Groin Pain in Sportsmen

The Physiotherapists Role

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Awareness of the Pathology

Dispel your biases

Inguinal canal

- Roof
  - Internal oblique
  - Transversus abdominis
- Floor
  - Inguinal ligament
  - Lacunar ligament
- Anterior Wall
  - External oblique aponeurosis
  - Internal oblique aponeurosis
- Posterior wall
  - Transversalis fascia
  - Conjoint tendon

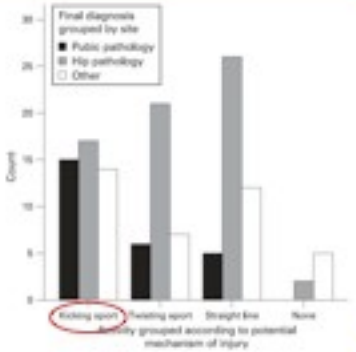
A minimal approach!

Do not miss the obvious Pathology

Set appropriate time frames to re-evaluate

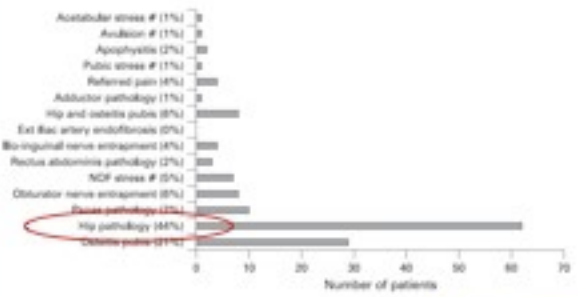
The Differential Diagnostic Challenge

What type of activity?



Bradshaw 2008

Hip pathology causes groin pain

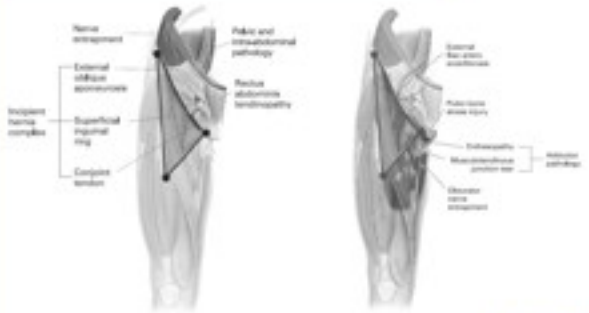


Bradshaw 2008

Area of pain - Differential diagnosis

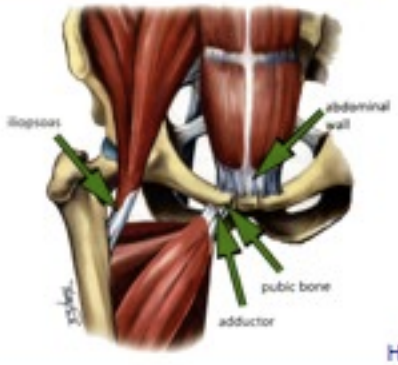
Lovell 1995

The groin triangle



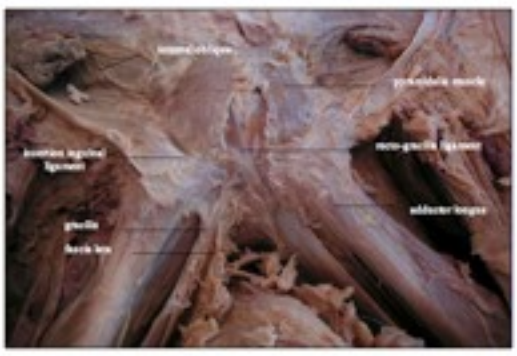
Falvey 2009

Overlapping clinical entities



Holmich 2007

Pubic symphysis



Summary

Abdominal related groin pain:

Diagnosis by exclusion

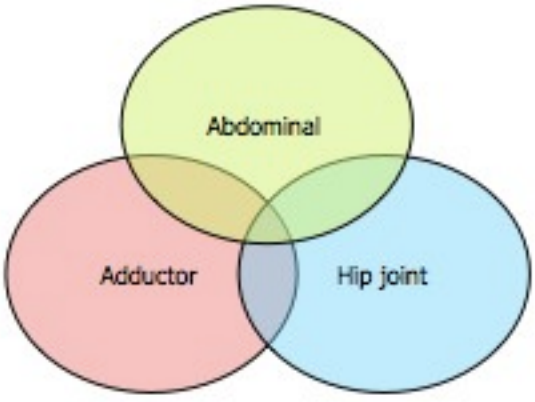
1. Rule out:
   - ★ Hip joint pain
   - ★ Adductor related groin pain
2. Is there?
   - ★ A true hernia?
   - ★ Rectus Abdominus tendonopathy?
   - ★ Iliopsoas related pain?
3. If NO to all of above - suspect:
   - ★ Sportsman's groin

Rehabilitation Principles

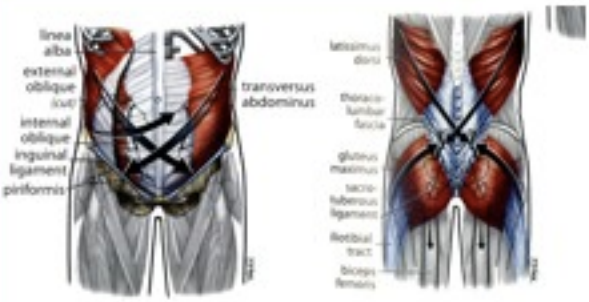
Total Hip Strength!

- Over focus on gluteals at the expense of add - ratio becomes poor
- Hip flexors a part of this - focus on TOTAL hip strength
- Flexibility not related to injury

O'Connor 2004

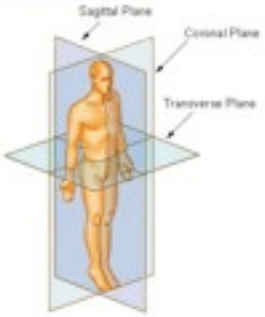


Slings



Rehabilitation modules

1. Unload
2. Manual therapy
3. Local strength
4. Functional strength
5. Skills integration



The Goal of Conservative management?

- Address the pathology - where possible
- Address the functional deficit
- Further clinical investigation of non-cured, operated athletes gave an alternative and treatable diagnosis in 80% of cases (Orchard et al 2000)
- If we fail they are going for surgery anyway

"Thicken or fail"

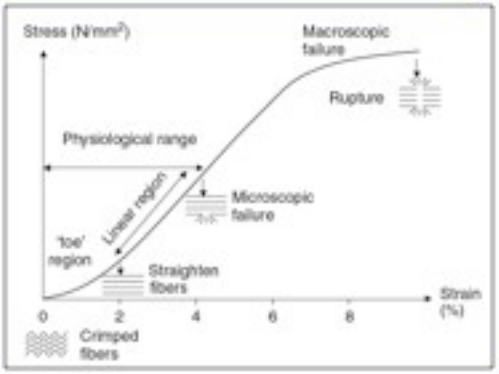
Mechanism vs. rehab

- **Pa differential - High Force generation**
- **Sheering - Muscle balance sagittal & coronal planes**
- **Tensile load - Elastic tension**
- **Compartment pressure & Nerve entrapment - Repetitive eccentric end of range movements**
- Acceleration/change of direction /shooting = pushes down by closing glottis = increase in IAP - **Sports specific speed movements**

Laws of Physics for rehab

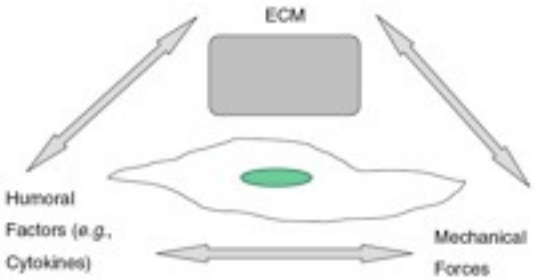
- Young's modulus - a measure of elasticity - equal to the ratio of the stress acting on a substance to the strain produced.
- Hooke's law - a law stating that the strain in a solid is proportional to the applied stress within the elastic limit of that solid
- Wolff's / Davis's law - biological systems quality and orientation of connective tissue adapts to mechanical stress to best resist extrinsic forces - "dynamic flexure"

Tendon stress-strain curve



Wang 2006

Variables of mechanotransduction of tendons



Wang 2006

How do the exercises work?

Mechanotransduction
The physiological process where cells sense and respond to mechanical loads

Mechanotherapy
The prescription of exercise to promote tissue healing

Relates to tendon, muscle, fascia, cartilage and bone

Khan 2009

How do the exercises work?

Khan 2009

Reduce adductor guarding...

Compression shorts

Sacroiliac belts

Mens 2006

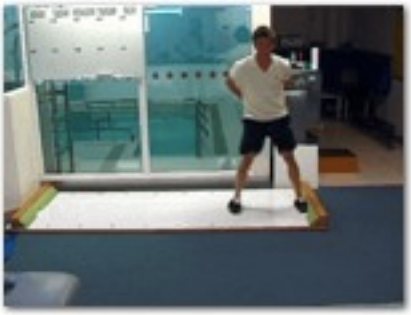
Trunk stiffness vs core stability

Trunk stiffness - Rotation

Adduction strength

Wollin 2006

Slide board - Long



Holmich 1999

Return to sport

Table 4
Clinical milestones

	Large ROM eccentric-to-concentric adductor loading	Slide board skating
Load	No weight	Start at 1.2–1.5 m
Sets	3	3–5
Repetitions	Max but not exceeding 12	30-s holding in 1 min continuously
Progression	1 kg increments following successful completion of 3 × 12 reps.	Increase distance, time, and intensity
Endpoint	3 sets of 12 repetitions with 6 kg	5 sets of 1 min duration over 5 m

Exercise instruction and rehabilitation endpoints for the two clinical milestones that coincided with the completion of a football-specific running programme, which indicated the players' functional readiness to return to sport following OP.

Wollin 2006

Does physiotherapy work?

Holmich et al 1999 (The Lancet)

- Persistent adductor-related groin pain (n = 68)
- Active training program (34) v Physiotherapy (34)
- Treatment period = 12 weeks

★ An active training program is more effective than a conventional physiotherapy program

BUT...

★ Physio group = LASER, TENS, frictions & stretches
★ Active group = Ball squeezes, trunk ex's & slide board

Summary

Rehab should include:

1. Establish benchmark
2. Early loading for tissue regulation and pain reduction
3. Progress to dynamic loading - Stress / strain / elastic
4. Integrate dynamic loading - speed
5. Balance the hip & pelvis
6. Progression based on obj functional & clinical markers
7. Time frame to consider surgery

Summary

- Are we addressing the right tissues?
- Can we change the tissues?
- Do we have **TIME** to make the changes?
- Can we use a temporary solution?

When should surgery be an option?

Thank you

Questions, comments, updates...

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