

Navigating Hip Pain: A Guide to Hip Arthritis and its Confounders

September 19, 2026



Evidence-Based Management and Guidelines for Primary Care.

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Disclosures

Consultant: Mango Medical, inc. (CT imaging company)

Stocks: ROMTech LLC

Royalties: Innomed, Inc (surgical instrument design)



**The STAR Approach
Foundation**

General Outline - Hip Intrinsic Pathology

There's going to be a lot of
Intrinsic “causes”

1. *Primary hip osteoarthritis*
2. *Rheumatoid arthritis*
3. *Posttraumatic arthritis*
4. *Dysplasia*
5. *Etc...*
6. *Etc..*

They generally follow the same steps

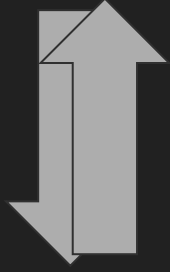
1. Physical Therapy

- a. Almost always “yes”
- b. It'll take weeks to get into PT no matter what
- c. We hope they've given it a try
- d. No need to wait to start referral

2. NSAIDS, if not contraindicated

3. Referral to Orthopaedics

Diagnosis



Treatment



Empiric Treatment: NSAIDS and PT

Endorsement for NSAIDs:



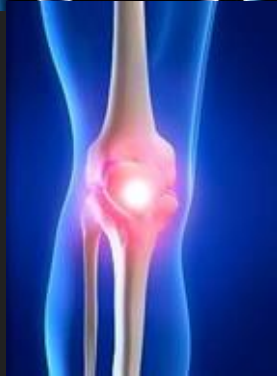
PHARMACOLOGICAL MANAGEMENT: NSAIDs

When not contraindicated, oral nonsteroidal anti-inflammatories (NSAIDs) should be used to reduce pain and improve function in the treatment of symptomatic hip osteoarthritis.

Quality of Evidence: High

Strength of Recommendation: Strong ★★★★★

Evidence from two or more "High" quality studies with consistent findings for recommending for or against the intervention. Also requires no reasons to downgrade from the EtD framework.



OrthoInfo

AAOS
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Oral NSAIDs

Oral NSAIDs are recommended to improve pain and function in the treatment of knee osteoarthritis when not contraindicated.

Strength of Recommendation: Strong ★★★★★

Evidence from two or more "High" quality studies with consistent findings for recommending for or against the intervention. Also requires no reasons to downgrade from the EtD framework.



THE ORTHOPAEDIC FORUM

What's Important: A Rallying Call for Nonsteroidal Anti-Inflammatory Drugs in Musculoskeletal Pain

Improving Value of Care While Combating the Opioid Epidemic

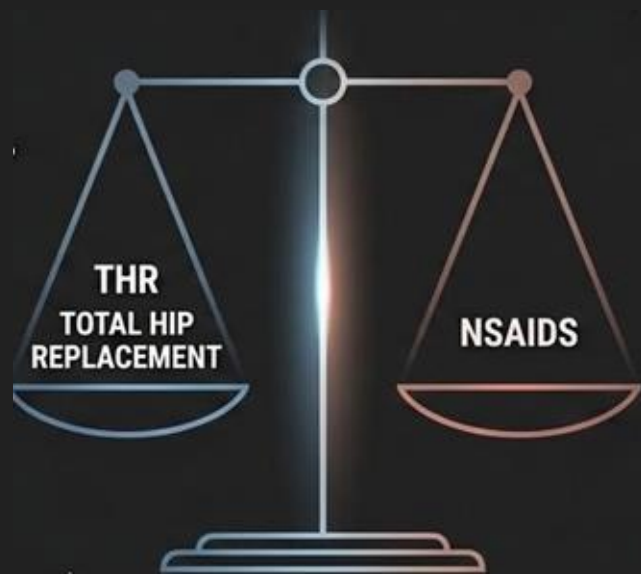
Chun Wai Hung, MD, Nathaniel D. Riggan, BS, Thomas R. Hunt III, MD, DSc, and Mohamad J. Halawi, MD

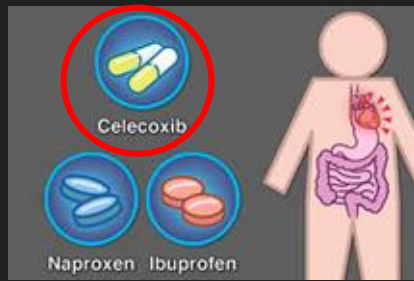
Investigation performed at Baylor College of Medicine, Houston, Texas

What I hear patients often say...









The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Cardiovascular Safety of Celecoxib, Naproxen, or Ibuprofen for Arthritis

Authors: Steven E. Nissen, M.D., Neville D. Yeomans, M.D., Daniel H. Solomon, M.D., M.P.H., Thomas F. Lüscher, M.D., Peter Libby, M.D., M. Elaine Husni, M.D., David Y. Graham, M.D., [+11](#), for the PRECISION Trial

Investigators* [Author Info & Affiliations](#)

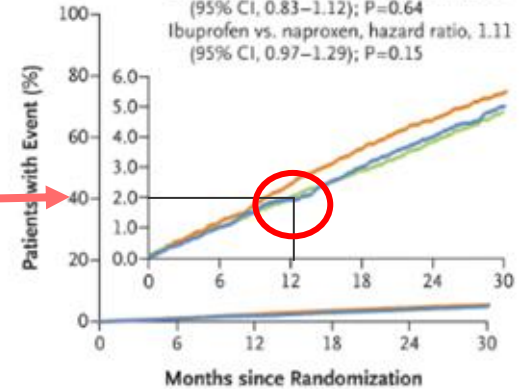
Published December 29, 2016 | N Engl J Med 2016;375:2519-2529 | DOI: 10.1056/NEJMoa1611593

VOL. 375 NO. 26 | Copyright © 2016

2% CV events / year
0.25% renal events / year

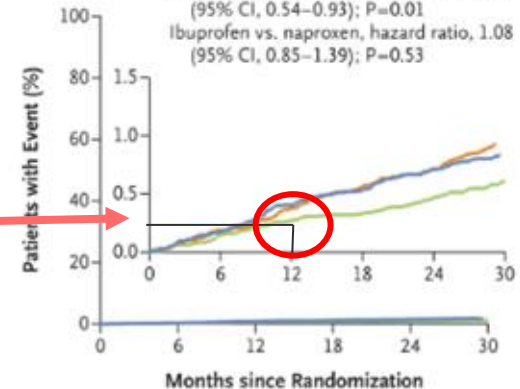
C Major Adverse Cardiovascular Events

Celecoxib vs. ibuprofen, hazard ratio, 0.87 (95% CI, 0.75–1.01); $P=0.06$
Celecoxib vs. naproxen, hazard ratio, 0.97 (95% CI, 0.83–1.12); $P=0.64$
Ibuprofen vs. naproxen, hazard ratio, 1.11 (95% CI, 0.97–1.29); $P=0.15$



E Serious Gastrointestinal Events

Celecoxib vs. ibuprofen, hazard ratio, 0.65 (95% CI, 0.50–0.85); $P=0.002$
Celecoxib vs. naproxen, hazard ratio, 0.71 (95% CI, 0.54–0.93); $P=0.01$
Ibuprofen vs. naproxen, hazard ratio, 1.08 (95% CI, 0.85–1.39); $P=0.53$



Original Investigation

Association Between Surgical Approach and Major Surgical Complications in Patients Undergoing Total Hip Arthroplasty

Daniel Pincus, MD, PhD^{1,2,3}; Richard Jenkinson, MD, MSc^{1,2}; Michael Paterson, MSc³; et al

Table 2. Comparison of Primary and Secondary Outcomes Between Propensity-score Matched Groups

Outcome	No. (%) of patients		Absolute risk difference (95% CI), % ^b	Hazard ratio (95% CI) ^c
	Anterior approach (n = 2993)	Lateral or posterior approach (n = 2993) ^a		
Primary outcome				
Major surgical complication, within 1 y	61 (2.0)	29 (1.0)	1.07 (0.46 to 1.69)	2.07 (1.48 to 2.88)

Risks with Surgery?

JAMA

JAMA

Published Online: March 17, 2020

2020;323(11):1070-1076.

doi:10.1001/jama.2020.0785

5,986 patients

1-2% surgical complications (fracture, dislocation, wound problems)

ARTHROPLASTY

The risk of venous thromboembolism, myocardial infarction, stroke, major bleeding and death in patients undergoing total hip and knee replacement

A 15-year retrospective cohort study of routine clinical practice

GET ACCESS

The
Bone & Joint
Journal

UK NHS 15- year experience, 83,756 patients, 90-day rates

“approximately 3% experienced VTE, MI, stroke, bleeding

Risk stratification in primary total joint arthroplasty: the current state of knowledge

Christian Gronbeck^a, Mark P Cote^b, Jay R Lieberman^c, Mohamad J Halawi^{b,*}

► Arthroplast Today. 2019 Feb 5;5(1):126–131. doi: [10.1016/j.artd.2018.10.002](https://doi.org/10.1016/j.artd.2018.10.002)

ARTHROPLASTY
TODAY

14,185 patients, 30-day rates of :

Medical complication: 2.0%

Surgical complication: 3.2%

Readmission: 3.2%

Mortality: 0.2%

30-day rates of :

Medical complication: **2.0%**

Surgical complication: **3.2%**

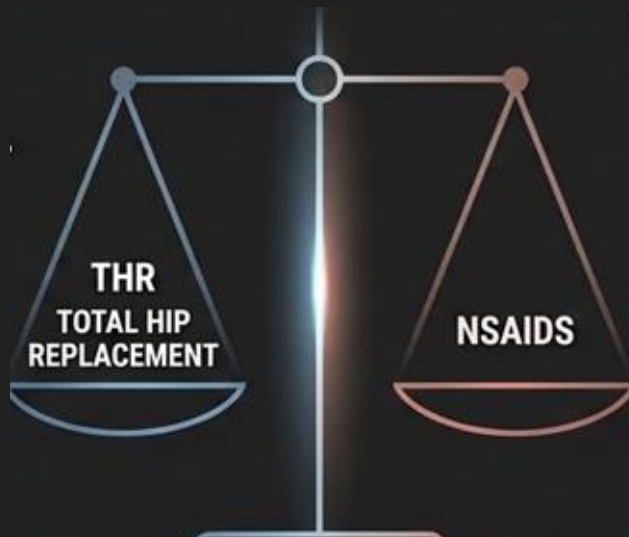
Readmission: **3.2%**

Mortality: **0.2%**

90-day rates of :

VTE, MI, stroke or bleeding: **3%**

surgical complications (fracture, dislocation, wound problems): **1-2%**



365-day rates:

2% CV events

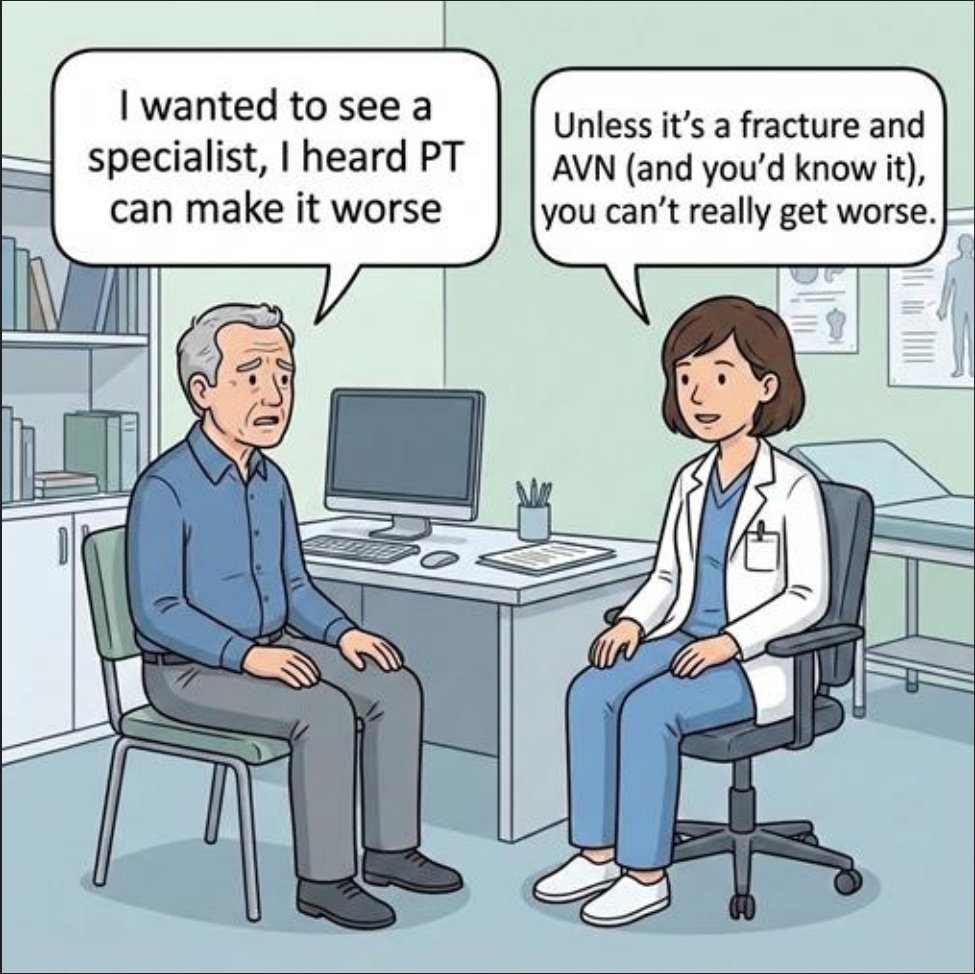
0.25% Renal

(0.25% GI)

(0.5% mortality)

THE
ORTHOPAEDIC
FORUM

What's Important: A Rallying Call for Nonsteroidal
Anti-Inflammatory Drugs in Musculoskeletal Pain



I wanted to see a specialist, I heard PT can make it worse

Unless it's a fracture and AVN (and you'd know it), you can't really get worse.

Endorsement for Physical Therapy:

◆ AI Overview

Physical therapy (PT) and progressive exercise therapy are universally established as the first-line treatment for the vast majority of chronic, non-traumatic orthopedic hip conditions. Major medical organizations—including the American Physical Therapy Association (APTA), the American Academy of Orthopaedic Surgeons (AAOS), and the American College of Rheumatology (ACR)—mandate conservative physical rehabilitation before considering invasive interventions. This preference is driven by high-quality evidence demonstrating that PT delivers comparable functional outcomes to surgery with significantly fewer risks and lower costs. [National Institutes of Health +4](#)

Exceptions to the Rule

While PT is the standard for *almost* all orthopaedic hip maladies, it is explicitly **not** the first-line treatment for:

- **Acute, displaced fractures** (e.g., femoral neck fractures requiring urgent stabilization)
- **Avascular necrosis (AVN)** in its advanced stages

What is the complication rates associated with Physical Therapy?

Side-by-Side Comparison of PT Risks

Risk Level	Type of Event	Estimated Rate / Frequency
Common	Minor muscle soreness or temporary joint stiffness	~10% to 20% of patients
Uncommon	Temporary flare-up of arthritis symptoms	~2% to 5% of patients
Rare	Muscle strains or minor tendon irritation	< 1% of patients
Extremely Rare	Joint capsule damage or severe cartilage tear	Virtually 0% under professional supervision



Criteria for THA Approval - PT and NSAIDS required for escalation anyway...



Prerequisite Conditions

- **Inadequate Pain Control:** Pain cannot be adequately controlled despite optimal conservative treatment, or severe functional disability exists.
- **Documented History:** Clear evidence of unsuccessful conservative therapy must be addressed in the pre-procedure medical record.
- **Prior Trial Mandate:** Non-surgical medical management (such as anti-inflammatory medications) is typically implemented before scheduling.



Required Treatment (Within Last Year)

NSAIDs or Acetaminophen

Required trial: 3 weeks

PT or Home Exercise

Required duration: 12 weeks

Activity Modification

Required duration: 12 weeks

Injections? Steroids risks may outweigh benefits.

> *J Bone Joint Surg Am.* 2021 Nov 17;103(22):2070-2079. doi: 10.2106/JBJS.20.02155.

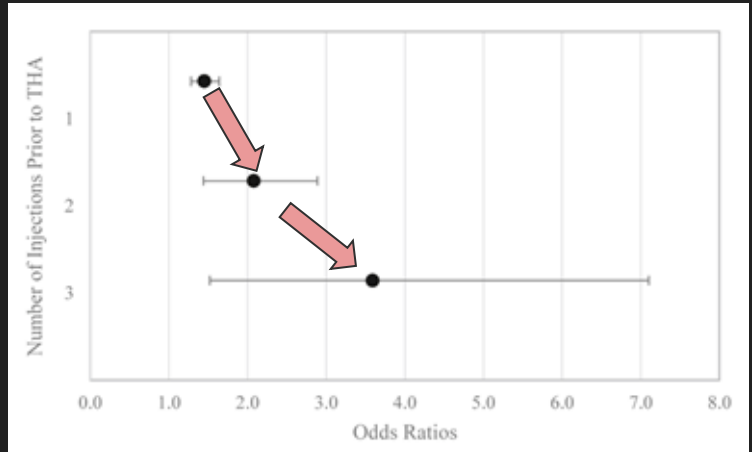
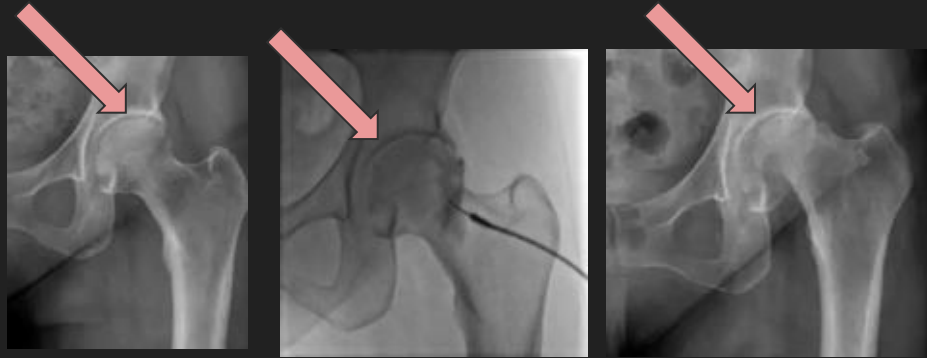
Rapidly Destructive Hip Disease Following Intra-Articular Corticosteroid Injection of the Hip

Kanu Okike ¹, Ryan K King ², Jason C Merchant ³, Eugene A Toney ¹, Gregory Y Lee ¹, Hyo-Chun Yoon ³

> *J Arthroplasty.* 2021 Jun;36(6):2033-2037.e1. doi: 10.1016/j.arth.2021.01.076. Epub 2021 Feb 2.

Preoperative Corticosteroid Injections Demonstrate a Temporal and Dose-Dependent Relationship with the Rate of Postoperative Infection Following Total Hip Arthroplasty

Enrico M Forlenza ¹, Robert A Burnett ¹, Avinaash Korrapati BS ¹, JaeWon Yang ¹, Brian Forsythe ¹, Craig J Della Valle ¹



Pathologies

General Outline: Hip Pathology

Intrinsic Causes, "the hip"

Should be referred to Ortho

Arthritic Conditions

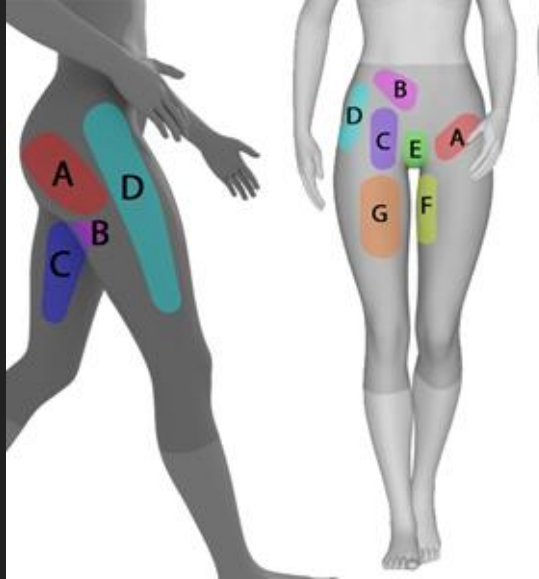
- *Primary Hip Osteoarthritis*
- *Rheumatoid & Posttraumatic*
- *Secondary to Dislocation*

Structural & Bone Pathology

- *Femoral Nonunion / Malunion*
- *Failed Hip Fracture Surgery*
- *Avascular Necrosis*
- *Subchondral Insufficiency*

Developmental

- *Adult Hip Dysplasia*
- *Labral Pathology & Impingement*



Extrinsic Causes, not "the hip"

Other specialties have a role

1. Greater Trochanteric Pain

Commonly managed with conservative primary care.

2. Sacroiliitis

Often relates to spinopelvic or inflammatory origins.

3. Radiculopathy

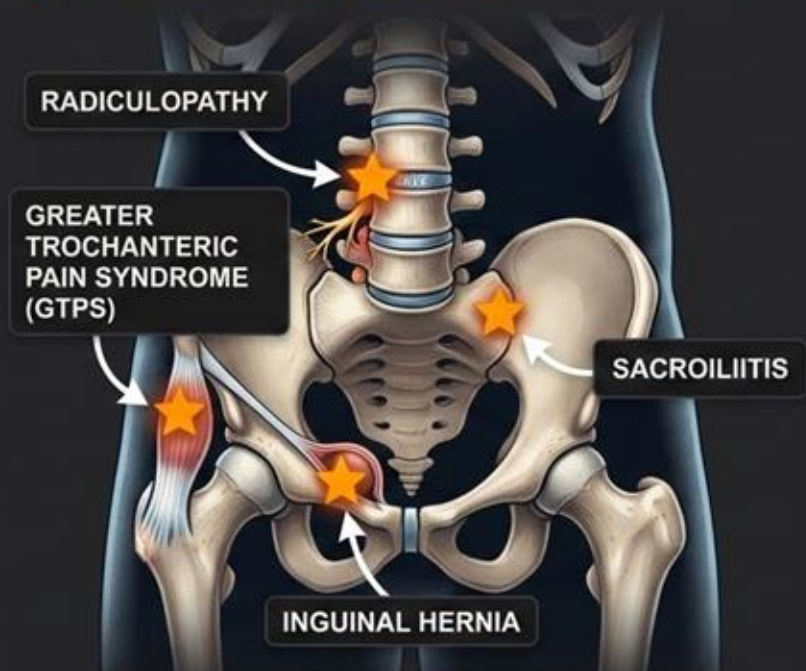
Referred pain originating from the lumbar spine.

4. Inguinal Hernia

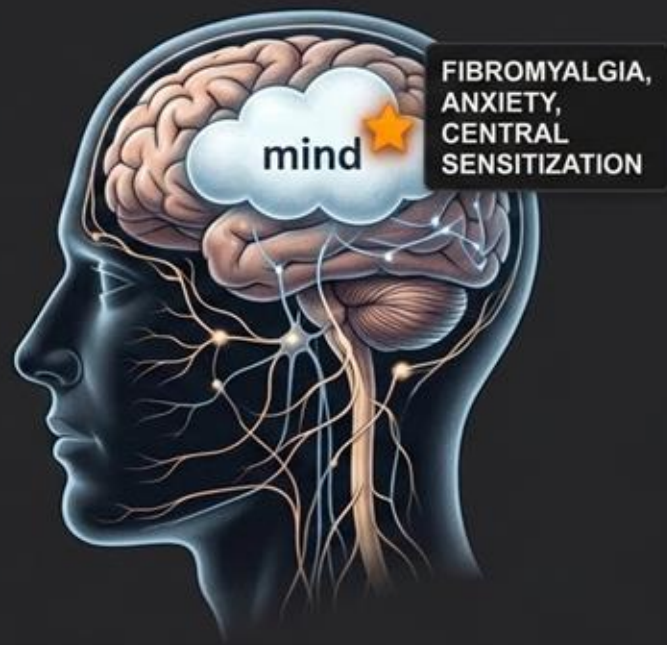
Requires general surgery evaluation, not orthopaedics.

Extrinsic Causes / Confounders
“It’s NOT the hip”

Anatomical Confounders



Neurocognitive and Central Confounders



Greater Trochanteric Pain Syndrome (GTPS)



Diagnostic Terminology

Often clinically referred to as:

- "Trochanteric Bursitis"
- "Abductor Tendonitis"
- "Gluteus Medius/minimus tear"
- "Iliotibial Band tightness"

**GTPS**
ASSESSMENT

Clinic Based Tests

PALPATION OF THE GREATER TROCHANTER
SENSITIVITY 80-86%, SPECIFICITY 47-61%

30 SECOND SINGLE LEG STANCE TEST
SENSITIVITY 33-100%, SPECIFICITY 97-100%

FABER TEST
SENSITIVITY 50%, SPECIFICITY 83%

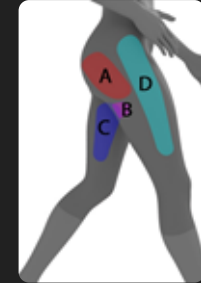
RESISTED HIP ABDUCTION
SENSITIVITY 20-87%, SPECIFICITY 87-97%

FADER TEST WITH RESISTANCE
SENSITIVITY 44%, SPECIFICITY 93%

ADDUCTION TEST WITH RESISTANCE
SENSITIVITY 38%, SPECIFICITY 93%



@EXERCISEIRFAN



Clinical Presentation

- LATERAL "hip" pain
- Pain directly localized on the Trochanter
- "Can't lie on my side"
- Not mutually exclusive with OA but no barriers to treat

GTPS Treatment

Physical Therapy

NSAIDS

STRETCHING



Back Problems: Radiculopathy, DDD, Sacroiliitis, Sciatica

Clinical Presentation

Posterior Pain

"Pain around the buttocks"

"My arthritis must be causing my sciatica..."

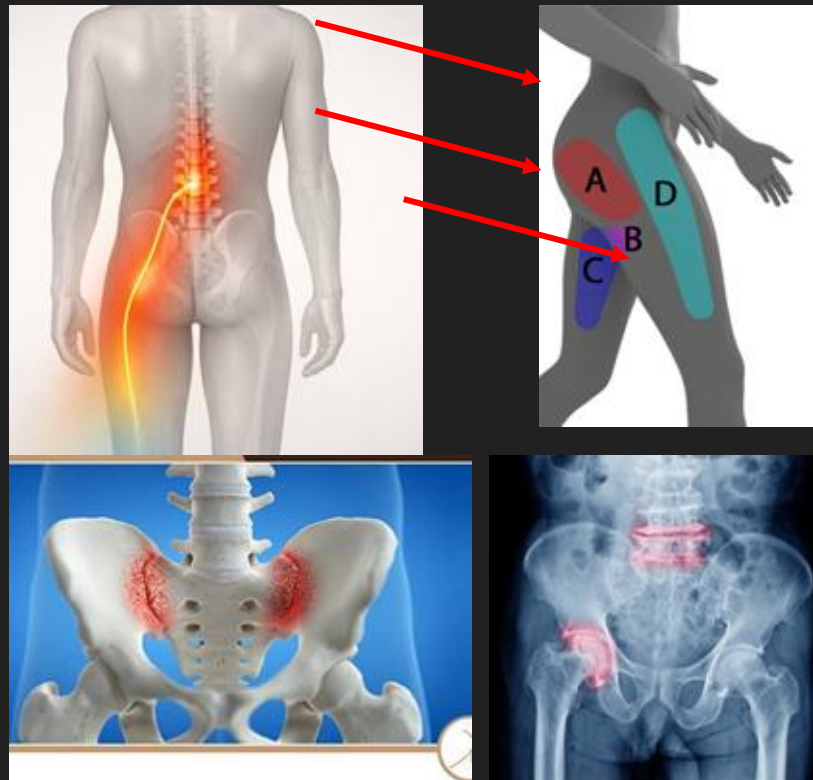
Treatment (Tx)

Physical Therapy, NSAIDs, Pregabalin, Gabapentin, duloxetine

Referrals

Spine care teams (Ortho Spine, Neurosurg, PM&R, etc.)

Clinical Pearl: These are not mutually exclusive; simultaneous referral to hip and back specialists is highly reasonable.



Inguinal Hernia

Groin Pain

“Dull Ache & pain in the groin”

Often presents similarly to hip arthritis.

Presentation

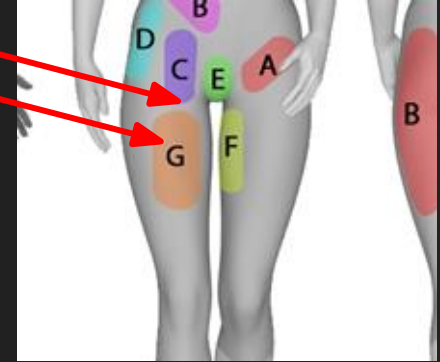
Visible bulge in groin/scrotum. Worsens with coughing or straining; reduces when lying down. *(Can be hard to tell in some populations)*

Detection

Often incidentally found during advanced imaging (i.e. MRI) for hip pathology workup.

Referrals

General Surgery



Fibromyalgia, Central Sensitization, Anxiety Disorders

Observational Study > [Pain Pract.](#) 2020 Mar;20(3):277-288. doi: 10.1111/papr.12851.

Epub 2019 Nov 18.

The Extent of Pain Is Associated With Signs of Central Sensitization in Patients With Hip Osteoarthritis

Matthew J Willett¹, Mathias Siebertz², Frank Petzke², Joachim Erlenwein², Alison Rushton¹, Emiliano Soldini³, Marco Barbero⁴, Deborah Falla¹

> [BMC Musculoskelet Disord.](#) 2020 Sep 5;21(1):595. doi: 10.1186/s12891-020-03630-6.

Central sensitization inventory scores correlate with pain at rest in patients with hip osteoarthritis: a retrospective study

Yoshihisa Ohashi¹, Kensuke Fukushima², Gen Inoue¹, Kentaro Uchida¹, Tomohisa Koyama¹, Maho Tsuchiya¹, Katsufumi Uchiyama¹, Naonobu Takahira³, Masashi Takaso¹



Addressing MH for those who have histories, risk factors. Duloxetine (SNRI)

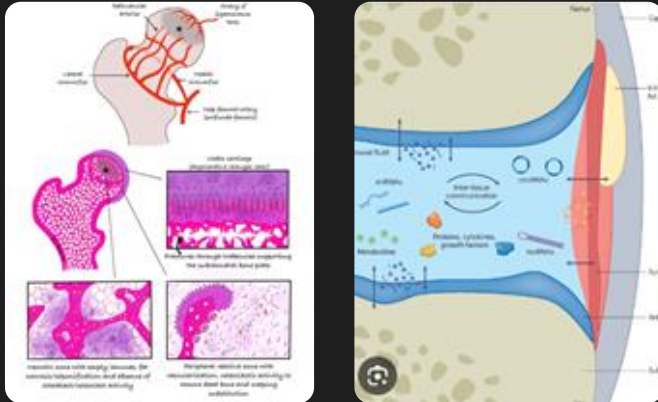
“Optimization” = Weight, smoking, blood sugar, dental care, and *Mental Health*

Intrinsic Causes

“It IS the hip”

Orthopaedics: Biology vs. Mechanics

Biology

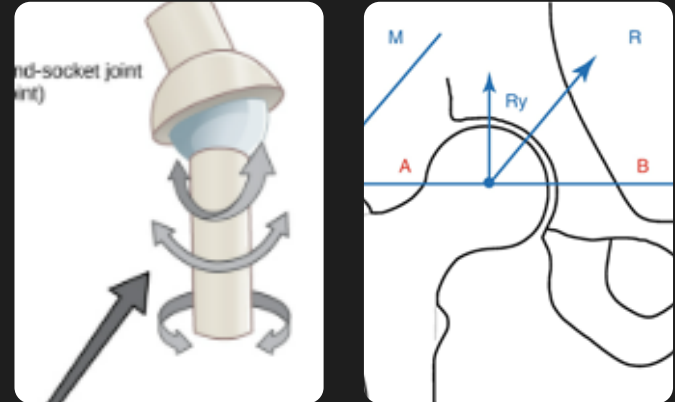


Key Biological Factors

Proteolytic Enzymes, Matrix Metalloproteases, inflammatory cytokines, non-mendelian inheritance, Vitamin D receptor, Estrogen receptor 1, etc.

VS

Mechanics

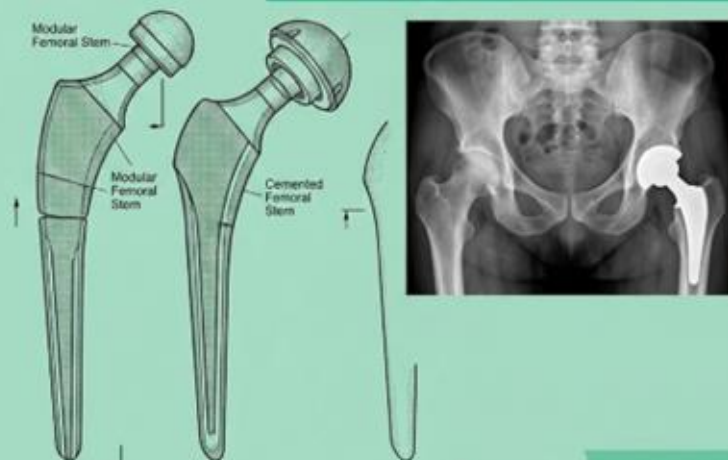


Key Mechanical Factors

Joint articulation, load distribution, shear stress, vector forces, mechanical wear, and implant geometry constraints.

Mechanical ~~Molecular~~ Basis of Disease

Volume 1872 | Issue 8 | November 2026



General Outline: Hip Pathology

Intrinsic Causes ("Hip")

Should be referred to Ortho

Arthritic Conditions

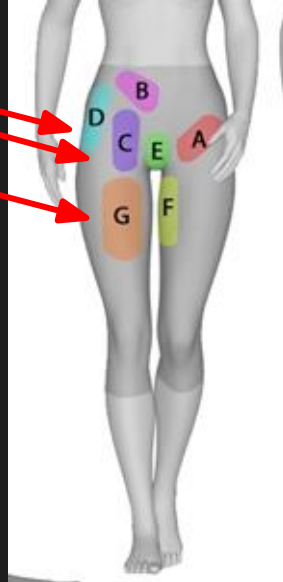
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- *Avascular Necrosis*
- *Subchondral Insufficiency*

Developmental

- *Adult Hip Dysplasia*
- *Labral Pathology & Impingement*



Clinical Presentation

Often similar symptoms

1. Pain Location

Pain primarily in the "groin", but can also radiate to the lateral and buttocks region. (but not "shooting into the foot" or "going from my hip to my back (Spine), or "i can push on my hip side it to make it hurt" (GTPS)

2. Provocative Activities

Difficulty putting on shoes & socks, climbing stairs, and leaning forward.

3. Relevant History

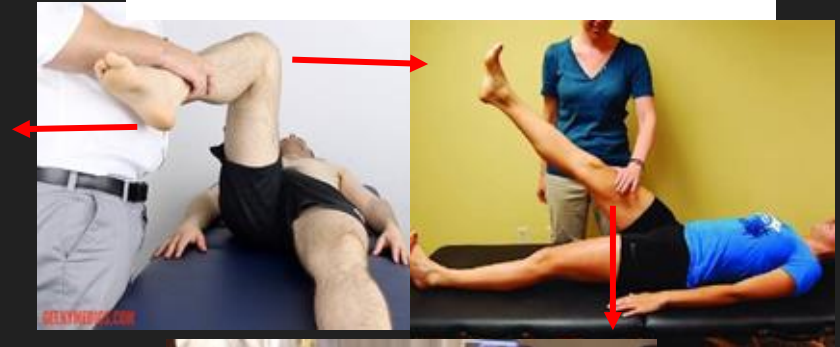
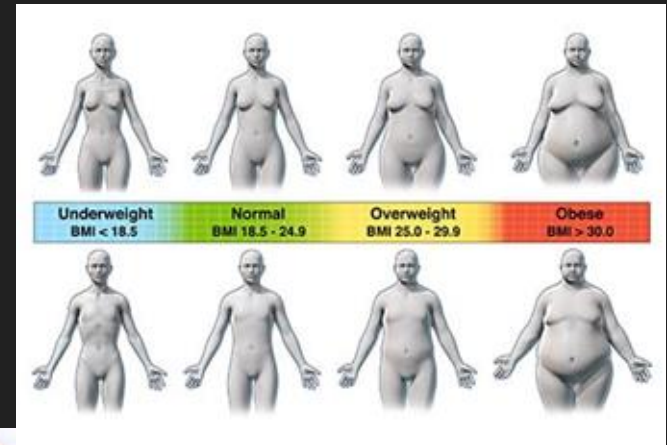
Key history factors: past injuries, fractures, hip surgeries, or previous scopes?

Square Peg in a Round Hole



Hip Examination

1. Inspection: Body Habitus, Gait, Length Discrepancy, Scars
1. Range of motion: Flexion
Contractures? Lack of rotation
(especially internal)
1. Neurovascular
1. Provocative Examination
 - a. FADIR
 - b. Stinchfield (resisted SLR)
 - c. Hip Circumduction (Fitzgerald test)



Clinical Care Pathway



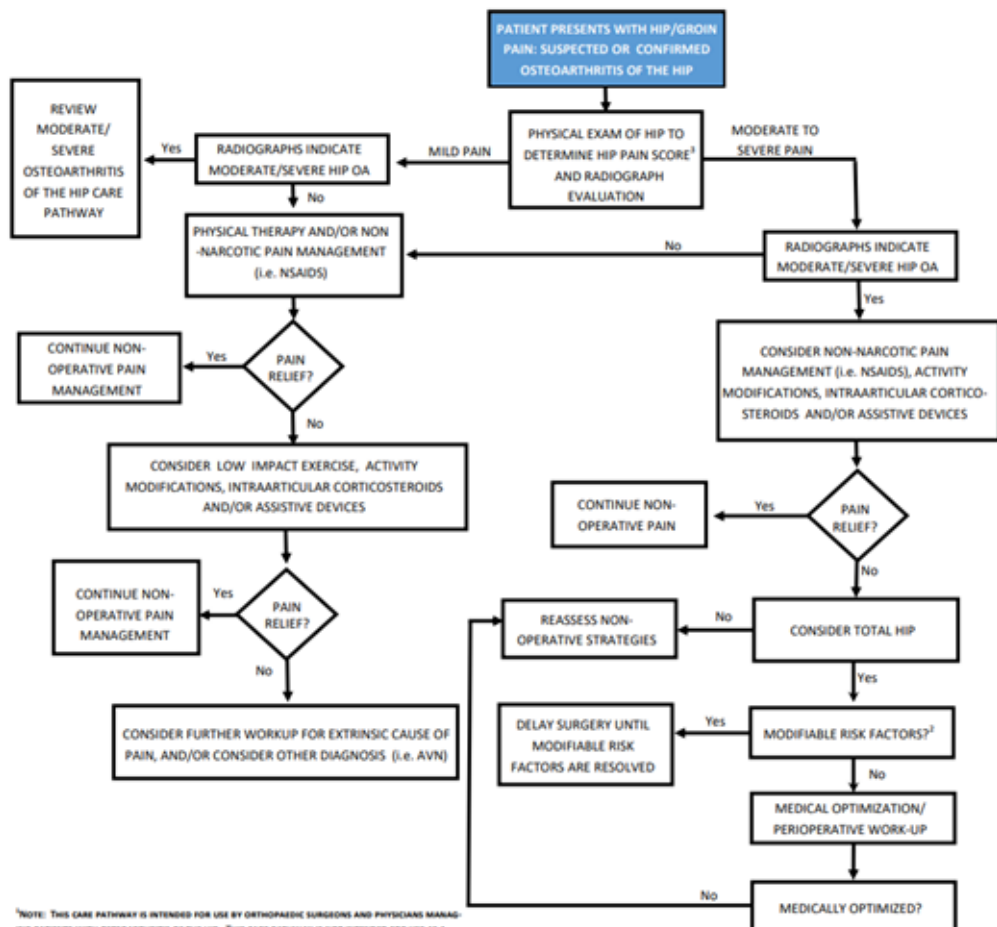
AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS

Total Hip Arthroplasty Toolkit

The THA Toolkit is a collection of information, resources, and tools to assist AAOS members in making informed practice decisions based on evidence-based recommendations and/or practice standards. The information provided compiles advocacy, practice management, and quality improvement resources while including clinical and patient education.



OSTEOARTHRITIS OF THE HIP CARE PATHWAY¹



Conservative Care: Initial Treatment Pathways

Mild Pain & Mild Arthritis?

First steps of managing mild symptoms

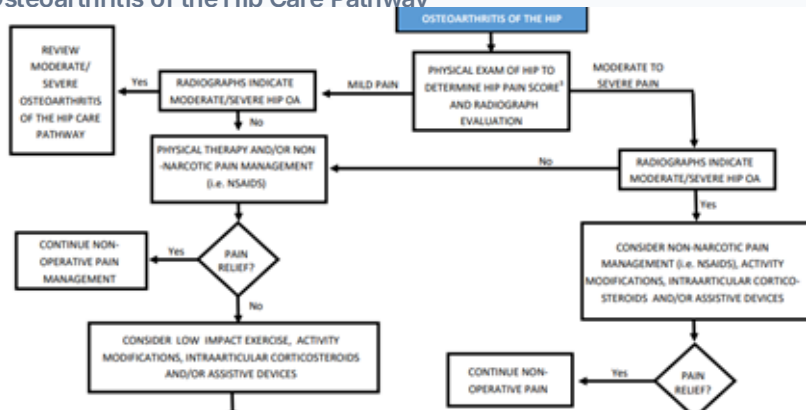
- Activity Modification
- NSAIDs
- Physical Therapy (PT)

Severe Pain & Severe Arthritis?

First steps of managing severe symptoms

- Activity Modification
- NSAIDs
- Physical Therapy (PT)

Osteoarthritis of the Hip Care Pathway



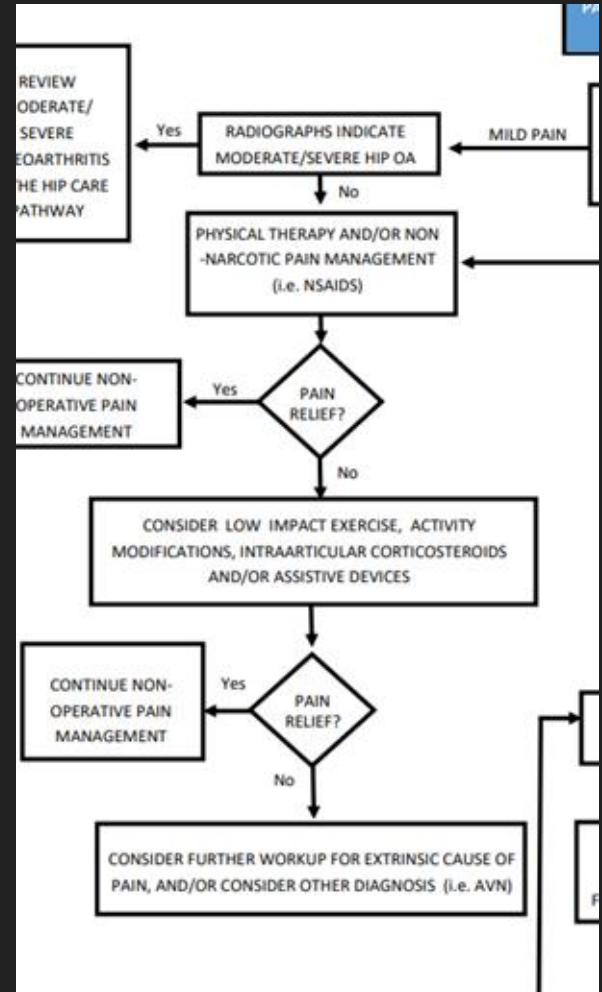
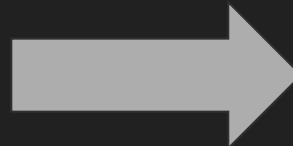
Where does an MRI fit in?

In brief, if you have:

Non-diagnostic x-rays

AND severe, persistent, or recalcitrant symptoms

OR are considering another diagnosis from arthritis (AVN? Fracture? Labrum?)



So....what is “Hip Osteoarthritis”?

It's actually a BROAD term, and encapsulates the end disease of a variety of pathomechanics leading to cartilage loss...



What are some causes?

DYSPLASIA

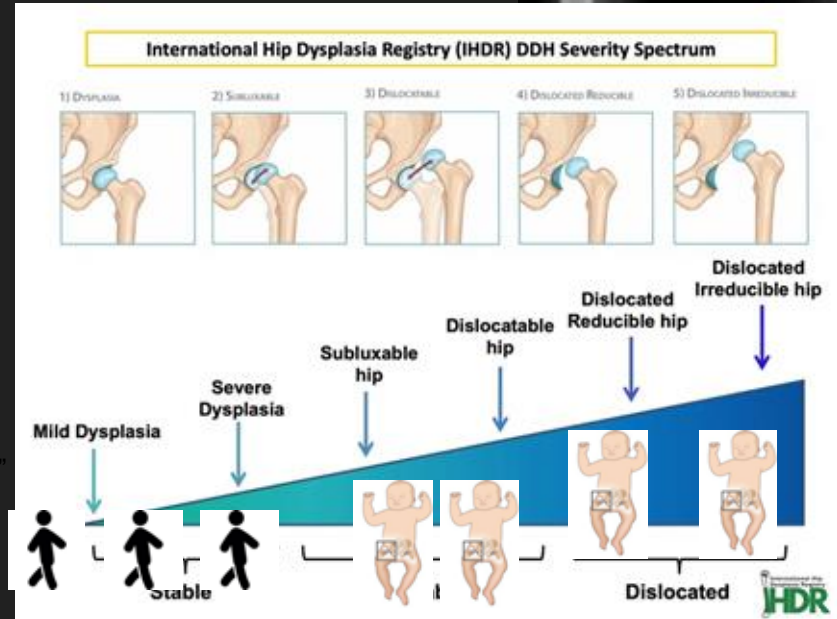
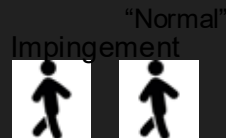
**EVERY GERIATRIC PATIENT
WAS A PEDIATRIC PATIENT
AT ONE POINT**



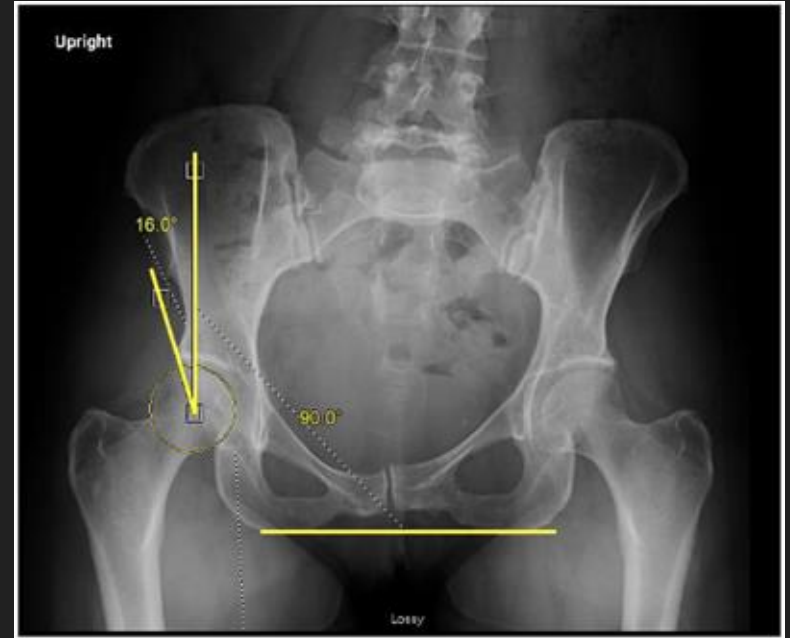
Adult Dysplasia (pediatric dysplasia that eventually grew up)



- While Pediatric “dislocation” is a **binary** event, Pediatric “dysplasia” is a **continuous spectrum** and may go unnoticed in youth but they have adult biomechanical consequences

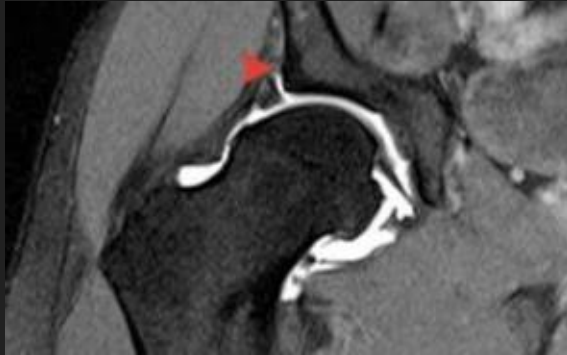


Even mild dysplasias have problems.

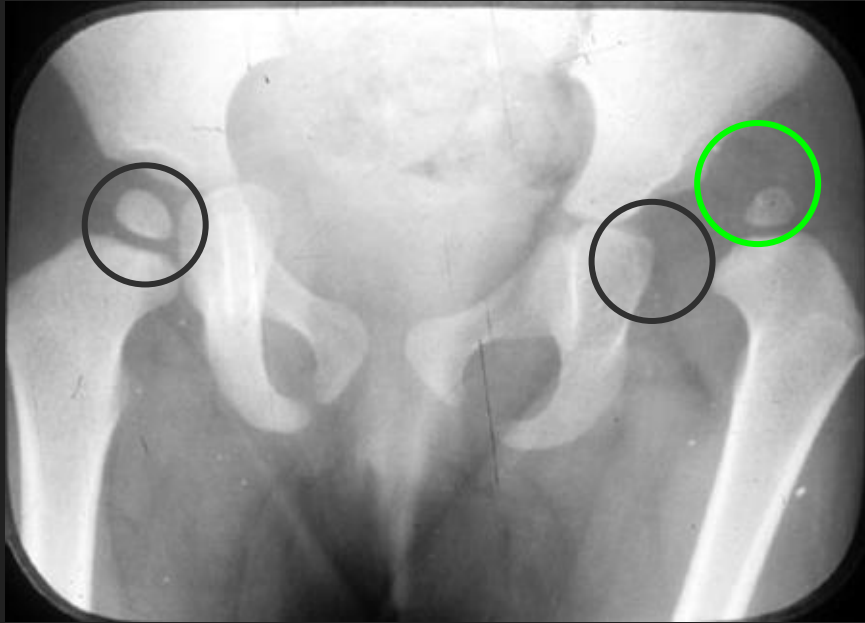


High “acetabular angle” as a child, translate to low “lateral center-edge angle” as adult

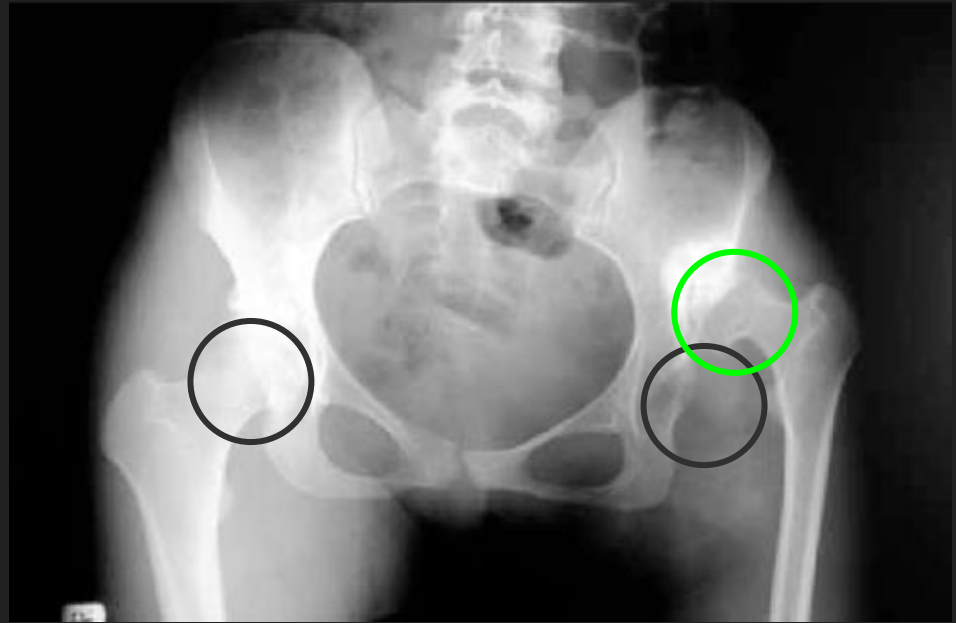
Edge Loading Phenomenon



Overt “dislocations” become congenital Crowe Dysplastics

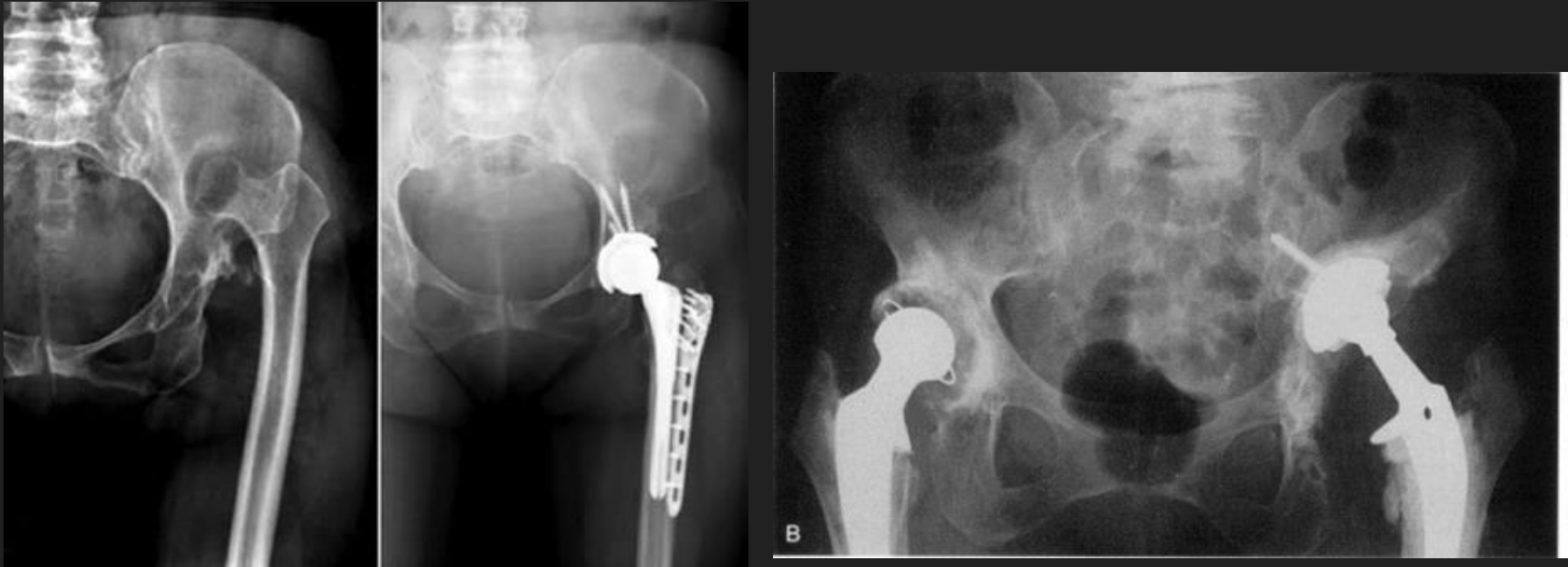


Infant, high hip dislocation

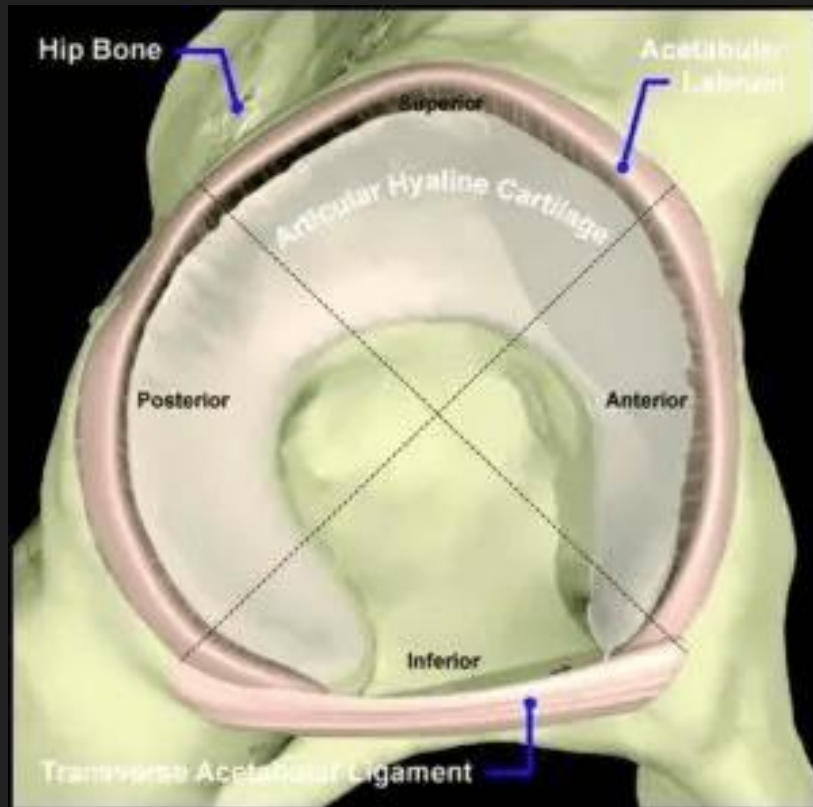


24 Y.O. Female, Crowe 4 arthritis
secondary to dysplasia

THA can be very complex - high hip center, excessive lengthening, sciatic nerve palsies.



Labral Pathology



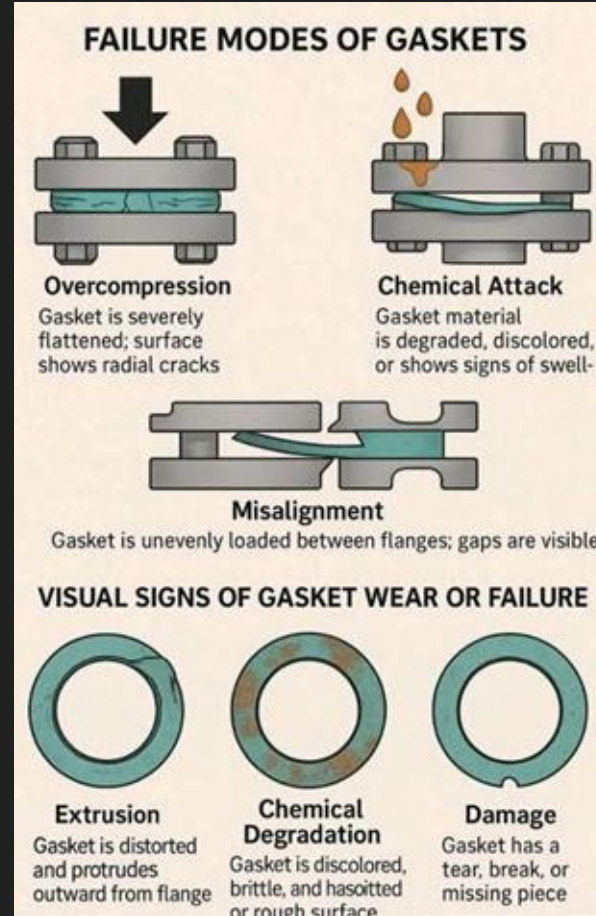
LABRUM vs MENISCUS

What's the Difference and Why Does It Matter for Lifters?

The diagram compares the **SHOULDER LABRUM** and **HIP LABRUM** on the left with the **MEDIAL MENISCUS** and **LATERAL MENISCUS** on the right. A large **VS** symbol is placed between the two columns. Below the diagrams, four icons represent the functional differences: **STABILITY** (shield icon), **LOAD DISTRIBUTION** (downward arrow icon), **JOINT MECHANICS** (running figure icon), and **PERFORMANCE & RESILIENCE** (dumbbell icon). The left side is illustrated with a man performing a bench press, and the right side with a woman performing a squat.

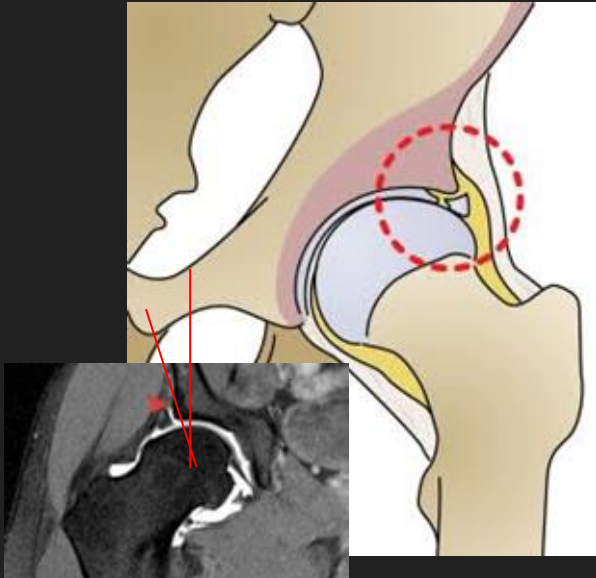
Both hip labrums and knee menisci are similar. They are “Gaskets”

- Both distribute the point load across two hard surfaces
- Both fibrocartilage, similar histologically
- Both are “torn” in early degenerative disease
- Both have poor healing potential with “repair” in older patients
- Both accelerate arthritis if you try to treat with “debridement”

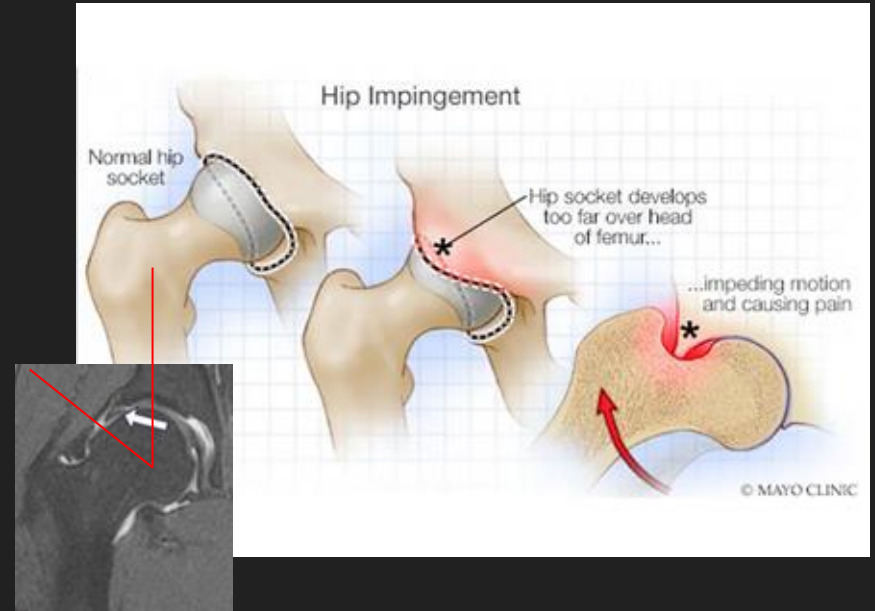


Anatomic dysfunction associated with Labral Pathology

“Dysplasia” = too little socket bone, and “labrum” makes up for the structural support, edge-loads the labrum



“Impingement” = too much bone (or pointed the wrong way) = the neck crashes into the labrum and socket



Normal Anteversion



Retroversion



Mis-shapen Sockets



Mis-shapen Balls



Normal



Cam morphology

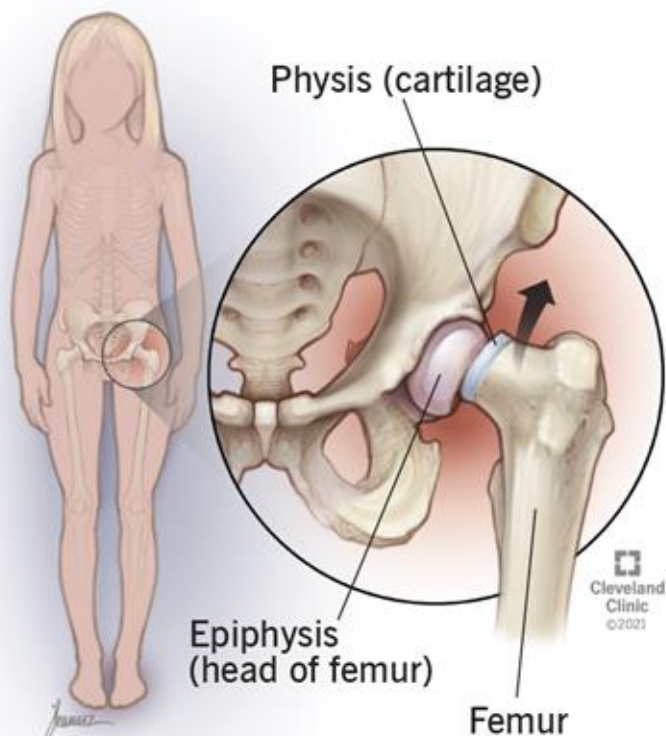


Pincer Impingement

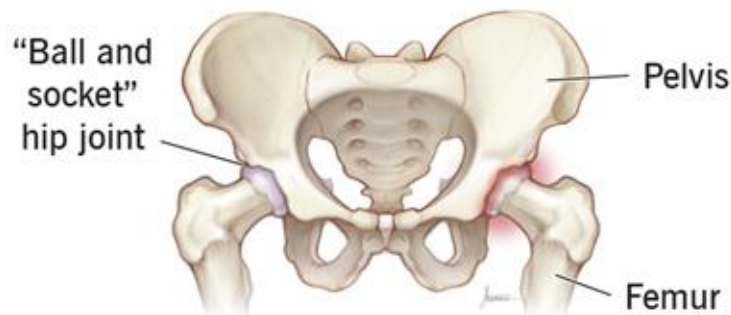


Cam Impingement

Slipped capital femoral epiphysis



Legg-Calve-Perthes disease



Healthy
femoral head



Healthy
blood
supply

Legg-Calve-Perthes
femoral head



Avascular
necrosis

SCFE, now an adult



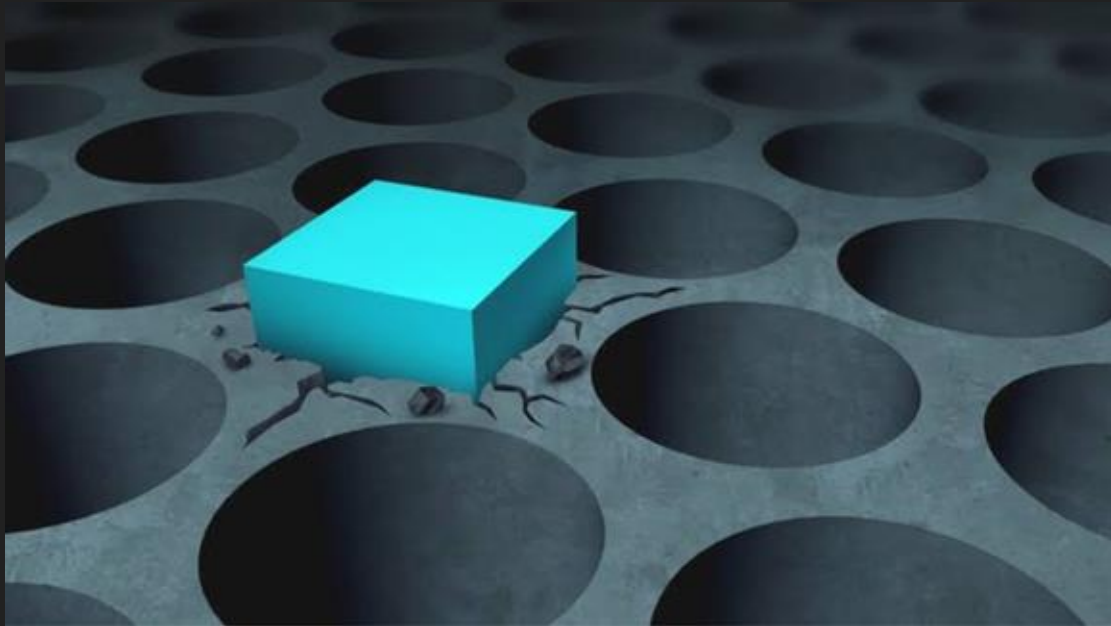
Perthes, now an adult



Distributed forces = low pressures.

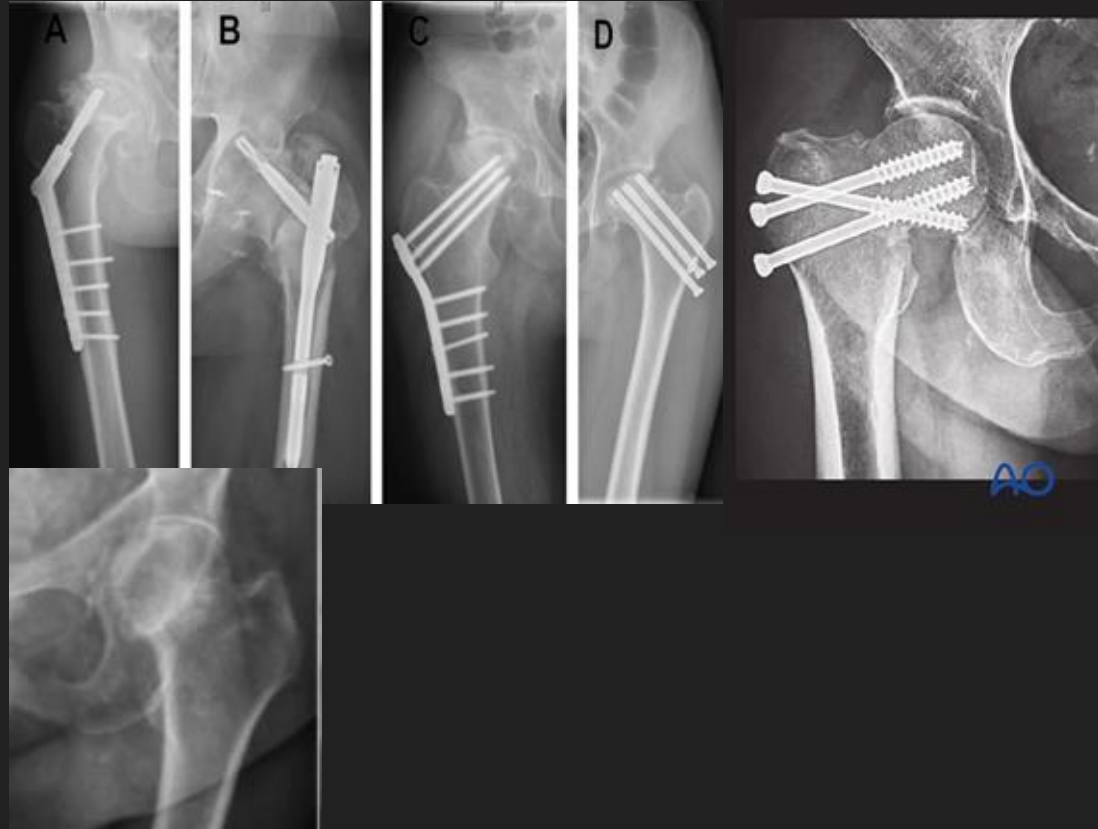
Concentrated forces = high pressure

Square peg in a round hole = concentrated forces



Posttraumatic Arthritis of the hip, femoral neck nonunion, femoral head AVN

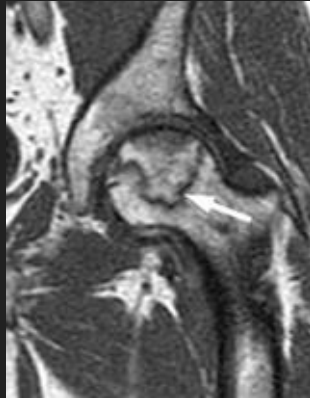
- 300,000 annually,
- Prior hardware placement
- Vascular insult to the femoral head due to hardware
- There can be initial non-operatively treated fractures with late disease
- Send to hip specialist directly, THA



The two exceptions to the “PT and NSAIDS” rule - compromised subchondral integrity whether by

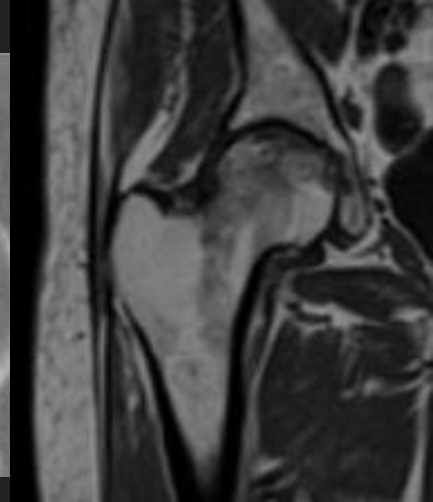
Blood supply leading to
subchondral bone failure

“Hip Avascular Necrosis”



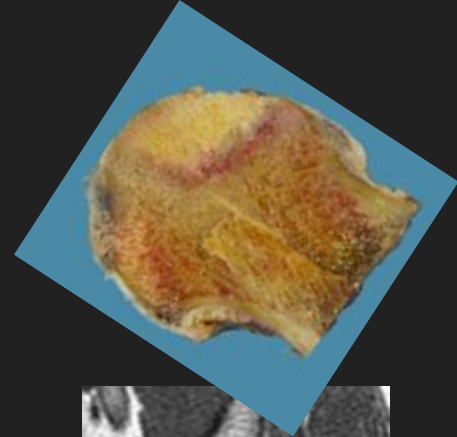
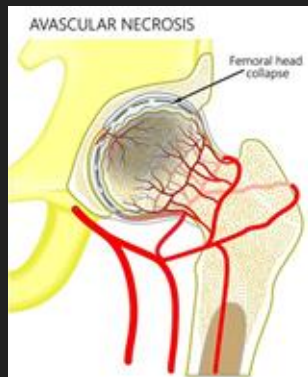
Chronic stress on weak bone

“Subchondral Insufficiency
Fracture”

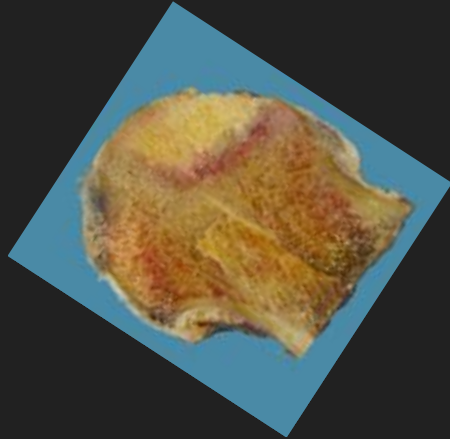


Avascular Necrosis of Femoral Head

- 20,000/year, 10% of arthroplasties
- Hip is most susceptible (75%), vs. shoulder, knee, ankle scaphoid, and jaw
- Reduced blood flow to the femoral head, leading to bone death and collapse
 - Causes/Risk Factors
 - Traumatic Event (physical event)
 - Hypercoagulable states / sickle cell / autoimmune (thrombotic/embolic)
 - Steroid use (fat embolic and osteoblast apoptosis)
 - Alcoholism (fat embolic)
 - HIV/hepatitis, CMV.
 - Protease inhibitors (to treat HIV...)
- Workup and initial treatment
 - X-ray and MRI
 - Precollapse and younger age ("early") = Bisphosphonate
 - Core decompression (controversial, only 50-80% successful, even in "early" disease)
 - Post collapse or older age
 - THA

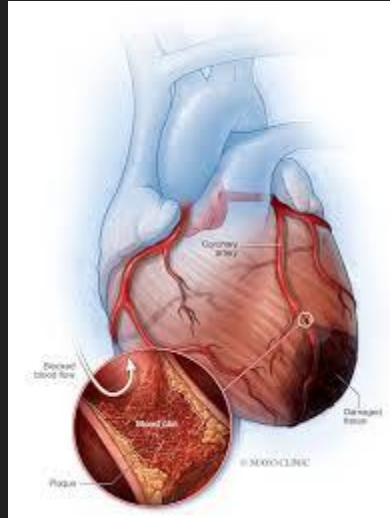


Avascular Necrosis is an Infarct / Ischemic Event



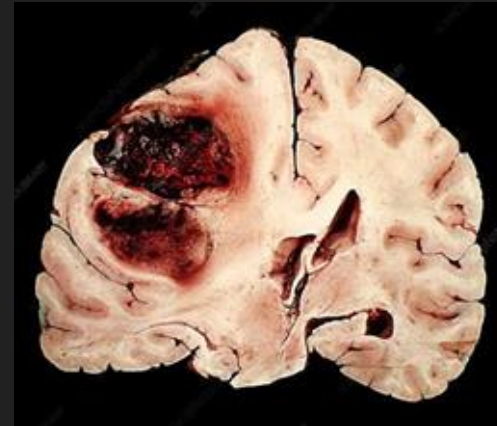
“Osseous
infarct”

“Myocardial
infarct”



“Turfgrass Infarct”

“Cerebral
infarct”



“Pulmonary
infarct”



Subchondral insufficiency fracture of Femoral Head (SIFFH)

Symptoms: Sharp pain in the groin or hip pain that gets worse when walking or standing

Cause: Stress Fracture of cancellous bone

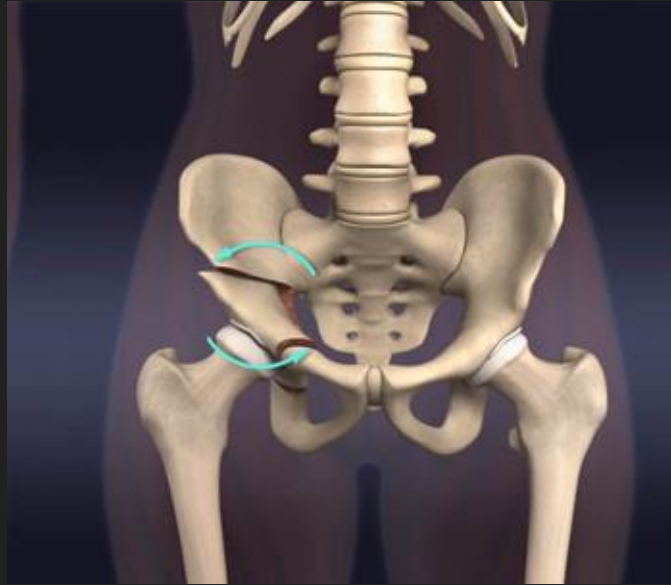
Low bone density, often seen in older adults and postmenopausal women and stress overload on compromised bone (like a break on a slow rot)



“I think it’s time for a hip replacement”

Notice what's not covered in this talk?

Hip Preservation



Co-requisite for hip preservation is the presence of structural deformity AND the absence of any cartilage damage



1. The "Soft" Cutoffs Used in Clinical Practice

While surgeons will evaluate each patient individually, here are the general trends:

- **Under 35:** This is the "Gold Standard" age. The cartilage is usually resilient, and the healing capacity of the bone and labrum is high. Success rates are at their peak.
- **35 to 45:** This is the "Grey Zone." Surgeons will perform these procedures, but they are much more selective. They will look closely at your Tönnis grade and the presence of any cartilage loss.
- **Over 50:** Most surgeons become highly skeptical. At this age, the prevalence of underlying "hidden" osteoarthritis or age-related cartilage thinning is much higher. Unless a patient has perfect cartilage (Tönnis 0), most surgeons will recommend a **Total Hip Arthroplasty (THA)** instead of preservation.

“Can I put off hip replacement”?

What are the success rates of hip preservation, assuming **NO ARTHRITIS**?

Answer: It might buy you a few years but 1-in-3 chance you need a THA.

Condition (early disease, “best” case scenarios)	Preservation Surgery	“Success” rates 5-year	“Success” rates 10-year	Long term failure and THA conversion (15+years)
Hip Dysplasia	Periacetabular Osteotomy	95-98%	85-92%	40% THA
Pincer Impingement	Acetabuloplasty	90-96%	80-90%	20-30% THA
Cam Impingement	Femoroplasty	92-97%	80-90%	20-30% THA
Labral Tear	Labral Repair	92-96%	82-90%	35-40% THA
AVN (No collapse)	Core Decompression	65-85%	50-70%	50% or greater.

“Can I put off hip replacement”?

What are the success rates of hip preservation, assuming some (“mild”) arthritis?

“But it’s just ‘Mild’ Arthritis...”

Don’t bother. No

Condition (early disease, best case scenarios)	Preservation Surgery	“Success” rates 5-year	“Success” rates 10-year	Long term failure and THA conversion (15+years)
Hip Dysplasia	Periacetabular Osteotomy	75-85%	50-65%	65-80% THA
Pincer Impingement	Acetabuloplasty	55-70%	25-45%	>85% THA
Cam Impingement	Femoroplasty	65-70%	30-50%	80-90% THA
Labral Tear	Labral Repair	65-70%	30-50%	80-90% THA
AVN (“mild” collapse)	Core Decompression	15-35%	<15%	---



UNDERSTANDING COMMON PATHWAYS TO TOTAL HIP REPLACEMENT

Hip Conditions and Treatment Journey

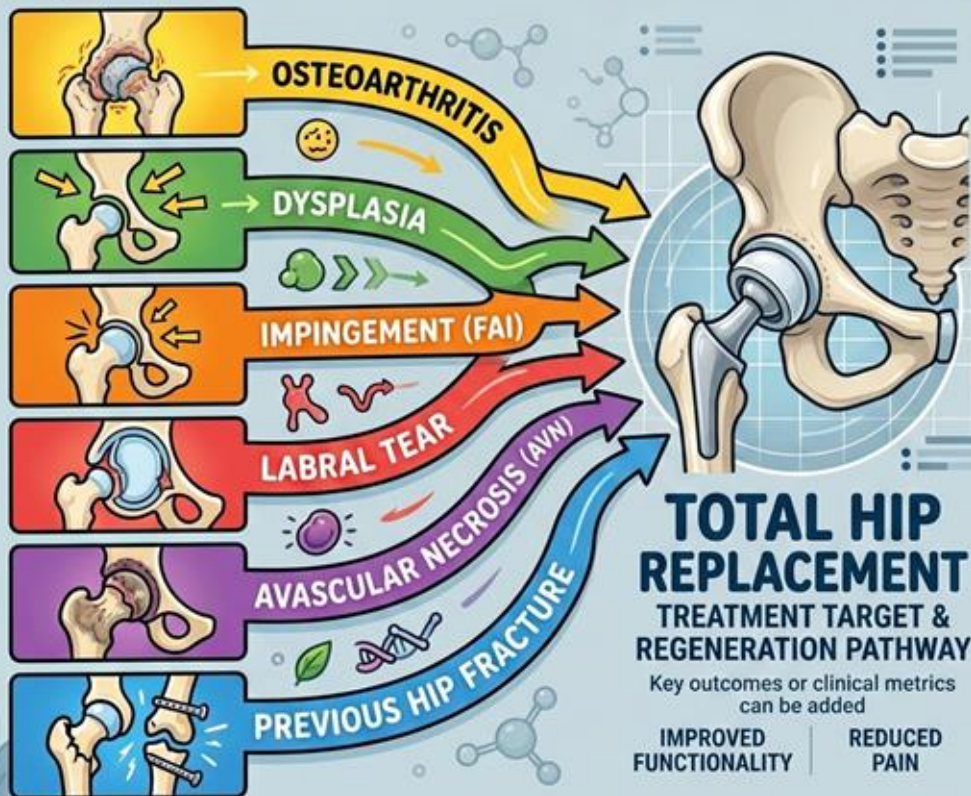
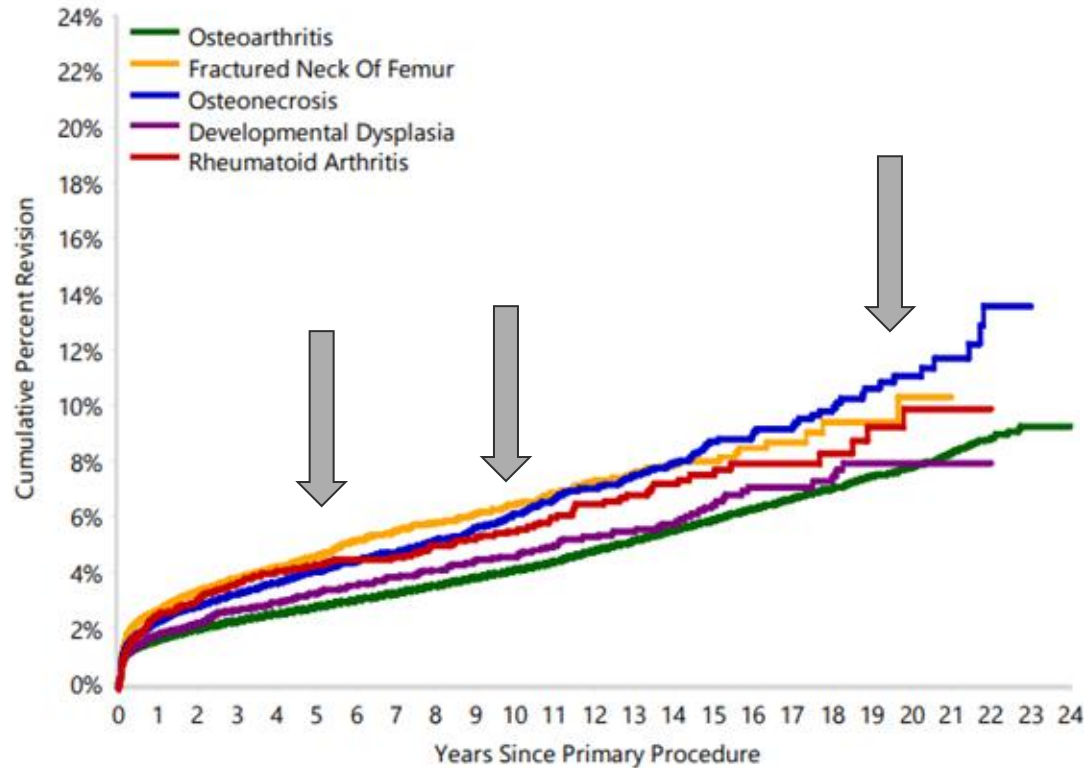


Figure HT4 Cumulative Percent Revision of Primary Total Conventional Hip Replacement by Primary Diagnosis



5-years = 96-98%
survivorship

10-years = 94-97%
survivorship

20-years = 90-95%
survivorship

“Can I put off hip replacement”?

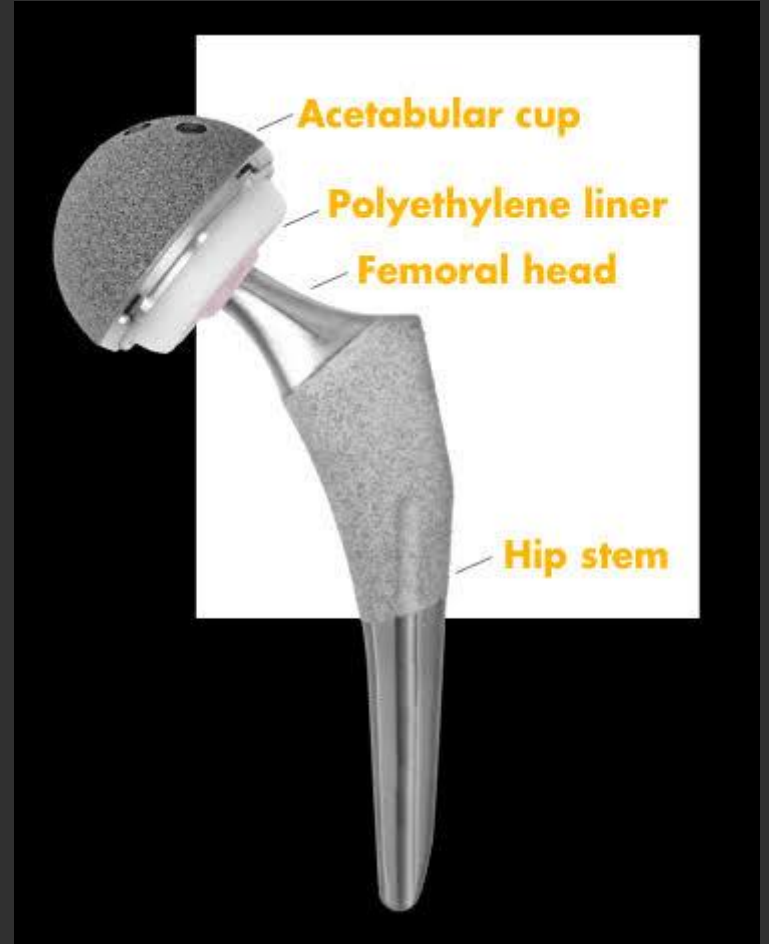
What are the success rates of hip preservation, assuming some (“mild”) arthritis?

“But it’s just ‘Mild’ Arthritis...”

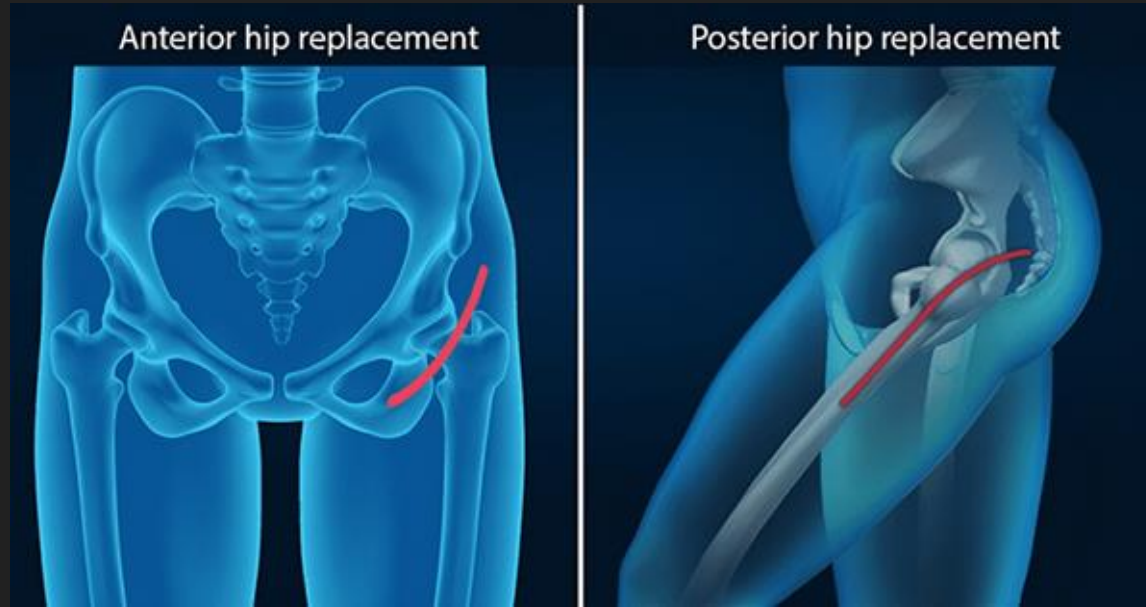
Don’t bother. No

Condition (early disease, best case scenarios)	Preservation Surgery	“Success” rates 5-year	“Success” rates 10-year	Long term failure and THA conversion (15+years)
Hip Dysplasia	Periacetabular Osteotomy	75-85%	50-65%	65-80% THA
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Labral Tear	Labral Repair	65-70%	30-50%	80-90% THA
AVN (“mild” collapse)	Core Decompression	15-35%	<15%	---
All the above	Total Hip arthroplasty	96-98%	94-97%	90-95%

Total Hip Arthroplasty

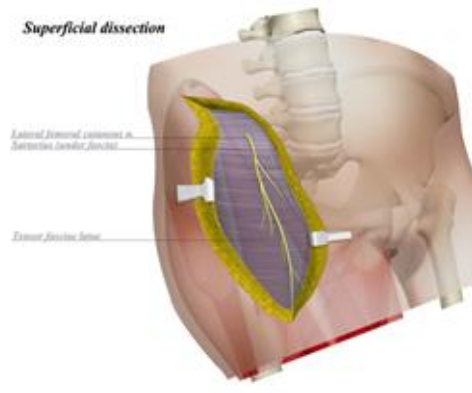


Two total hip replacement approaches common in USA

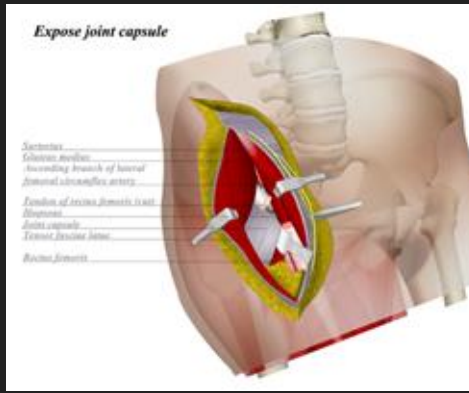


Anterior approach in brief

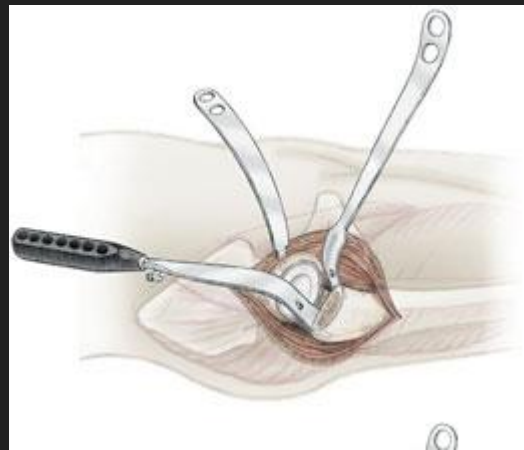
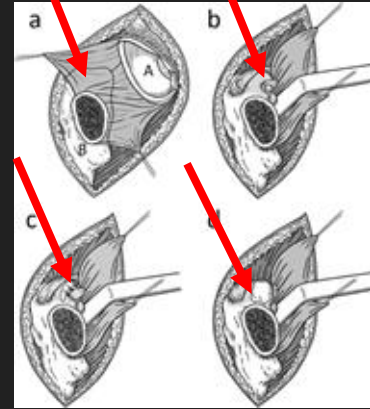
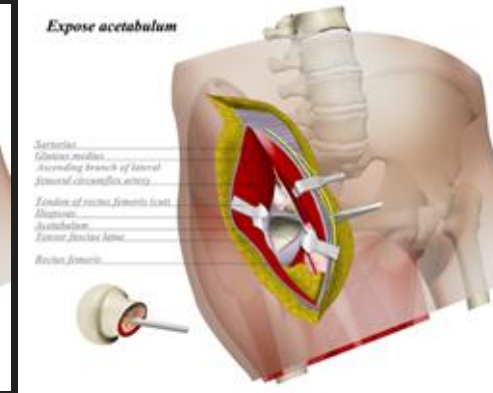
Superficial dissection



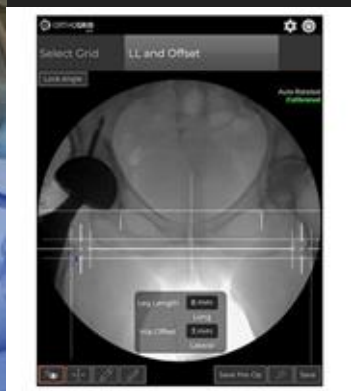
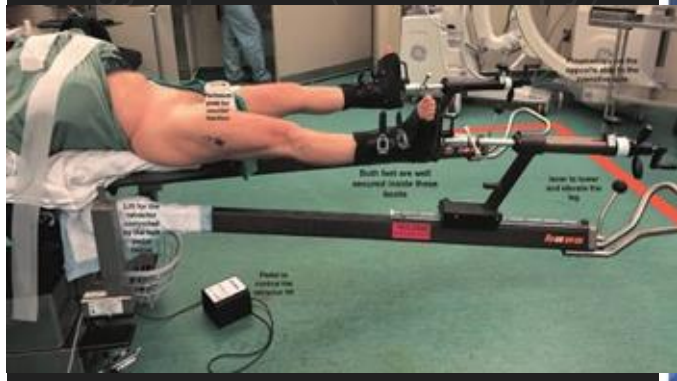
Expose joint capsule



Expose acetabulum



Technology options (fluoroscopy)



Disadvantages of Anterior Approach:

Body Type - Pannus sign

Wound Complications

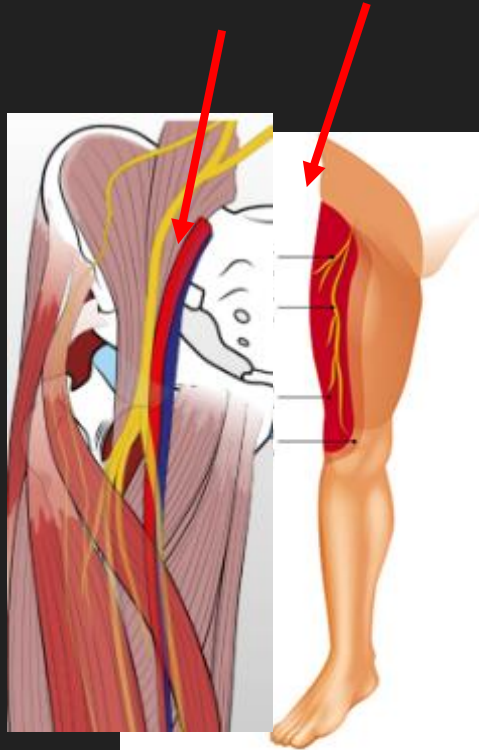
Femur Fracture

Femoral Artery Injury

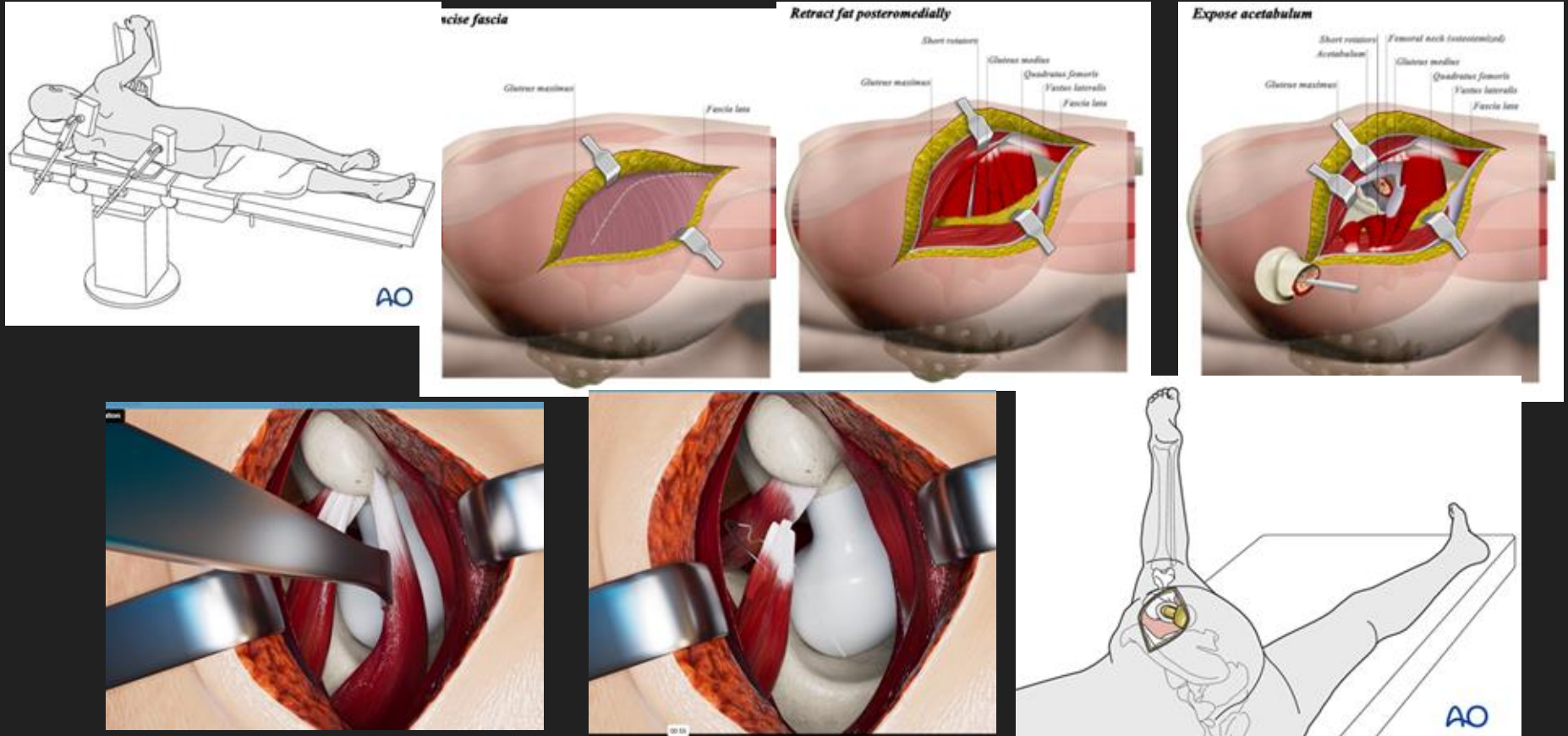
Femoral Nerve Injury

Meralgia paraesthetica

Non-extensile (difficult to handle complications)



Posterior approach in brief



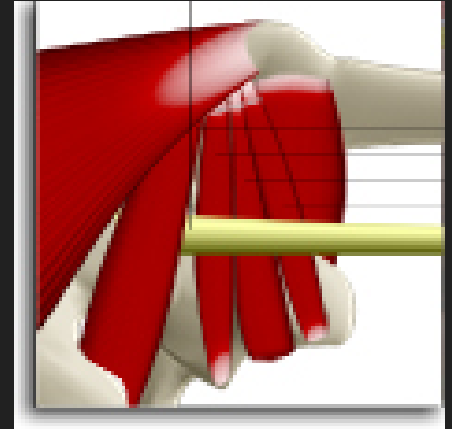
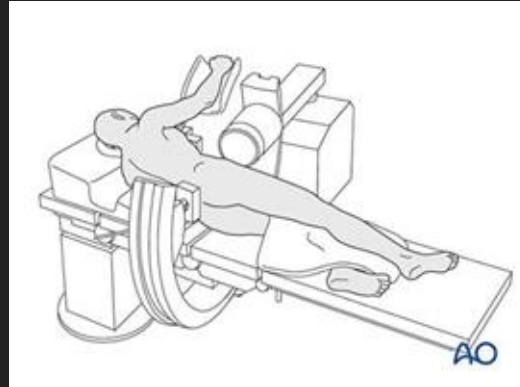
Disadvantages of Posterior Approach

The only drawback of modern posterior approach:

Fewer Technologies are compatible

(historically, accuracy problems = hip dislocation, recovery speed, leg length discrepancy , etc.)

Sciatic Nerve palsy



Outcomes depend on Accuracy

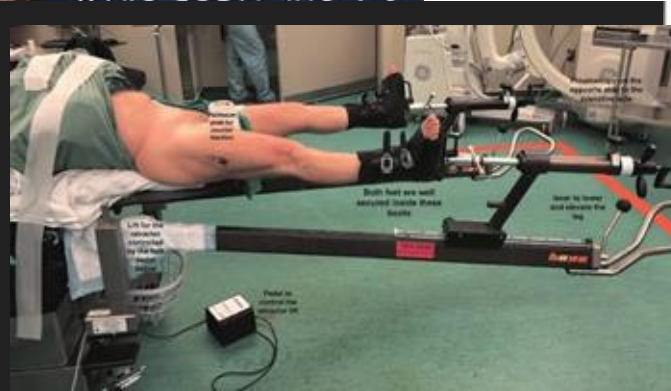
Anterior - was the first to be paired with reliable technology (fluoroscopy)

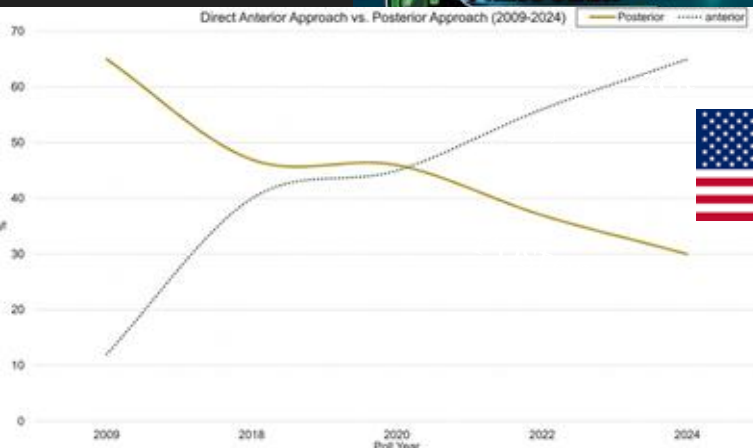


Posterior - most accurate technology is CT-robotics



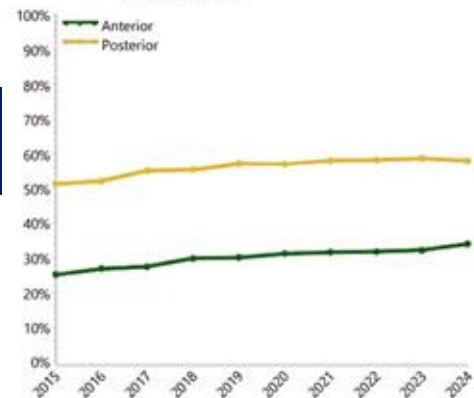
In 2026, **Robotic-posterior** and **Fluoro-anterior** when they do well do the same, posterior has fewer skin and nerve complications, but anterior has stronger corporate marketing





This Shift is only in USA!

Figure HT82 Primary Total Conventional Hip Replacement by Approach (Primary Diagnosis OA)



2. Non-Clinical Factors (The Drivers of Change)

Non-clinical factors have arguably become the biggest drivers of the "shift" toward the anterior approach over the last decade.

- **Direct-to-Consumer Marketing:** The anterior approach is marketed heavily as "minimally invasive" or the "new standard." Patients frequently consult surgeons specifically requesting the anterior approach because they have seen advertisements or social media content claiming it is the "best" way to get a new hip. Surgeons who do not offer it may lose market share.
- **Institutional and Commercial Pressure:** Hospitals have invested millions in the specialized equipment required for the anterior approach, such as "Hana" tables or specialized retractors. Once an institution makes this capital investment, there is significant internal pressure for orthopedic departments to utilize that technology to justify the ROI.
- **Surgeon Training and Mentorship:** In the US, the majority of orthopedic residents and fellows are now trained heavily in the anterior approach. A surgeon's preference is often a direct reflection of what they were taught during their most formative years.
- **"Branding" of the Surgeon:** In a competitive elective surgery market, branding matters. Offering "muscle-sparing anterior hip replacement" is a powerful differentiator for a private practice surgeon trying to attract active, younger, or "Type A" patients who prioritize speed of recovery.

Accuracy- technologies. It's not just dislocations

> J Arthroplasty. 2021 Aug;36(8):2801-2807. doi: 10.1016/j.arth.2021.02.074. Epub 2021 Mar 5.

Robotics Versus Navigation Versus Conventional Total Hip Arthroplasty: Does the Use of Technology Yield Superior Outcomes?

Vivek Singh ¹, John Realyvasquez ¹, Trevor Simcox ¹, Joshua C Rozell ¹, Ran Schwarzkopf ¹, Roy I Davidovitch ¹

Affiliations + expand

PMID: 33773864 DOI: 10.1016/j.arth.2021.02.074

> Arthroplast Today. 2024 May 11;27:101393. doi: 10.1016/j.artd.2024.101393. eCollection 2024 Jun.

Robot-Assisted Total Hip Arthroplasty Demonstrates Improved 90-Day Clinical and Patient-Reported Outcomes

Alana Prinos ¹, Weston Buehring ¹, Catherine Di Gangi ¹, Patrick Meere ¹, Morteza Meftah ¹, Matthew Hepinstall ¹

Affiliations + expand

PMID: 39071820 PMCID: PMC11282420 DOI: 10.1016/j.artd.2024.101393

Comparative Study > Orthopedics. 2024 Sep-Oct;47(5):289-294.
doi: 10.3928/01477447-20240702-03. Epub 2024 Jul 8.

Opioid Use After Robotic-Assisted Versus Conventional Total Hip Arthroplasty: A National Database Analysis

Thompson Zhuang, Bill Young, Jessica Hooper, Derek F Amanatullah, Lauren Shapiro, Robin N Kamal

PMID: 38976847 DOI: 10.3928/01477447-20240702-03

Shorter hospital stays

Improved PROM

Lower opioid use



Potential Benefits of ANTERIOR ADVANTAGE™ Hip Replacement

ANTERIOR ADVANTAGE™ Hip Replacement patients may:

- Spend less time in the hospital^{1,2,5,12,16}
- Have a faster recovery^{2,5,11,16}
- Experience less pain^{2,5,11}
- Use less narcotics to relieve pain after surgery^{1,2,16}

THEY'RE THE SAME CLAIMS!

Mean length of Stay is now 1.1 days, and 92% are going straight home

Figure 2.3 Mean Length of Stay for Hip Arthroplasty Procedures, 2012-2024 (N=1,229,671)

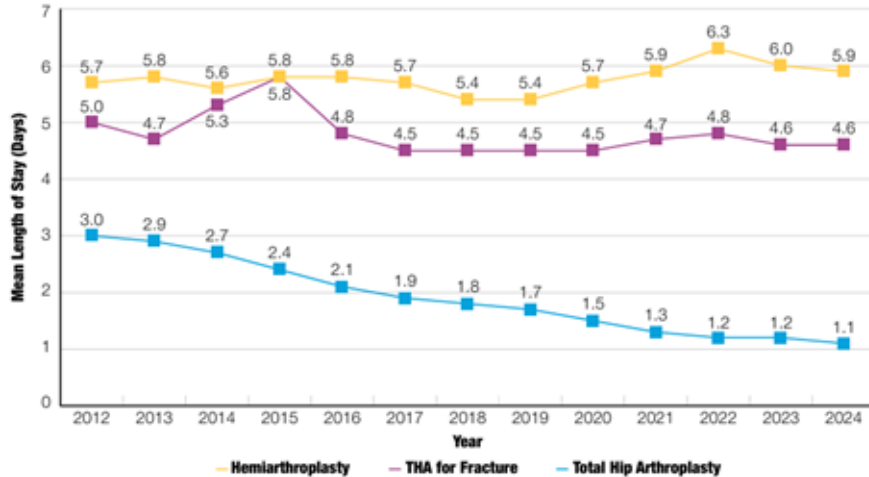
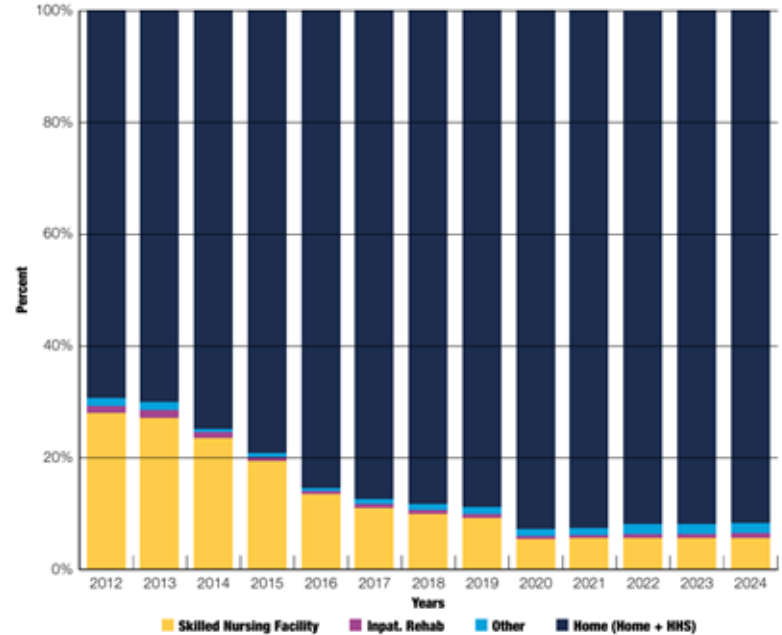


Figure 2.23 Total Hip Arthroplasty Discharge Disposition Codes by Year, 2012-2024 (N=1,008,251)



MEDICAL OPTIMIZATION FOR TOTAL JOINT REPLACEMENT

MODIFIABLE RISK FACTORS

- ✓ Smoking cessation
- ✓ Exercise/resistance training
- ✓ Glycemic control
- ✓ Nutritional optimization
- ✓ Weight management
- ✓ Opioid reduction
- ✓ Anemia correction
- ✓ Staph Aureus decolonization
- ✓ Bone density

The optimization “goodie bag”

*A.k.a. Ortho’s idea of
“holistic medicine”*



Final Takeaways for PCP?

1. Hip regional pain has numerous causes, many intrinsic, but also many extrinsic (outside of the hip)
 - a. They're not mutually exclusive
 - b. Treatment begins empirically as NSAIDS and PT for almost all hip and lower back maladies
 - c. The mental health component confounds significantly
2. Most intrinsic causes (inside the hip joint) will end up with THA , either now or later
 - a. But the reason is because of the durability of treatment and the limitations of preservation surgeries to date.
3. MRI's are okay to get especially after a basic x-ray and a trial of conservative empiric treatments
4. Posterior and Anterior Hips do equally well in the big picture of things as long as the surgeon is practicing modern techniques.
 - a. Deciding points now lie between residual clinical factors (scar location, skin nerve injury and wound risk acceptance) vs. Non-clinical factors (word-of mouth and advertising).
5. PCP's can help best help with
 - a. Recognition and optimization of confounders and risk factors (Back, Spine, Mental, Weight, Diabetes, smoking)
 - b. Initiation of first steps of conservative treatment (PT, NSAIDS) that would be required for escalation of care
 - c. Reinforcing clinical equivalence between modern replacement techniques.

Thank you!

