FAIS Can be Treated Without Surgery

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Disclosures

- None
- Special thanks to Donald Neumann
  - Kinesiology of the Musculoskeletal System. 2017

Objectives

- Gain knowledge on conservative options for FAIS
- Identify provocative postures and common gait deviations in patients with hip pain
- Understand the effect of gait deviations on the kinetic chain
- Understand how to correct common provocative postures and gait deviations

Conservative options

- NSAIDS: prescription or OTC
- Activity modification
  - Rest from sports, running, avoid sitting long periods
- Physical therapy
  - Typically 6-8 week trial
- Intra-articular injection
  - If not responding to the above and in conjunction with more PT

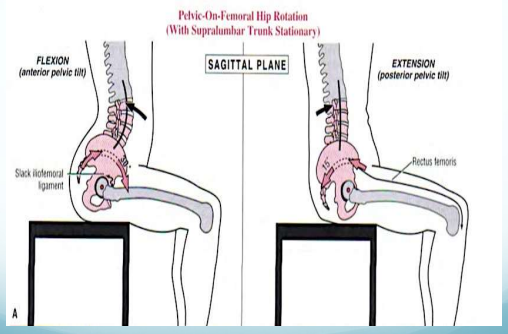
Traditional PT

- What do you imagine?

What are we forgetting?

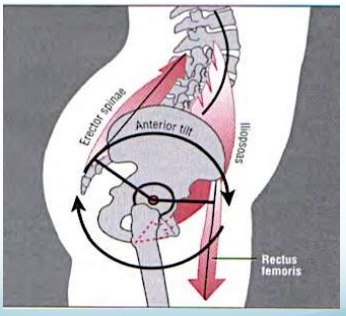
- Gait
- Biomechanics and kinesiology
- Individualized approach
- Realistic expectations and goals
- Patient education

Static postures



Neumann 2017

Static postures



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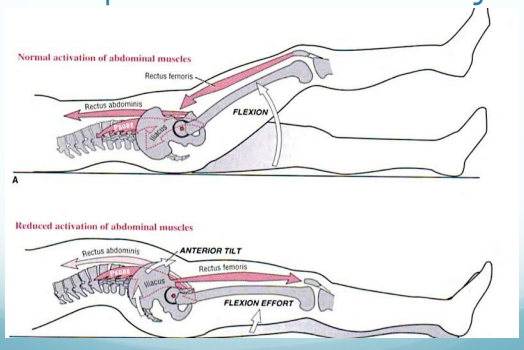
Simple Functional Mobility



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Cam/Pincer on Radiographs

- APT=increased cross-over sign, PPT=decrease
- 10° change in pelvic tilt=loss/gain of hip ROM

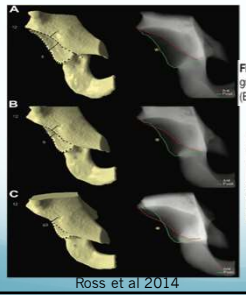
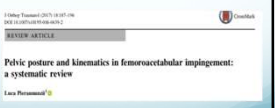


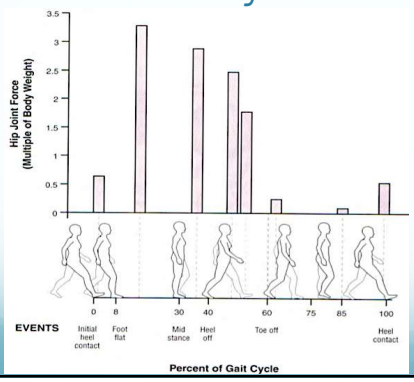
Figure 1. Patient example demonstrating the virtual radiograph and three-dimensional model of the hip in (A) posterior (B) native, and (C) anterior pelvic tilt positions.



Pelvic posture and kinematics in femoroacetabular impingement: a systematic review

Ross et al 2014

Gait Cycle



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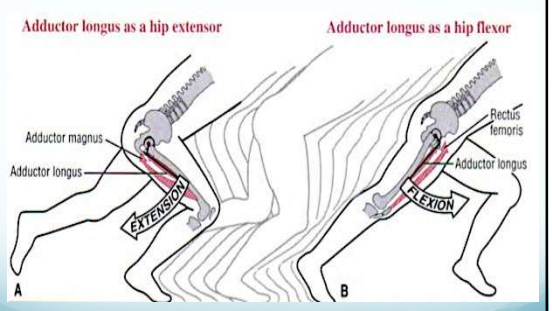
Gait in FAIS

- Common compensations
  - Early Stance: Pelvic rise, trunk lean
  - Late Stance/Pre-Swing: Post pelvic rotation, lack of DF, hip and MTP ext
    - Passive propulsion preparing for swing reduced
  - Swing Phase: Excessive hip ER to IR/circumduction, lack of hip flexion, reduced trunk rotation and arm swing, decreased step length
    - Adductors and TFL must compensate

Gait in FAIS

- Results in increased energy expenditure, greater muscle activation required, and PAIN
- Neuromuscular movement patterns change
  - Greater usage of anterior/medial hip musculature
  - Reduced activation of posterior/lateral hip musculature
- Shuts down muscles
  - Gluteals
  - Gastroc/soleus
  - Obliques

Gait in FAIS



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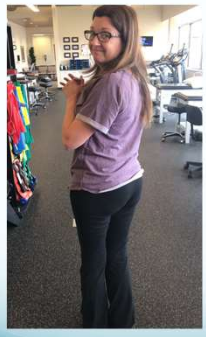

How to correct

- Tactile cues=Use your hands
- Targeted exercise
- Patient education and homework
- Realistic expectations

Current Literature

- The effects of cam femoroacetabular impingement corrective surgery on lower-extremity gait biomechanics
  - Brisson- *Gait and Posture 2013*
- HIPARTI and HARP projects
  - Risberg- *JOSPT 2018*
- Kinematic Differences During Single-Leg Step-Down Between Individuals with Femoroacetabular Impingement Syndrome and Individuals without Hip Pain
  - Lewis- *JOSPT* 2018
- Pelvis and Hip biomechanics in Individuals with Femoroacetabular Impingement Syndrome: Strategies for Step Ascent
  - Diamond- *Gait and Posture 2018*

Thank you

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