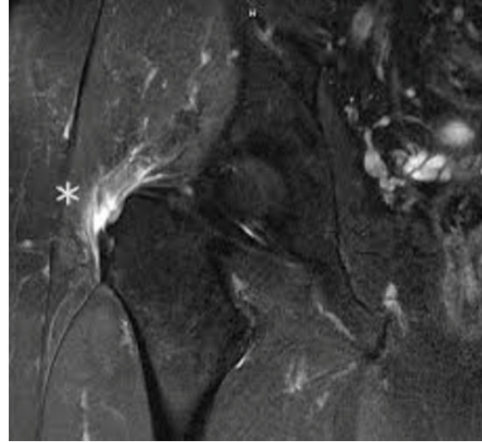


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Trochanteric Pain: Gluteus Tendon Tears

- Can be acute or chronic
- Females ages 50-70
- **Pain + WEAKNESS**

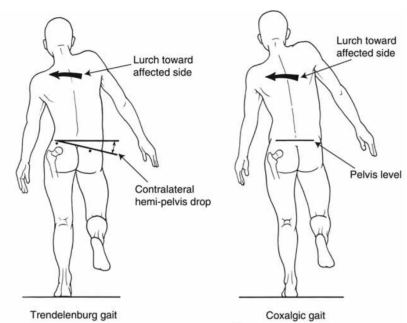


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Trochanteric Pain: Gluteus Tendon Tears

- Characteristic gait
 - Trendelenberg
- Treatment
 - therapy, NSAIDs, injections
 - Operative (RARE): endoscopic vs open repair

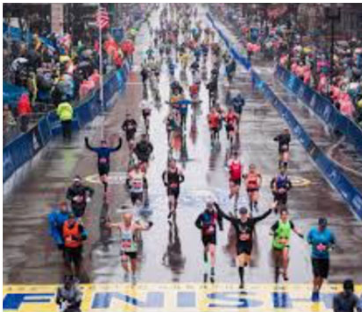


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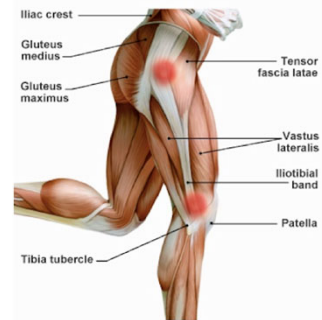
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Trochanteric Pain: IT Band Syndrome and Snapping Hip



Iliotibial Band Syndrome (ITBS)



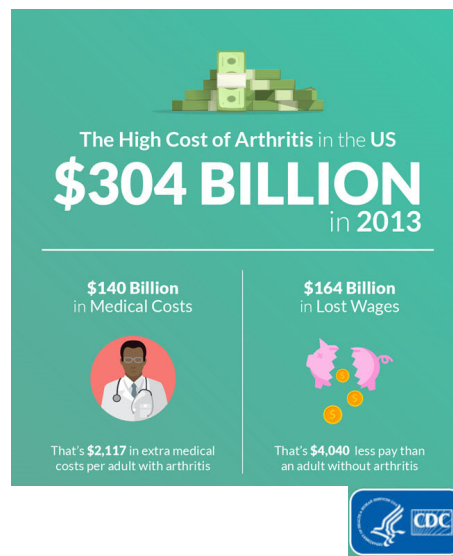
- Chronic, lateral thigh pain
- Wide age range (15-50)
- Common in **runners/bikers**
- Causes tightness/snapping → external snapping hip
- Physical therapy (foam rolling, myofascial release), NSAIDs, ice, rest
- Operative (RARE): endoscopic IT band release

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Arthritis

- Arthritis = most common cause of disability in the US
- 22.7% of adults have doctor-diagnosed arthritis
- 43.2% of patients with arthritis report activity limitations due to disease

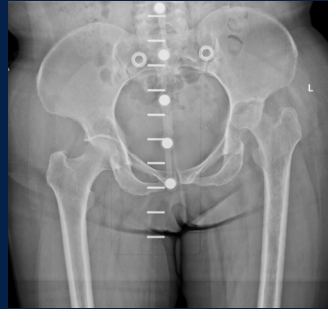
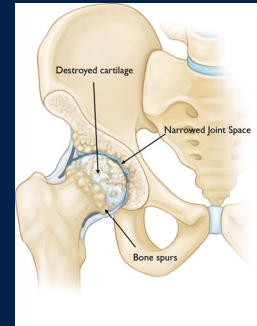


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What is Arthritis – Disease of Cartilage

- Cartilage Degeneration
 - Groin Pain Classically
 - can be buttock, lateral, and even referred down to knee
 - C-sign
 - Limp
 - Loss of range of motion



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Causes of Arthritis

- Osteoarthritis - “wear and tear”
- Inflammatory arthritis
- Trauma, old fractures
- Infection
- Osteonecrosis - avascular necrosis
- Childhood/ developmental disease



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Arthritis → Non-Operative Treatment

Acetaminophen

NSAID's

Weight Loss

Exercise

Gait Aids

Physical Therapy

Bracing

Corticosteroid Injections

Viscosupplementation

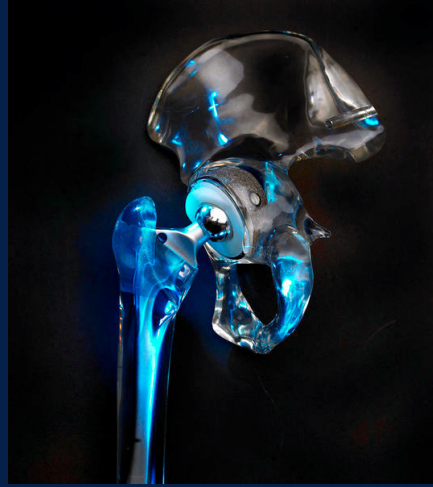


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What is Arthroplasty

- “Arthro”- joint
- “plasty”- reconstruction
- Replacement of the diseased joint surface w/ a prosthesis (metal, plastic, ceramic)



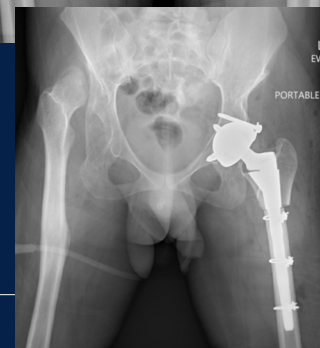
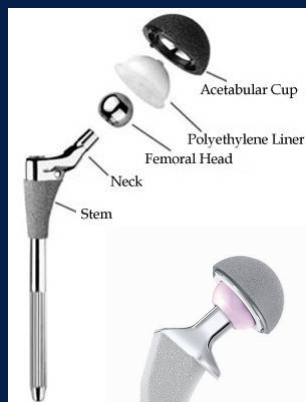
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Total Hip Arthroplasty (THA)

- **Components**
 - Acetabulum (aka socket, shell, or cup) - Titanium
 - Acetabular liner- PE vs CoCr vs ceramic
 - Femoral head - CoCr vs ceramic
 - Femur (aka stem) - Titanium
- **Fixation:**
 - cementless >> cemented, hybrid
 - porous metals

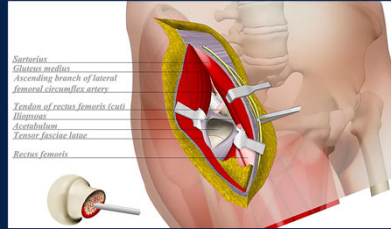


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Arthritis: Total Hip Arthroplasty

- Direct anterior approach
- Rapid Recovery Protocols
- Improved pain management – multimodal therapy



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High-Impact Intervention

The operation of the century: total hip replacement

Ian D Learmonth, Claire Young, Cecil Rorabeck

Lancet 2007; 370: 1508-19

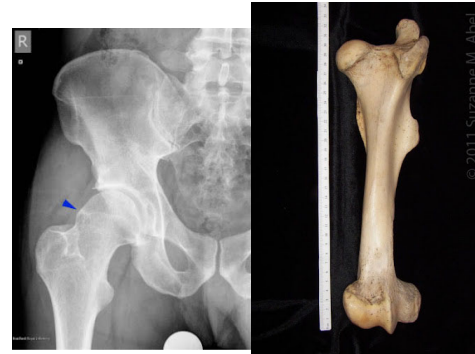
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Impingement: Femoroacetabular Impingement (FAI)

- Bony anatomy forms differently during development
 - Likely normal variant but predisposes to certain injuries
- Symptomatic Ages 15-45
- Higher prevalence in male inline sport athletes
- Can cause intra-articular injury to labrum and cartilage
 - May contribute to hip arthritis
 - ~50% of hip replacements for patients under 50 have FAI

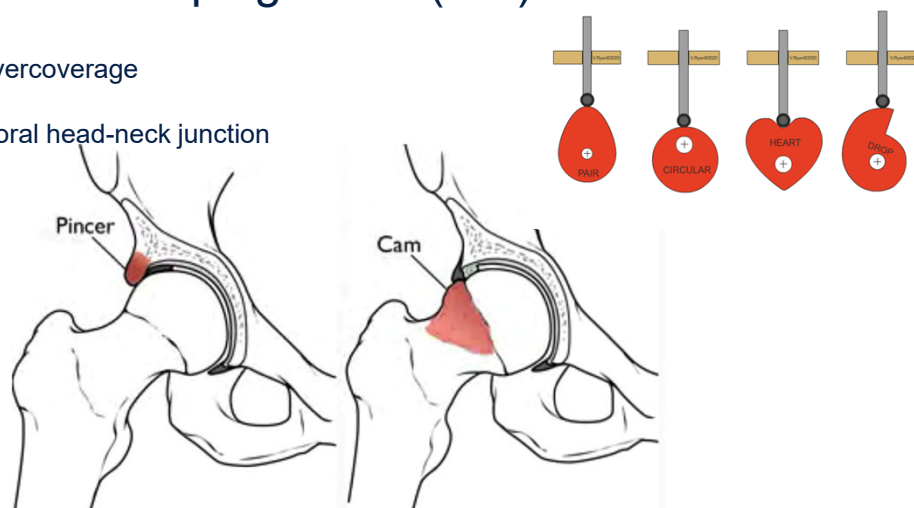


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Impingement: Femoroacetabular Impingement (FAI)

- **Pincer:** acetabular overcoverage
- **Cam:** aspherical femoral head-neck junction
- **Mixed**



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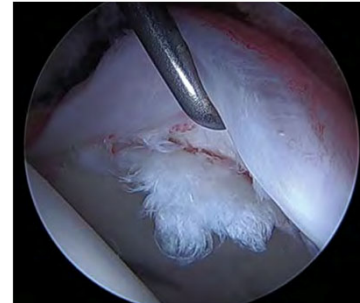
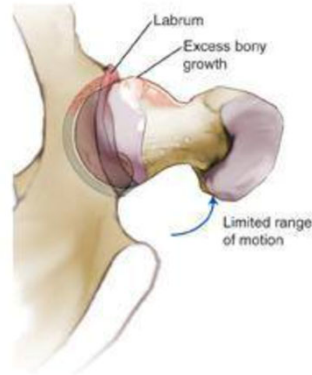
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Impingement: Hip Labrum

- Protective ring of fibrocartilage
- Contributes to hip stability
- Labral tears are common!
 - >90% of patients with FAI
 - Study of asymptomatic patients: 70% with labral tear
 - Isolated labral tear age >35 → normal finding of aging

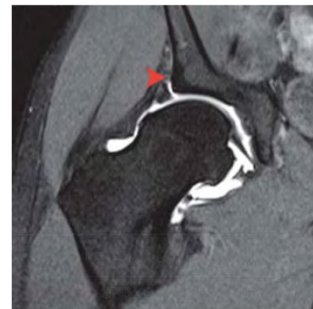
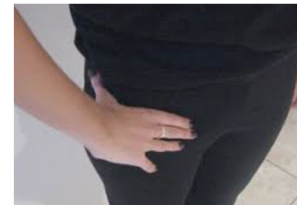


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Impingement: Femoroacetabular Impingement (FAI)

- groin pain, C-sign
- worse with prolonged sitting and activity
- Can be acute or chronic
- Diagnosis with xray and MRI



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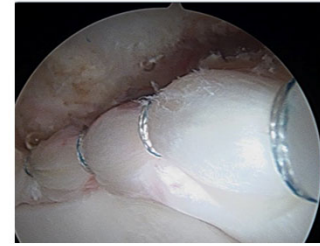
Impingement: Femoroacetabular Impingement (FAI)

■ Nonoperative

- PT for core/gluteal strengthening
- NSAIDs
- Corticosteroid injection

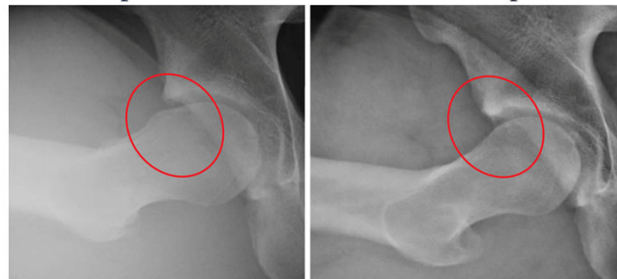
■ Operative

- Hip arthroscopy, labral repair, osteochondroplasty



Pre-op

Post-op



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Predictors of Outcomes after Hip Arthroscopy for FAI

Positive	Negative
Younger age	Age > 45
Male	Female
BMI < 25	BMI > 25
Tonnis grade 0	Tonnis grade > 1
Pain relief w/ diagnostic intraarticular hip injection	Preop symptoms > 8 mo
	Tonnis grade \geq 2 Decreased joint space (< 2mm)
	Labral debridement

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Sports Medicine

Sogbein, et al. OJSM 2019.

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Prevalence in Athletes

- Football- **90%** at NFL Combine 2009-2010 had at least 1 sign of FAI on x-rays
- Hockey- **75%** of elite youth hockey with Cam lesion on MRI
- Soccer- **72%** of male and **50%** of female elite soccer players had radiographic FAI
- High level male athletes 1.9-8x more likely to develop cam than controls



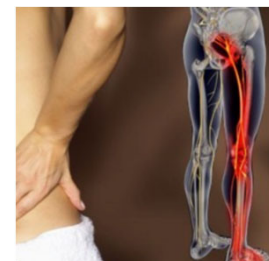
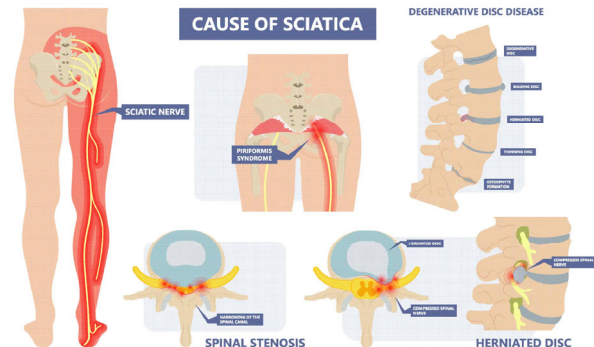
Is it abnormal? OR compensatory?

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Referred Pain

- Hip pain can be referred from spine
 - Disc herniation, lumbar radiculopathy
- Age > 40
- low back pain, buttock pain radiating down leg, numbness/tingling
- Physical Therapy, epidural or transforaminal steroid injections
- Can be **very difficult** to differentiate hip joint pathology from spine at times

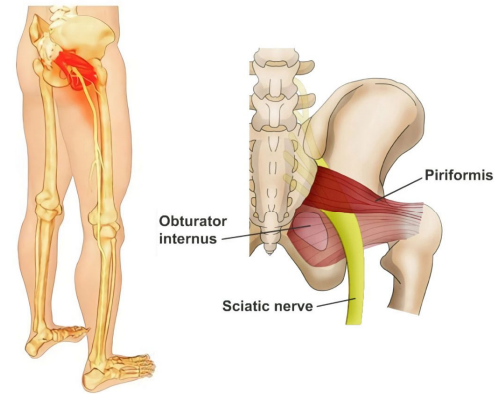


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Referred Pain Piriformis Syndrome Side Bar

- True piriformis syndrome is rare
 - Compression of sciatic nerve by piriformis muscle
 - Symptoms similar to sciatica
- Often colloquially therapists describe pain around the area where piriformis is located
 - Posterior buttock pain radiating toward back of greater tochanter
- PT, NSAIDs, injections

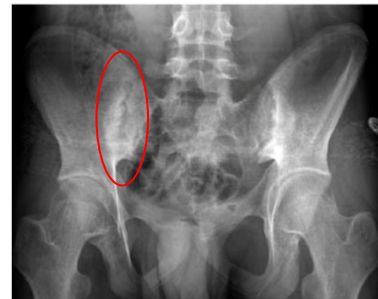


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SI (Sacroiliac) “joint” pain

- Acute vs chronic
 - Trauma, inflammatory arthritis (Ankylosing Spondylitis), arthritis
- Pain posteriorly (low back/upper buttock), off of midline
- Can be sharp pain with sitting, lying and walking
- Nonop:
 - NSAIDs
 - Physical therapy
 - SI joint injection (ultrasound or xray guided)
- Operative (RARE): SI joint fusion



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Most Common Hip Pathologies

STAIRS

- Strains
- Trochanter
- Arthritis
- Impingement
- Referred Pain
- SI Joint Pain



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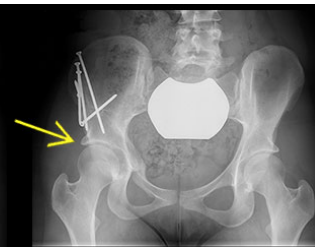
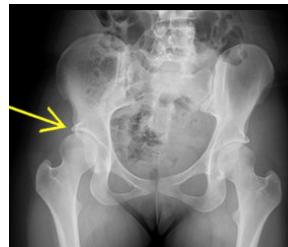
+ other stuff: Dysplasia and Developmental Issues (Pediatrics)



Mohammad Diab MD



Ishaan Swarup MD



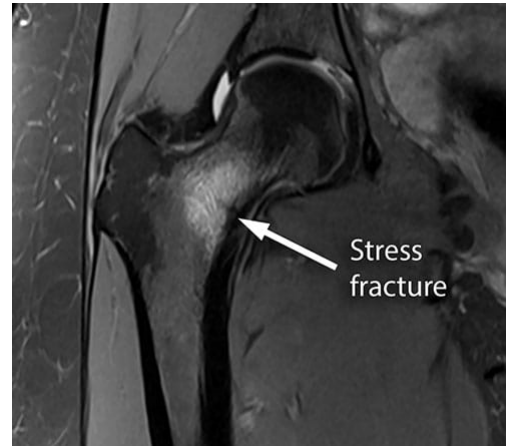
**Mild dysplasia similar to FAI – seen frequently in patients with arthritis under 50

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+ other stuff – Hip Stress Fracture

- Acute on chronic injury (overtraining)
- 18-60 year olds
- Women > Men
- Pain in groin worse with weight bearing activity
- Rest and protected weight bearing (crutches) 4-6 weeks

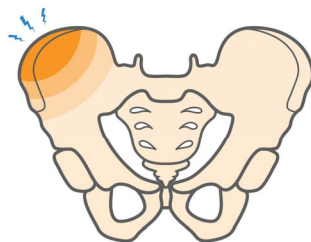


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+ other stuff – “Hip Pointer Injury”

- aka Iliac crest contusion
- Direct trauma
- Rest and ice



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Differentiating Hip Pathology

1. Chronicity

- Acute vs chronic

2. Mechanism

3. Location

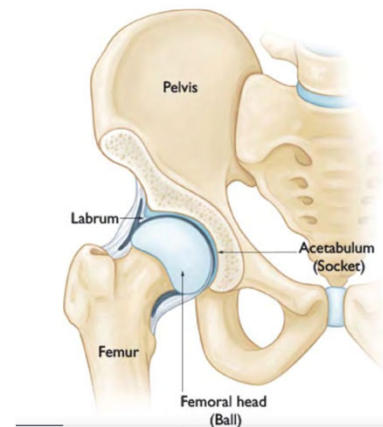


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Location, location, location

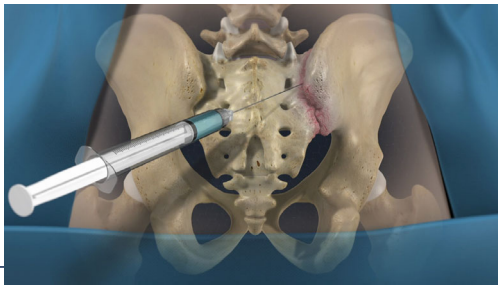
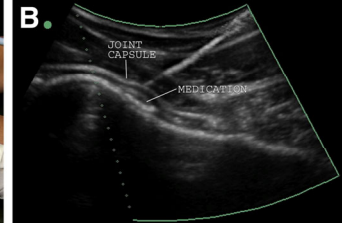
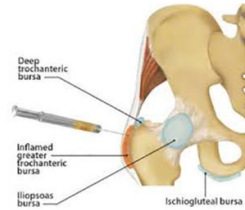
- Anterior/groin
 - Intra-articular: Arthritis vs FAI
 - Flexor/adductor strain
- Lateral
 - Trochanteric pathology
 - Snapping hip (IT band)
- Buttock/posterior
 - SI joint
 - Hamstring injury
 - Referred pain (low back/sciatic nerve)



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Diagnostic Injections



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Common Treatment Pathways

- Regardless of diagnosis most treatments are similar
 - Activity modification/rest
 - Ice
 - NSAIDs
 - Physical therapy
 - +/- injections
- Surgery NOT needed for most diagnoses



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Goals

- Explore the anatomy of the hip joint
- Breakdown the most common contributors to hip pain
 - STAIRS+
 - How to differentiate between them
- **Answer your questions!**

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