Assessing and Treating the Restricted Hip

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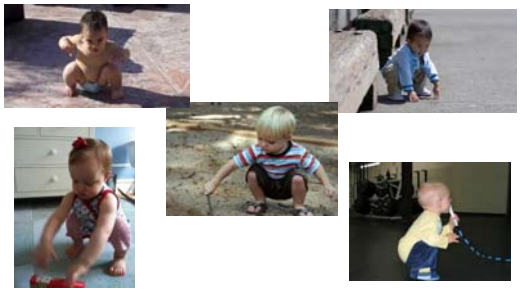
Objectives

- Attendees will understand the importance of hip mobility and how a lack of hip motion can affect function within the kinetic chain
- Attendees will demonstrate the ability to assess hip joint mobility to determine the appropriateness for therapeutic intervention
- Attendees will be able to design a program to improve hip mobility including joint mobilizations and therapeutic exercises for the hip

When did this become bad?



and how does this become that?

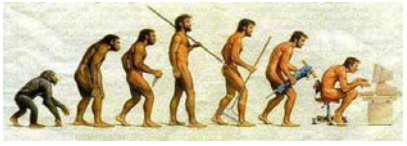
Neurodevelopment

- As baby's we have tremendous amount of joint mobility
- We maintain this as children through play
- As adults we start to loose mobility mostly due to positional and postural habits

DNS
Motor Control for Life

The Adult Hip

- Generally has poor mobility
- Result of:
  - Sitting posture
  - Lack of squatting
- Causes:
  - Decreased length in hip flexors
  - Reciprocal inhibition of the gluteal muscles



The Athletic Hip

- FMS administered to all incoming and transfer athletes at UIndy Fall 2012
  - Average deep squat score: 2.04
    - Football: 2.14
    - Men's Soccer: 1.20
    - Volleyball: 1.42
    - Women's Soccer: 1.75

Sequelae of Hip Hypomobility

- Changes in functional movement
  - Increased mobility needed above and below
    - Increased lumbar spine/SI joint mobility and increased lordosis
    - Increased mobility in the knee and lower kinetic chain
  - Increased muscular activation in hamstrings, piriformis, erector spinae

Sequelae of Hip Hypomobility

- Changes in athletic performance
  - Decreased strength
  - Decreased power
  - Decreased speed

  - Limits potential exercises that can be performed in the weight room

Assessment of Hip Mobility

- History and Observation!
- Deep Squat Movement Test
- Table Mobility Assessment

Movement Assessment:

Squat Test

- Have your athlete stand with feet shoulder width apart and arms overhead. Instruct them to squat and look to see if they can maintain upright posture, hip/knee/ankle alignment and feet flat on the floor

Table Assessment:

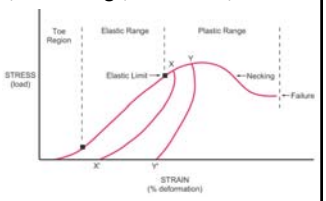
Supine Mobility

- Look at passive motion:
  - Hip flexion
  - Hip flexion/adduction
  - Hip flexion/abduction
  - Hip internal rotation
  - Hip external rotation
  - Hip extension

- Note ROM, end-feel, quality of motion, restrictions present

Treating Hip Mobility

- Lots of options…
  - Stretching of hip flexor, hamstrings, adductors, IT band, quadriceps
  - Foam roller
  - Therapeutic exercise (capsular)



- But…
  - Do these really treat ALL of the problem?

Treating Hip Mobility

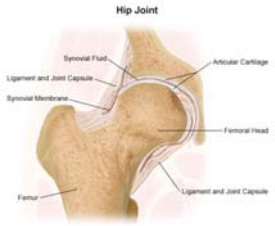
- Due to hip joint structure (deep articulating ball-and-socket) and muscle bulk, mobilization of the joint is needed to provide a lasting change

Effects of Joint Mobilization

- Mechanical effects
  - Improves mobility
- Neurophysiological effects
  - Stimulates mechanoreceptors to decrease pain
- Nutritional effects
  - Improved synovial fluid movement and nutrient exchange in articular cartilage

The Hip Joint

- Concave acetabulum and convex femoral head
- Designed for stability



Static Hip Mobilizations

- Lateral Glide
  - Technique for general mobility and/or pain control
- Posterior Glide
  - Used to increase hip flexion and internal rotation
- Anterior Glide
  - Used to increase hip extension and external rotation
- Inferior Glide
  - Used to increase hip flexion or rotation

Mobilizations with Movement (MWM)

- Mulligan concept of introducing dynamic motion as the mobilization is performed
  - Advantage:
    - Can move into the restriction while performing mobilization
    - Neural pathways activated when active motion is applied
    - Athlete can get immediate "positive" feedback – comparable sign

How do you follow-up?

- After mobilizing the joint, need to follow-up with mobility exercises
  - Reinforce the new mobility gained and new movement pattern
  - Home program vs. in clinic/athletic training room
- Correct underlying postural deficiencies
- Rebalance the joint (if needed)

Setting up the Belt

- Know the type of belt you're working with

- Clinician body mechanics
  - Set up belt to wrap around patient's proximal thigh and your hips/greater trochanter

Hip Lateral Glide

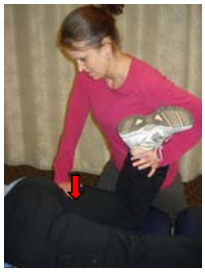
- Good ***general*** technique to loosen capsule and improve general mobility, control pain
- Sit backward into hips, but keep good stance

Hip Posterior Glide

- Increase hip flexion or internal rotation
- Hip flexed, adducted, and slightly externally rotated with foot on table
- Use hand across table to apply downward into hip toward table

Hip Anterior Glide

- Increase hip extension or external rotation
- Hip neutral position
  - Can bias capsule by addition of IR/ER
- Apply force at gluteal fold in anterior direction
  - Beware of pain in the low back! (may need to flex the hip)



Hip Inferior Glide

- Inferior glide with hip flexed places stress into posterior-inferior joint capsule
- Helps to increase hip flexion and rotation

Dynamic Hip Mobilizations

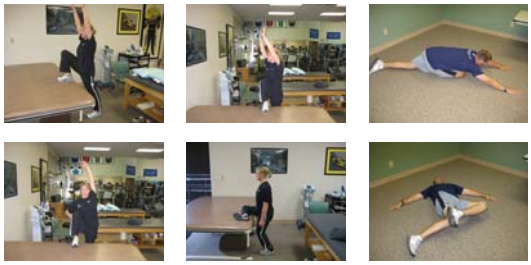
- In general:
  - Movement of the joint should be through the full ROM if possible
  - Perform 5-10 repetitions (passive and then active-assisted)
  - Take care of the skin (belt)

Dynamic Hip Flexion Mobilization

Dynamic Hip Internal Rotation Mobilization

Dynamic Hip External Rotation Mobilization

Hip Dynamic Mobility Exercises



Hip Dynamic Mobility Exercises

- Leg swings
  - Front/back
  - Lateral/across body

Hip Dynamic Mobility Exercises

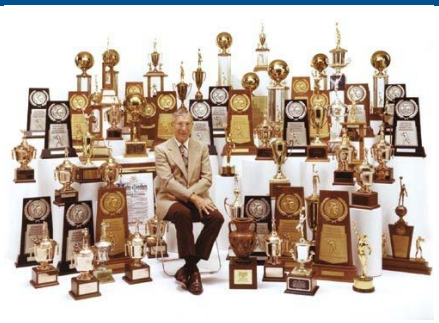
- Hurdle step over/under drills
  - Forward
  - Lateral
  - Backward
  - Alternating
  - Squatting

Summary

- Practice mobilization to refine technique
- Apply according to treatment parameters and patient goals
- Use good body mechanics to apply the most effective treatment and protect yourself
- Follow up with mobility exercises to maximize benefits

Don't Ever Mistake Activity for Achievement!

- John Wooden



Questions?

Thank you for attending!

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References/Suggested Readings

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