Groin Injuries in Figure Skating

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Epidemiology of Groin Injuries

- Hip & pelvis: 3rd most sk8ing injury, but most difficult to rehabilitate
- ↑ing in frequency w/ lower back & core muscle injuries
- seen in sk8ers who do 3x jumps
- Injured muscle: usually adductor longus or gracilis
- Risk factors: ↑ed abductor ROM & adductor strength

Anatomy of the Groin Region
## Etiology of an Adductor Muscle Strain

- Multi-revolution jumps
- Falling
- Running
- Quickly changing directions
- Splits: forced abduction of hip
- Kicking
- Imbalances in strength & flexibility & inadequately strong core muscles

## Types of Adductor Muscle Strains

- **Acute (immediate pain)**
  - Normal activity for a while after good warm-up or stretching
- **1st degree**: pain, min. loss of strength & fn.
- **2nd degree**: tissue damage, but not complete loss of strength & fn.
- **3rd degree**: complete disruption of muscle tendon unit & complete loss of fn.
- **DDX**: stress / avulsion fx, sports hernia, osteitis pubis, nerve compression

## Symptoms / Signs

- **Main symptom**: Pain in the groin region (medial thigh)
- **Signs**: tenderness to palpation in groin region on adduction against resistance
<table>
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<tr>
<th>Diagnostic Studies ²</th>
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<tr>
<td>• Usually a clinical diagnosis</td>
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<tr>
<td>• X-Rays to rule out fracture</td>
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<tr>
<td>• MRI to confirm m. strain / tears (if unsure)</td>
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<tr>
<td>• Partial &amp; complete tendon tears</td>
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<tr>
<td>• US: to diagnose muscle &amp; tendon tears, not strains</td>
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<tr>
<th>Other Considerations ²</th>
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<tr>
<td>• Biomechanical abnormalities</td>
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<tr>
<td>• Foot &amp; lower leg malalignment</td>
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<tr>
<td>• Leg length discrepancy</td>
</tr>
<tr>
<td>• Gait / sport-specific motion abnormality</td>
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<tr>
<td>• Location of muscle strain / tear</td>
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<tr>
<td>• MT junction → aggressive rehab</td>
</tr>
<tr>
<td>• Acute partial tear at tendinous insertion of adductors to pubic bone → rest</td>
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<td>• Chronicity of symptoms</td>
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<tr>
<th>Treatment ¹, ⁶</th>
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<tr>
<td>• Patience</td>
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<tr>
<td>• Initial treatment (1-2 weeks):</td>
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<tr>
<td>• Rest</td>
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<tr>
<td>• Ice: to numb the pain</td>
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<tr>
<td>• Heat: to relax the muscles</td>
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<tr>
<td>• Elevation</td>
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<td>• Refrain from activities that exacerbate pain</td>
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Treatment (cont.)
- Continued treatment: gradual return to activity
  - Strength
  - Flexibility
  - Endurance
- Goal: return to full activity in 8-12 weeks…or within 6 months
- Consider surgery if unresponsive to conservative tx

Special Facts
- Groin injuries can take a LONG time to heal !!!
- Adequate rest period needed
  - Allow muscle strain to heal
  - Prevent re-injury

Prevention
- Stretching
- Conditioning
  - Warm up / cool down
  - Core strength
  - Strengthening hip & thigh muscles
  - Flexibility / endurance

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Groin Specific Stretches
- Butterfly stretch

Groin Specific Stretches
- Splits (a.k.a. straddle-sit-n’-reach)

Groin Strengthening Exercises
- Squats
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- Lunges

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## Skating Specific Stretches
- Spirals for hip extension
References:


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