

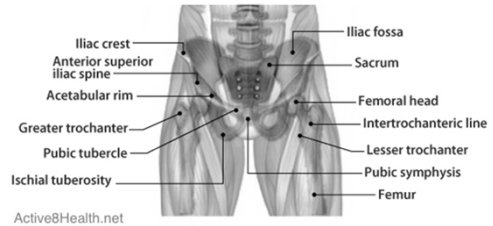
Rehabilitation of Hip Labral Tears

K. René Thiebaud, PhD, PT
The Orthopedic Store Physical
Therapy



Anatomy of the Hip & Pelvis

Skeletal Anatomy of the Hip & Pelvis



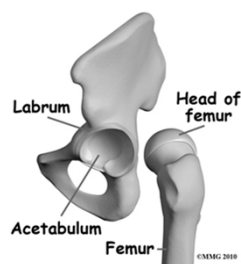
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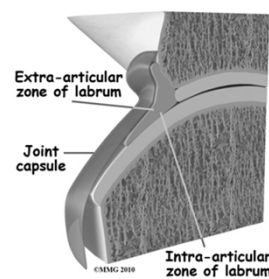
Anatomy of the Labrum

❖ Acetabular labrum

- Fibrous rim of cartilage around the hip socket
- Function
 - ❖ Provides stability to the joint
 - ❖ Management of the flow of vital joint fluids
 - > Nourishment
 - > Lubrication



Zones of the Labrum



- ❖ Extra-articular zone has good blood supply
- ❖ Intra-articular zone has poor blood supply



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Symptoms

- ❖ Onset of symptoms typically insidious
 - Hip or groin pain, often radiates
 - Intra-articular snapping hip syndrome (~ 80% of the time)
 - Clicking
 - Giving way
 - Locking/catching
 - Trendelenburg gait



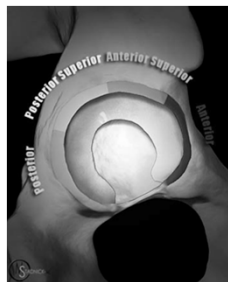
Symptoms

- ❖ Onset of symptoms (cont.)
 - Stiffness
 - Limited ROM
 - Pain with increased sitting
 - Pain with twisting/cutting/explosive outbursts



Causes/Mechanism of Injury

- ❖ Primary cause: femoral acetabular impingement (FAI) – anterior superior labrum is pinched
- ❖ Repetitive twisting, cutting, pivoting & hip flexion



Causes/Mechanism of Injury

- ❖ Capsular laxity/joint hypermobility
- ❖ Hip dysplasia
- ❖ Degenerative changes
- ❖ Anatomical/Structural
 - Abnormal shape/structure of the acetabulum, labrum, femoral head
- ❖ Muscle weakness



Diagnosis

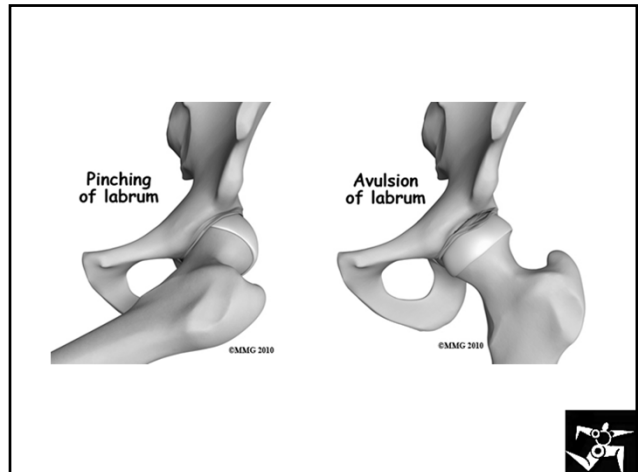
❖ Orthoscopic Exam

- Most reliable
- 100% accurate

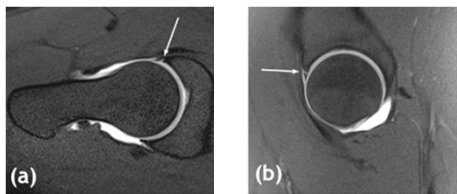
❖ MRI

❖ Magnetic Resonance Arthrography (MRA)

- Provides in-vivo image of the hip joint which is often difficult to visualize secondary to depth of articulation
- Now the "**GOLD STANDARD**"



MR Arthrogram (MRA)



Oblique axial (a) and sagittal (b) MR arthrogram of the right hip showing a detached tear of the anterior labrum (arrows).



Conservative Therapy

❖ Goal:

- Relieve pain
- Improve function
- Correct muscle instability



Conservative Therapy

- ❖ Activity modification
 - Avoid pivoting/cutting
 - Avoid prolonged weight bearing activities
- ❖ Physical Therapy
 - Stretching and flexibility exercises
 - Strengthening hip muscles
 - Restore neuromuscular control
 - Improve posture
- ❖ Intra-articular injection



Non-surgical Rehabilitation

- ❖ Strengthening exercises
 - Standing hip flexion/extension/ABD/ADD with progressive loading (resistance bands)
 - Lunges
 - Leg press/total gym
- ❖ Stabilization exercises
 - Lumbopelvic stabilization
 - ◊ Bridges, Mini-squats



Non-surgical Rehabilitation

- ❖ Balance/Proprioception
 - Single leg stand
 - Balance board

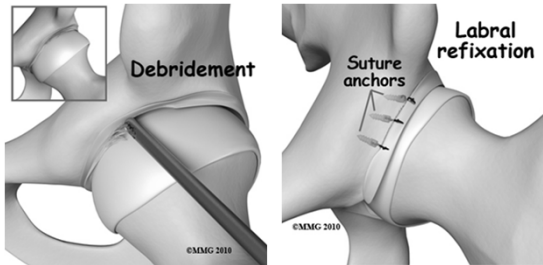


Surgical Intervention

- ❖ Signs or Symptoms > 4 weeks
- ❖ MRI or MRA
- ❖ Acetabular labral lesion – debridement or repair
- ❖ Dr. Wolff repair video
 - <http://www.andrewwolffmd.com/understanding-non-arthritic-hip-pain-andrew-b-wolff.html>



Surgical Intervention



Surgical Rehabilitation

- ❖ Primary goals following surgery:
 - Minimize pain and inflammation
 - Protect surgically repaired tissue
 - Initiate early motion



Surgical Rehabilitation

- ❖ Stretching/Flexibility
 - Piriformis, psoas, quadriceps, hamstrings
- ❖ Strengthen hip ABDuctors, ADDuctors, & extensors
 - Begin with isometrics with lower extremity in neutral
 - Progress to include isotonic and core strength
- ❖ Gait training
- ❖ Balance/Proprioception exercises



Surgical Rehabilitation

- ❖ Proaxis Therapy
 - Labral debridement and labral repair
 - See patient checklist in Garrison, et al. reference



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Dr. Muller's Protocol

Phase	I
Time frame	Post-OP days 1 – 14
Goals	<ul style="list-style-type: none"> • Protect healing tissue • Normalize gait pattern
Precautions	<ul style="list-style-type: none"> • Crutches, 25% WB • Minimize scarring/swelling • Caution with stairs/prolonged ambulation
Exercises	<ul style="list-style-type: none"> • Pain control/Cryotherapy • Scar mob/STM/Stretching – piriformis/HS • Progress PROM <ul style="list-style-type: none"> • Week 1 – flexion 0 to 100°, Week 2 – flexion 120° • ABD, ADD as tolerated • Avoid forced hip external rotation, • Avoid hip rotation with hip flexed >90° • Standing internal rotation, prone rotations, circumduction • Prone extensions & hamstring curls after week 2 • Isometrics – gluts, quads, HS, abdominals, ABD, ADD (avoid flexors) • Stationary bike – low resistance after week 1; 20 minutes BID as tolerated

Dr. Muller's Protocol

Phase	II
Time frame	Post-OP day 14 to week 4
Goals	Progress hip ROM
Precautions	Avoid hip flexor tendonitis and trochanteric bursitis
Exercises	<ul style="list-style-type: none"> • Continue therapeutic exercises • Progress PROM as tolerated • Progress strengthening and isotonic <ul style="list-style-type: none"> • Isotonics all hip muscle groups except hip flexor • Sidelying clams, bridging, sidelying leg raise • Modalities prn – E-stim, US • Begin pool therapy when portal sites well healed • CV – stationary bike low resistance – advance time, add elliptical

Dr. Muller's Protocol

Phase	III
Time frame	Weeks 4 – 10
Goals	<ul style="list-style-type: none"> • Progress hip strengthening • Early restoration of balance/ proprioception
Precautions	Avoid hip flexor tendonitis and trochanteric bursitis
Exercises	<ul style="list-style-type: none"> • Continue therapeutic exercise • Full PROM – hip flexor & ITB stretching • Progress strengthening <ul style="list-style-type: none"> • Add hip flexor isotonic, begin short-lever hip flex • Add leg press, begin bilateral, then unilateral • Side stepping with theraband • Core strengthening – frontal and side planks • Begin proprioception – bilateral, then unilateral, advance as tolerated • Advance elliptical • Add stair stepper

Dr. Muller's Protocol

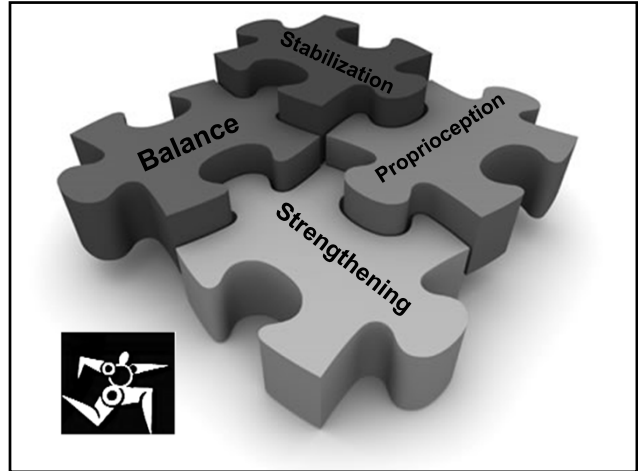
Phase	IV
Time frame	Weeks 10 – 14
Goals	Increase functional activity
Precautions	Do not start Phase IV until full ROM, good core/hip strength and acceptable balance
Exercises	<ul style="list-style-type: none"> • Continue therapeutic exercise • Progressive core & bilateral LE strengthening • Outdoor bike and jog, then light running • Improve endurance



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Dr. Mueller's Protocol

Phase	V	VI
Time frame	Weeks 14 – 18	Beyond week 18 – Return to sport
Exercises	<ul style="list-style-type: none"> • Lunges, single leg squats, plyometrics • Agility drills – lateral, diagonal • Begin functional exercises • Progress running program – sprinting, cutting 	<ul style="list-style-type: none"> • Advance functional exercises • Sport specific agility drills • Training



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