

# ORTHOPAEDIC EVIDENCE

## N E W S L E T T E R

### Clinical Examination, Diagnostic Imaging and Testing of Athletes with Groin Pain: An Evidence-Based Approach to Effective Management

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Groin pain is common in athletes participating in multidirectional sports.

A lack of detailed scientific understanding concerning the underlying pathology of pain originating from the pubic symphysis, adjacent bone, and many surrounding musculotendinous attachments has caused controversies and disagreements concerning diagnoses and terminology.

The aim of this paper was to synthesize recent advances in the clinical examination, diagnostic imaging, and testing of athletes with groin pain.

Groin pain generally more common in male athletes, however, injuries in and around the pelvic ring such as stress fractures are more common in females.

Pubic symphysis last part of the skeleton to mature therefore consider pubic apophysitis until into early 20's.

Acute muscle strains often at musculotendinous junction, especially adductor longus, rectus femoris and iliopsoas.

- Adductors often with kicking and change of direction.
- Rectus femoris often with kicking and sprinting.
- Iliopsoas often with movement requiring change of direction.

#### Screening for Serious Pathology

Prostate cancer (♂), breast cancer (♀), cancer of any reproductive organ, history of trauma, fever, unexplained weight loss, night pain, painful urination and prolonged corticosteroid use

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Specific imaging should be performed if serious pathology suspected.

*Plain radiograph:* good primary test to detect neoplasms.

perform in seemingly healthy athlete where longstanding groin pain not improving with treatment.

### Physical Examination

*Lumbar spine:* repeated ROM testing, SLR and Slump test to rule out disc/radicular pathology.

*Facet pathology:* ruled out with combined extension + rotation testing.

*SI joint pathology:* Thigh trust test useful to rule out.

*Tenderness on palpation and manual muscle testing* useful for identifying painful structure.

Absence of tenderness in adductors and flexors > 90% accurate for ruling out these structures.

*Intra-articular tests:* used as clearing tests and need to be corroborated with symptoms and imaging (for example Femoral Acetabular Impingement (FAI)).

Hip ROM: findings more clinically relevant if significant differences are present between sides or between testing and re-testing.

Strength: loss of adductor strength common, abductor and abdominal loss also occurs frequently. differences of > 15-20% common in symptomatic individuals.

### Imaging

The consequence of unnecessary imaging is that athletes may focus on these normal morphological tissue changes, which may make them fearful of movement and exercise and impede effective treatment.

For athletes with symptoms and clinical findings who can readily be classified into 1 or more of the 4 following defined clinical entities, there is currently no available evidence to suggest an improvement of diagnostic or prognostic indicators with imaging.

#### *For Pubic- and Adductor-Related Groin Pain*

Consider age, type of sport and loading and symptoms when interpreting radiograph results.

Avulsion of adductors can be confirmed with U/S or MRI if suspected.

#### *For Inguinal-Related Groin Pain*

U/S imaging of choice.

Abdominal bulging often asymptomatic leading to false positives, therefore, interpret results cautiously.

#### *For Iliopsoas-Related Groin Pain*

U/S or MRI can be helpful in confirming diagnosis but evidence regarding therapeutic or prognostic relevance is lacking.

#### *For Hip-Related Groin Pain*

Radiographs demonstrating narrow joint space and/or femoral and acetabular osteophytes combined with < 115° hip flexion and internal rotation < 15° is indicative of hip OA.

MRI useful to define cartilage or labral injury if clinical presentation suggestive of this injury.

## Patient-Specific Outcome Measures

Both the Copenhagen Hip and Groin Outcome Score (HAGOS, [www.koos.nu](http://www.koos.nu)) and the international Hip Outcome Tool are reliable, valid, and responsive measures for patients with hip and/or groin pain.

## Evidence Based Management

### *Adductor- and Pubic-Related Groin Pain*

Supervised, active rehab has the strongest evidence for successful return to play versus passive physical modalities.

50-75% of athletes will return to pre-injury level of performance.

Monitoring of adductor, abductor and abdominal strength is important.

Use of modalities can allow a faster return to play.

Adductor weakness can result post tenotomy and should, therefore, be avoided if possible.

### *Inguinal-Related Groin Pain*

Laparoscopic hernia repair has been shown to result in less pain and a higher rate of return to play versus no surgery.

Injection and exercise has been shown to produce full recovery in 50% of cases after 1 year, therefore, this option could be used instead of surgery to avoid surgical risks.

### *Iliopsoas-Related Groin Pain*

No good evidence to support or refute the benefit of exercise or other non-surgical treatment, therefore, base treatment on impairments and functional deficits.

Tenotomy tends to result in weakness and atrophy and is not recommended as a first line treatment.

### *Hip-Related Groin Pain*

Rehabilitation, medication and surgery.

No good evidence for the superiority of any one approach.

Monitor hip and trunk strength, function and activity performance during rehabilitation.

# Framework for the Clinical Examination of Athletes with Groin Pain

