

FAI Syndrome

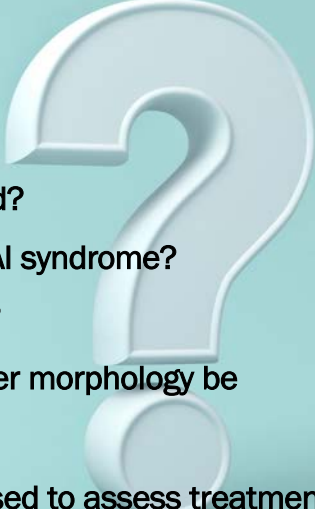
- Victoria Smith Specialist Hip Physiotherapist CPS/SMSK/Ortho

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## Warwick Agreement

6 Questions were discussed:

1. What is FAI syndrome?
2. How should FAI syndrome be diagnosed?
3. What is the appropriate treatment of FAI syndrome?
4. What is the prognosis of FAI syndrome?
5. How should asymptomatic cam or pincer morphology be managed?
6. Which outcome measures should be used to assess treatment?



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### 1. What is FAI Syndrome

- FAI syndrome is a motion-related clinical disorder of the hip with a triad of symptoms, clinical signs and imaging findings. It represents symptomatic premature contact between the proximal femur and the acetabulum.

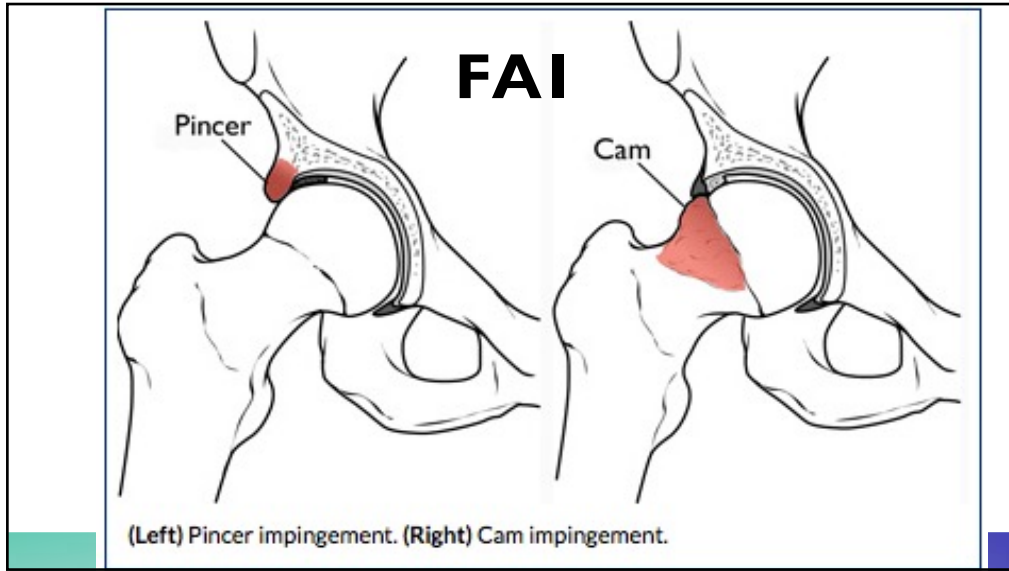
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### Anatomy and type of FAI

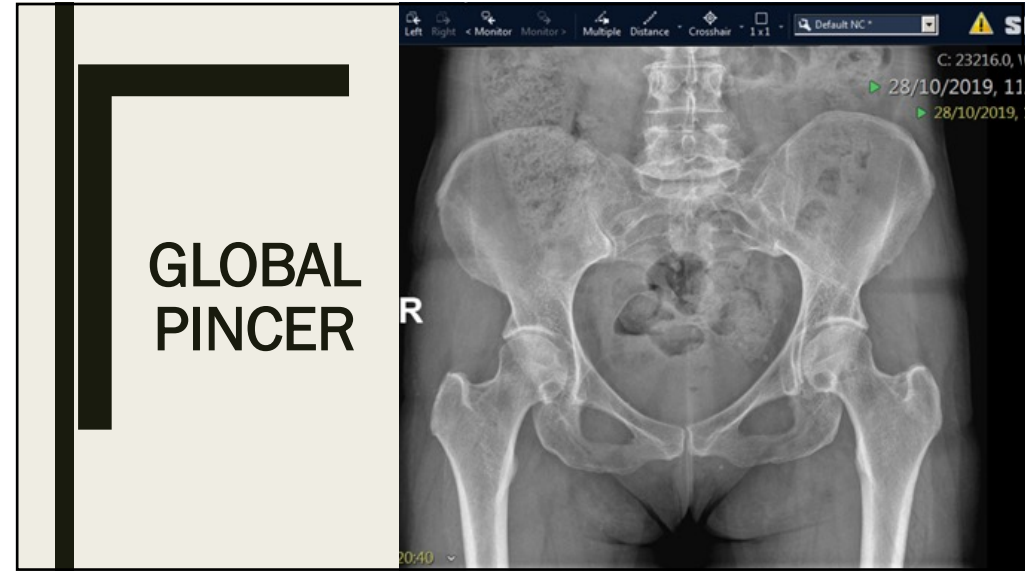
“Normal” hip



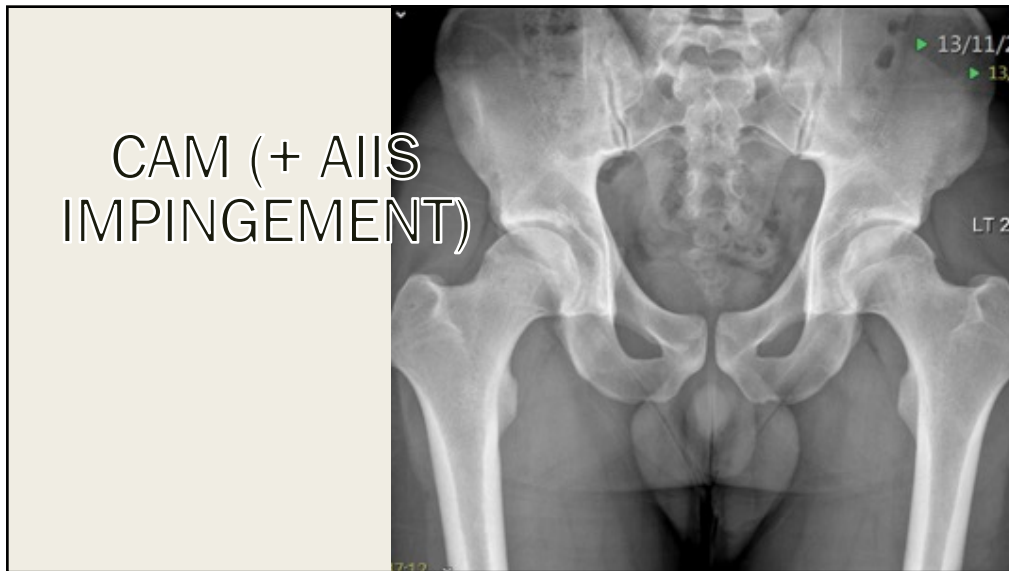
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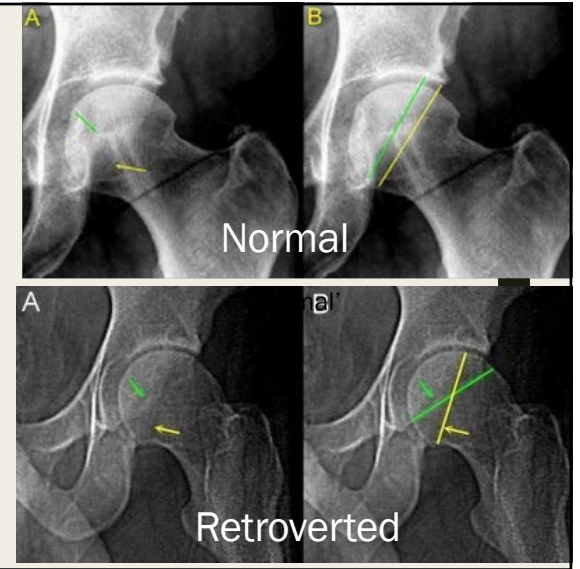
## ALPHA ANGLE

Alpha angle: Is the angle between the middle line of the NOF and the femoral head/neck junction

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## RETROVERTED ACETABULUM

Acetabular retroversion (AR) consists of a malorientation of the acetabulum in the sagittal plane.



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## SUBJECTIVE

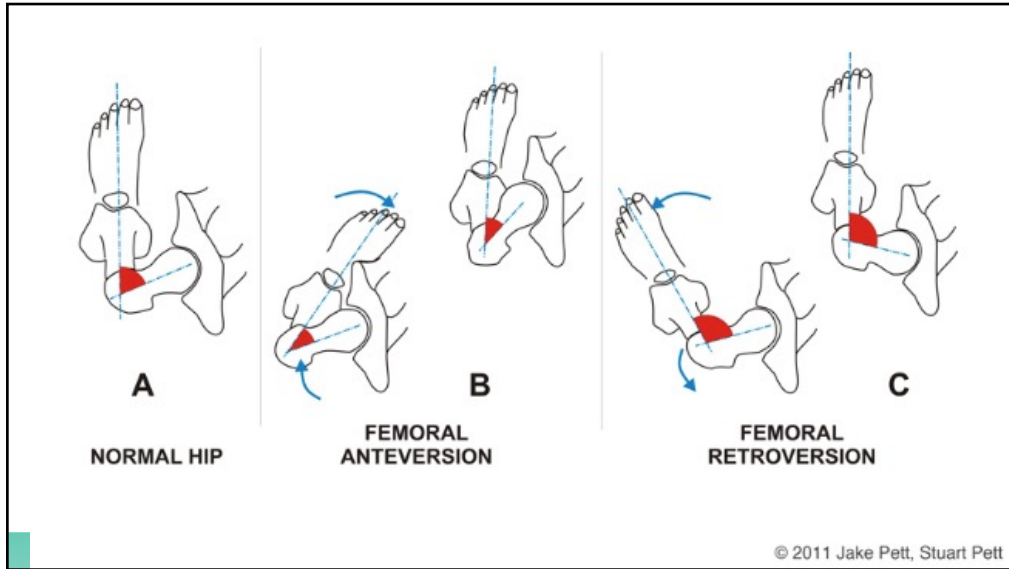
- Pain patterns
  - Groin
  - C-sign
  - Lateral
  - Posterior
  - Referred
- Aggs and eases: impingement type activities
- Locking, clunking, giving way, catching, reduced ROM
- Red flags

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## HIP ASSESSMENT

- Leg length
- Log rolling in extension
- Rotation profile in flexion
- Range of motion (quality of flexion)
- Reduced ROM flexion/ IR
- Anteversion/retroversion (femoral)
- FADIR (Sensitive not specific) – FABER
- Thomas Test
- Muscle strength and endurance

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# DIAGNOSTIC IMAGING

- X-Ray AP Pelvis for Hips and lateral
- MRI hips- angles need to be requested: acetabular/ alpha/ femoral version

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## ONWARD REFERRAL

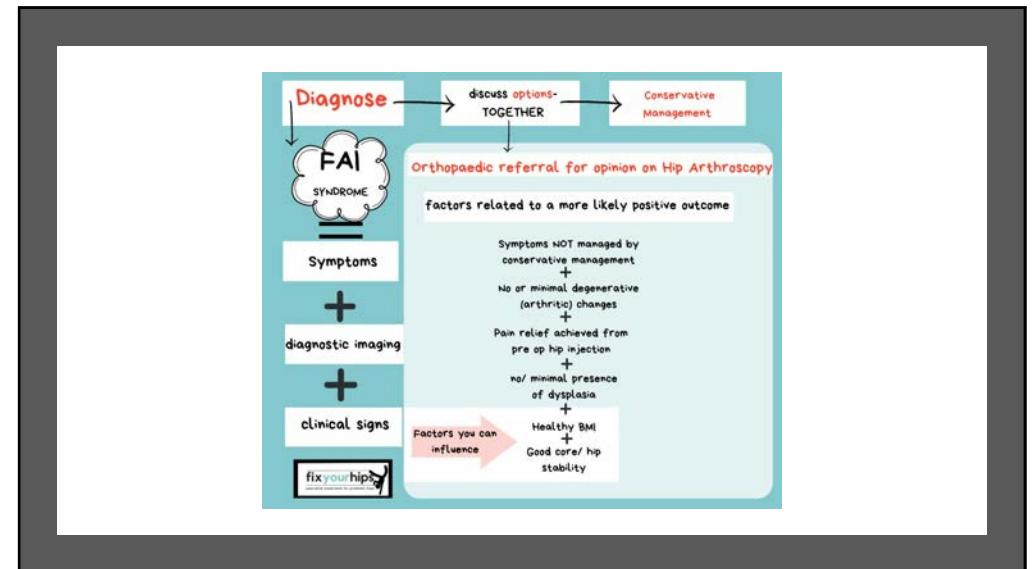
Differentials required.

Irritability despite selective rest/analgesics/activity modification

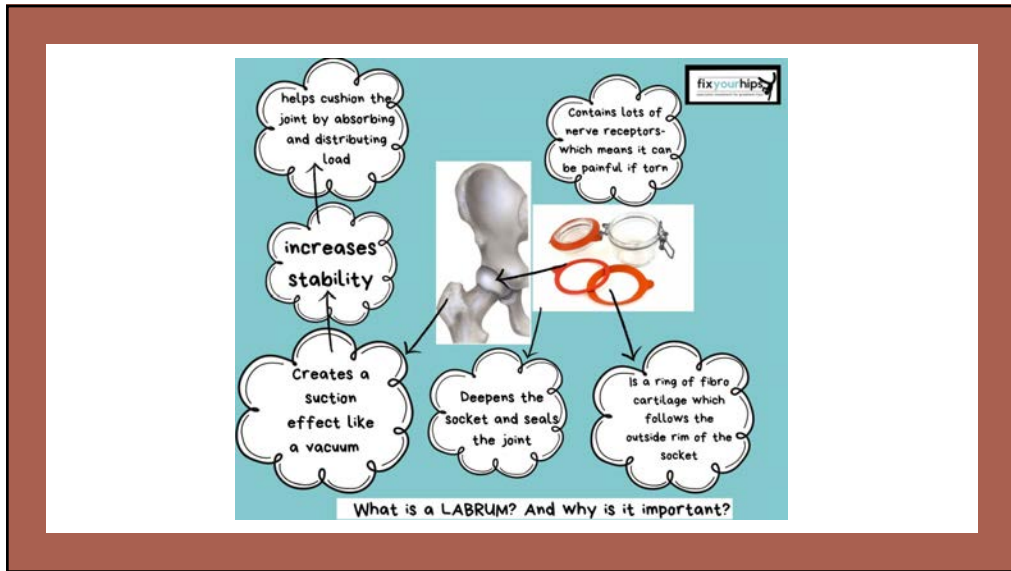
Red flags (urgent)

Unable to reach appropriate timed goals (discuss each goal)

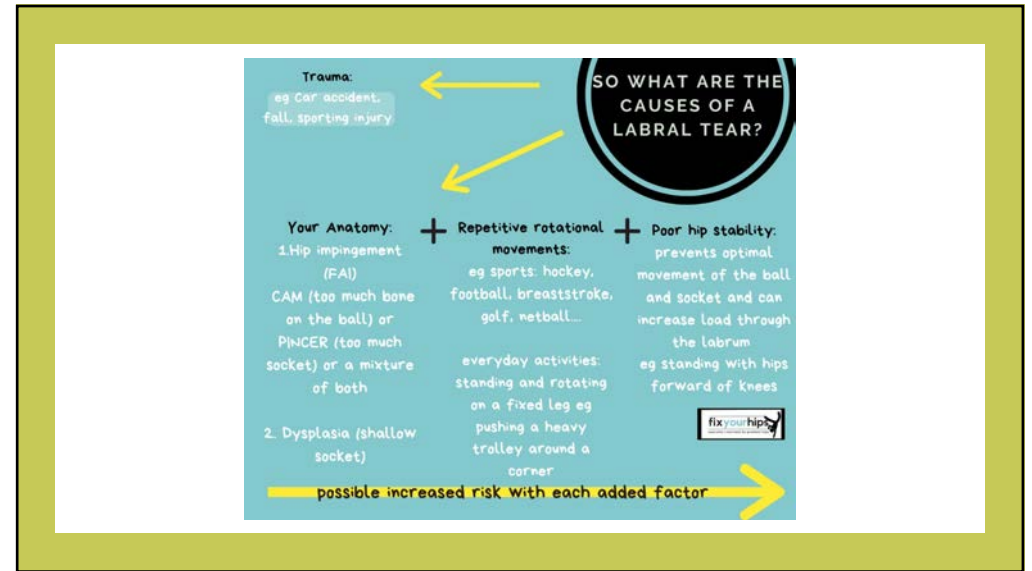
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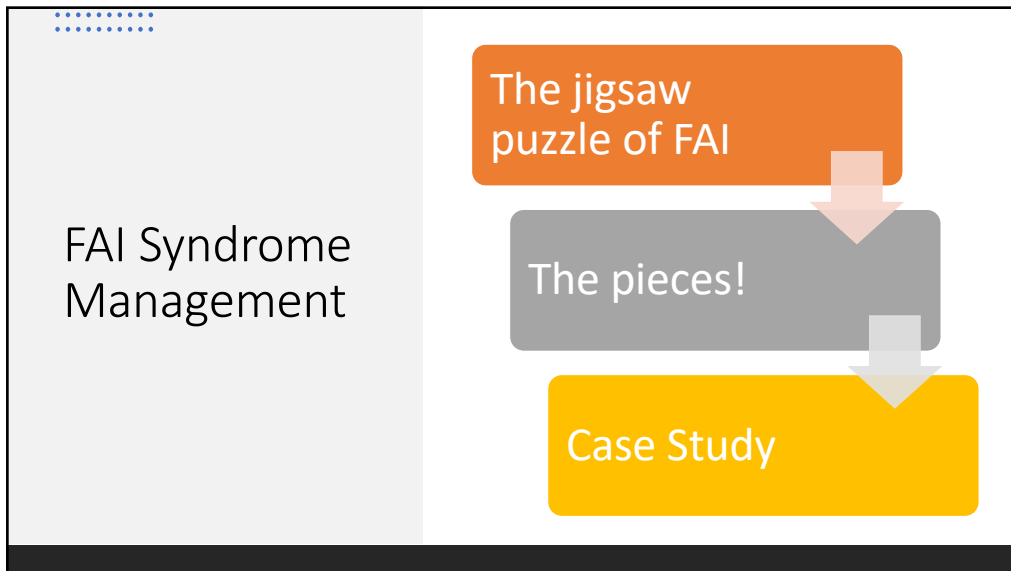
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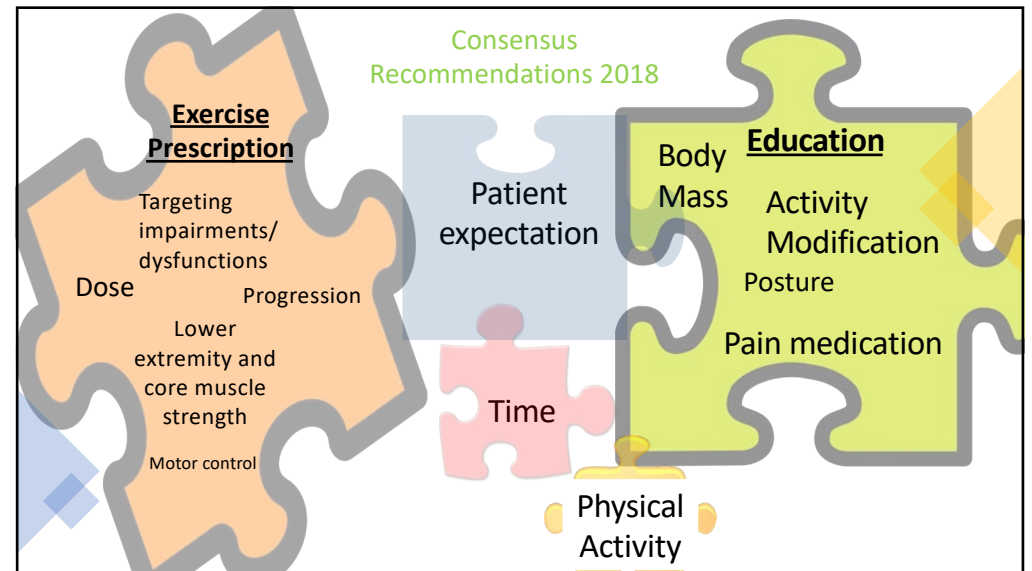
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## TIME

- Most RCT's 6/52 rehab programme
- At least 3/12 to be effective
- Strengthening Component
- Manage Time expectation of patient (and clinician)
- Buy In



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## Manage Expectation: First step to an engaged patient

- Get their thoughts out there! Previous Journey?
- Think it is? Need? Understand?
- Identify their education needs around FAI
- Reality Check: Exercise programme needs to be done very regularly!
- Need to apply activity modification ASAP
- Ongoing maintenance programme
- Flares
- Goal Setting
- Make a PLAN\*

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## Education

- Multi Faceted
- Patient Understanding
- Explanation of FAIS
- Discuss options of Mx (SDM)
- Rehab Win Win!\*
- Weight Win Win!
- Pain medication
- Aids

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## Education: Activity Modification

Use subjective Ax to understand their life

Drill down on everyday activities

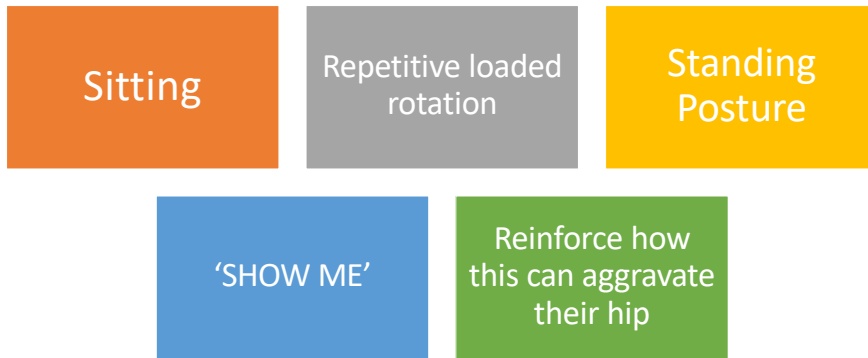
Correlate with diagnosis

Explain WHY certain movements/ position can aggravate symptoms\*.

Offer Solutions

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## Common Aggravatory Activities



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Listen to AGGS – optimise the posture to offload the hip.

Think about what the most common aggravating factors are

Do you currently spend time investigating how they do these activities?

Do you get them to demonstrate and establish muscle activity/ pain presentation?

Do you test out changing the posture and establish if you can change muscle activity/ pain?

Do you put an action plan in place to change habits/ postures/ activities?

PITFALLS -  
LIFESTYLE / POSTURE

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## Physical Activity



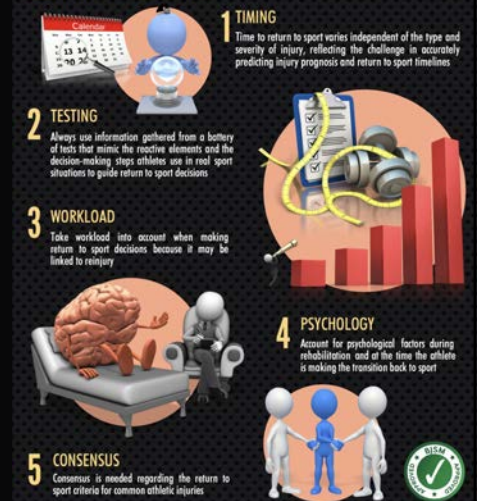
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## Consider these 5 elements if returning to sport

### 2016 Consensus statement on return to sport

Reference: by Clare L Ardern et al. BJSM 2016

Designed by eYLMSportScience



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## What should a rehab programme for FAIS include?

- Hip Strength
- Hip stability
- Trunk Strength
- Functional and balance retraining
- Cardiovascular
- Optimise ROM
- Progressive

• Kemp et al 2017, Freke et al 2016 Hatton et al 2014

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## Factors to Consider with Exercise Choice

- Understand what you are trying to achieve\*
- Observe, Feel, ASK
- Consider FAI Anatomy
- Irritability: low load, safe position. Build trust.
- Dose: Functional retraining v Strength. Specific.
- Progression
- Sporty young looking people
- Lifestyle

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## PITFALLS – EXERCISE SPECIFICITY

- Beyond bridging, lunge walk, crab walk and oysters!
- Muscle layering
- Diaphragmatic breathing
- Core and dissociation of pelvis from hips.
- Deep glutes. Avoid upper glute max dominance (LBP common)
- Lateral glutes, adductors and iliopsoas/ iliocapsularis.
- Stretch with caution – TFL, rec fem, hip flexors.

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## EXERCISE PRESCRIPTION

- Motor control
- Activation,
- Isometrics 40-70%MVC, 45-60s x5, 5/day – SLS is achievable PWBing or FWBing.
- Consider postures to enhance isolation and reduce pain before reverting to functional tasks
- Strength – build loading with less reps. 6RM, x3-5 sets , 3x week.
- Fear avoidance/ confidence/ flare management
- Sports/ lifestyle specific, utilise kinetic chain, foot posture

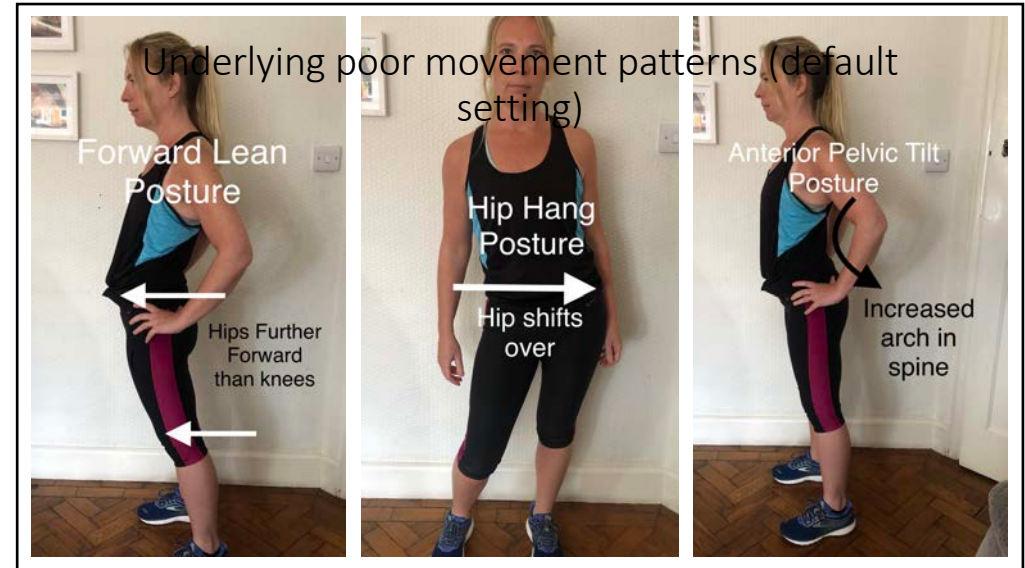
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# PITFALLS – GRIPPERS!!

- **Subjective giveaways** – stiff to get going, needing to tense legs, muscles feel tired or constant ache
- **Objective giveaways** – increased tone. Crook lie fall out has fixed static limb. Lots of exercises are uncomfortable, often TFL tenderness, **CAN'T RELAX** hip.
- **Jaw**
- **Pelvic Floor**
- **Underlying anxiety**

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## SLS



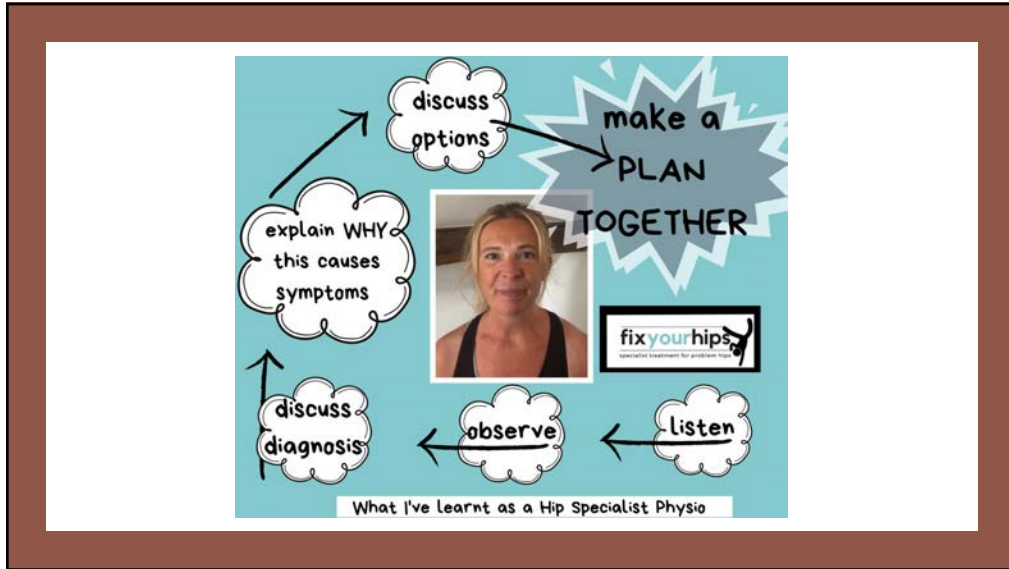
- **What are the common poor movement patterns?**
- **Observe- 30 seconds, add in a dip**
- **Gives lots of information about control/stability**
- **Explain Significance**
- **Need to match to the other side**
- **Use as an exercise- at correct level!**

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## Empower your patient!



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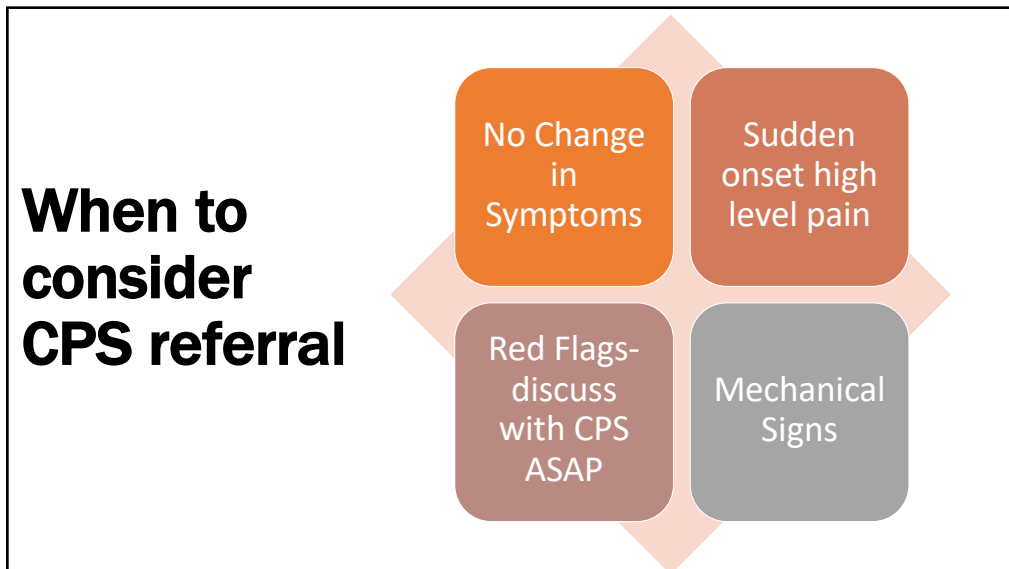
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If you have FAI and are doing any of these stretches.....  
**STOP them!**

The combination of end range flexion and internal rotation is putting your hip into a position of impingement

All these stretches will make your symptoms worse or stop them from settling!

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## Case Study: FAIS

- 33 year old female primary school teacher
- X2 children 7 and 9
- Enjoys running/ gym based circuits
- Referred via physio 'x3 sessions of rehab, worsening R hip symptoms. All exercises aggravated- plank, clams, resisted side steps, side lying hip abduction, lunges'

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## Case Study: FAIS

- 13 year history of C-sign/ anterior thigh/ occasionally buttock NRS 3-9
- Flare- settle cycle
- Seen by Prof Dunlop privately 10 years ago- told dysplasia and flattening of femoral head.
- Told to stop running (she didn't)
- No giving way or locking
- AGG: standing, walking- pushes through, running (stopped), low chairs, start up pain, breaststroke, hills, in/out bath/ lying on R side, increased load R

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## Case Study: FAIS

- Night pain- when in a flare
- PMH: Scoliosis- corrected in teens, nil else.
- FH: Mum THR age 60
- DH: Ibuprofen, paracetamol
- BMI: 20
- Imaging: nil

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## Case Study: FAIS: Objective Examination

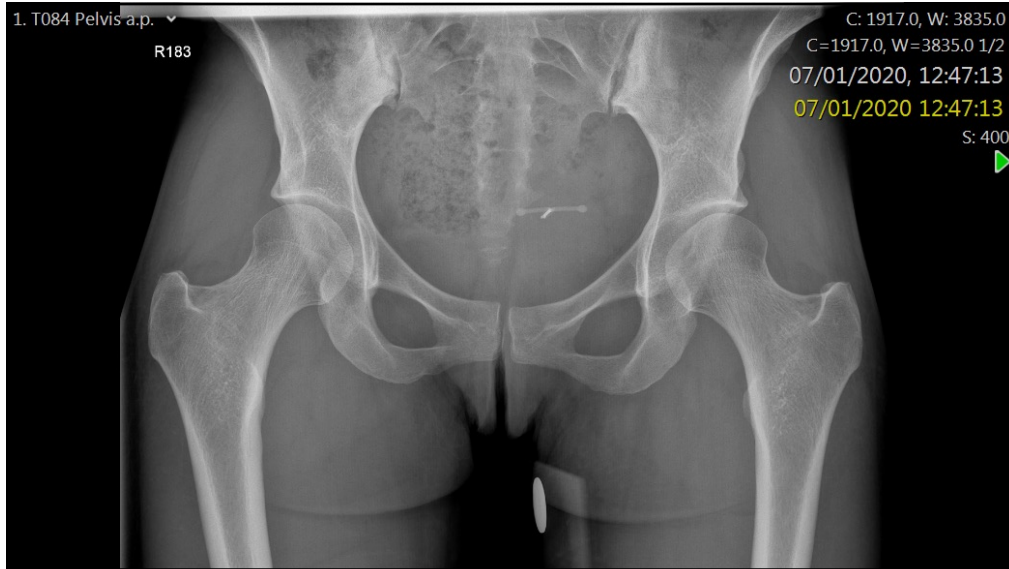
- Non-antalgic gait although increased R hip IR in stance
- Stands R hip in IR and hip hang++
- Scoliosis noted/ hypertrophic TFL/ UGMAX
- SLS lateral shift++ and increased IR R hip. L hip improved control
- Reduced strength abductors, adductors, extensors, flexors (iliopsoas): Hip abduction- flexion/ IR. Hip flexion- hitch pelvis.
- Reduced trunk control
- R hip ROM in 90 degrees flexion: flex 105 (corrected technique/ appeared to have 120), IR 20 (corrected) ER 50 abd 30
- +ve FADIR. Clunk with FABER +ve Thomas Test TFL
- L hip FROM/ Full strength

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## Case Study: FAIS: Plan

- Discussed DD- FAI +/- labral pathology
- Discussed work/ every day postures++
- XR requested AP Pelvis (for hips) and Lateral R hip and review
- 'There is subtle bilateral coxa profunda, slightly more pronounced on the right. No femoral head remodelling. The lateral centre edge angle of both hips is unremarkable. No definite signs of impingement on plain film.'
- MRI requested (covid affected)

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## Case Study: FAIS: Review

- MRI- mild anterior and posterior acetabular undercoverage (relative retroversion), prominent bump anterior femoral head. Alpha angle 49
- TCF (covid) discuss results and options.
- Due to decreased stability/ muscle strength/ poor movement patterns- rehab first option.
- Very anxious due to previous physio agg++ therefore F2F arranged.
- Observed bridge/ supported lunge/ SLS- poor body awareness, all too difficult

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## Case Study: FAIS: Mx

- Exercises:
- 1. Crook ly ball between knees- pelvic tilt- abs NOT UGM, with small static adduction contraction- unable to add in lift
- 2. Crook ly alternate leg slide- heel
- 3. Standing posture++ Balloon, to use wall/ hand support if more than 5 mins (was on summer break from school)
- Sitting posture. Expectations- may experience flare when returns to work.
- Taught progressions- bridge and double leg squat

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## Case Study: FAIS: Mx

- RV 2/12 later (pt cnc due to work)
- Back at school teaching reception.
- Very happy with progress- had added bridge and double leg squat
- No C-sign, some UGMax ache end of day
- Still jogging/ cycling

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## Case Study: FAIS: Mx

- Exercises- lunge now unsupported- to add weight
- Squat- to chair- to add weight
- Bridge to add pulse (not ready for SL)
- SLS in doorframe with tap
- Discussed work postures/ solutions- leaning to write on board/ sitting on low chairs

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## Case Study: FAIS Reflection

- No ground breaking exercises used
- Correct level for her initially- very basic
- Progression achieved
- Posture+++++

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