

# Dr John Best

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160 Belmore Rd, Randwick

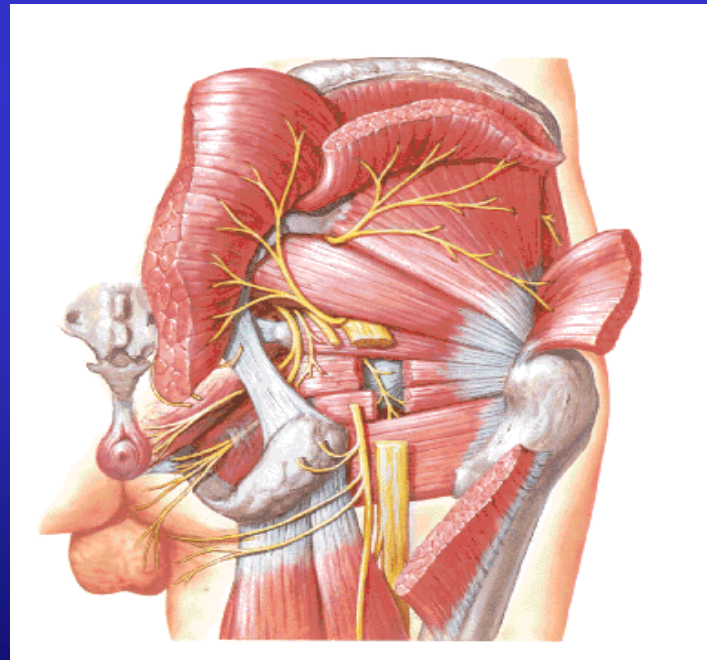


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**Dr John Best**  
**Sport & Exercise Medicine Physician**

# Upper Hamstring Syndrome Proximal Hamstring Tendinopathy (PHT)



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# Overview

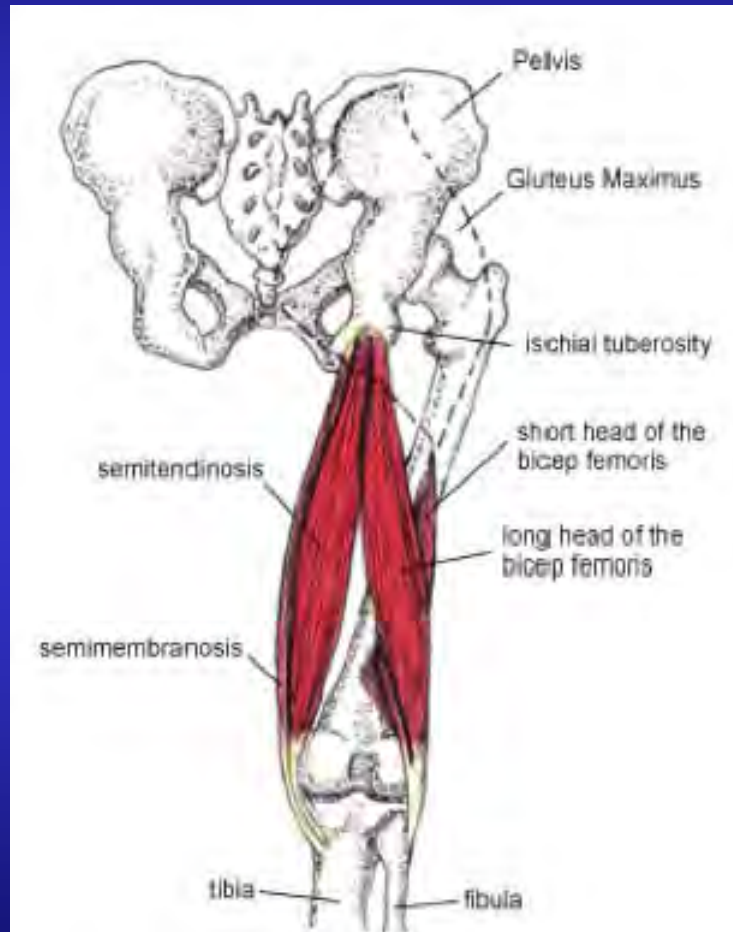
- Proximal hamstring Tendinopathy (PHT) is the most appropriate term
- Sub-acute or chronic presentations
- Buttock pain and reduced physical ability / performance
- With early diagnosis and controlled staged rehab, most patients return to pre-injury levels with non-operative treatment



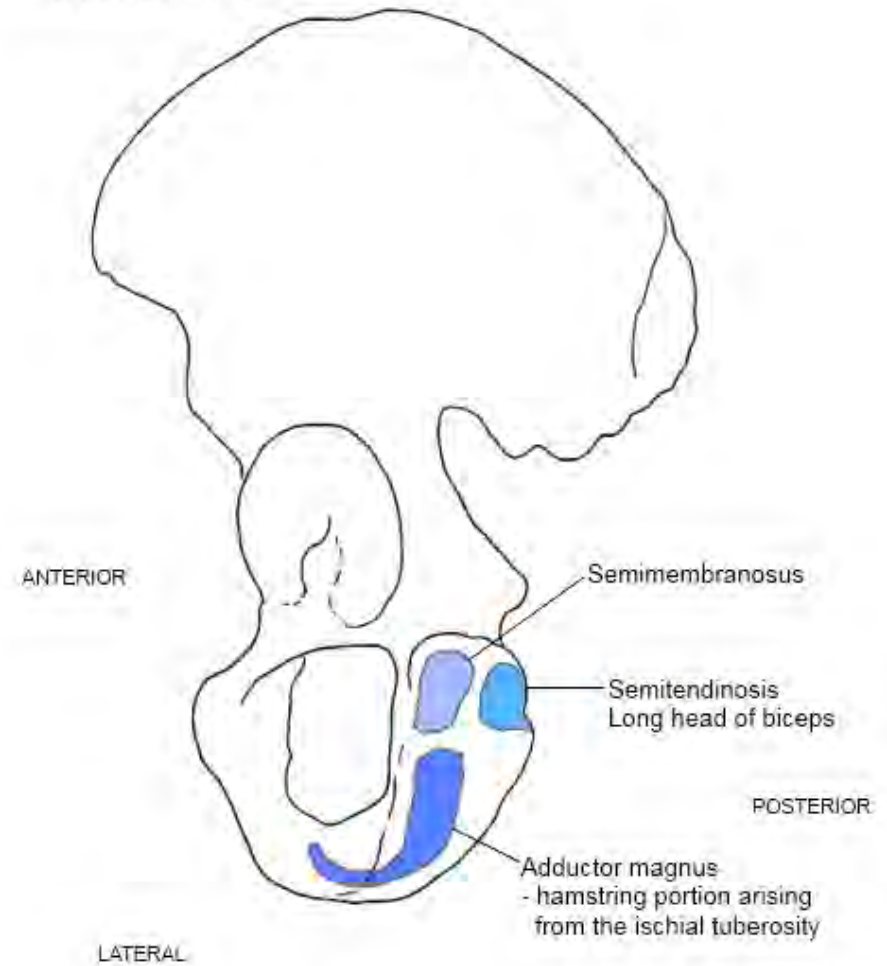
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**ISCHIAL TUBEROSITY**  
 - muscle attachments



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# Presenting Symptoms and Pathology

- Buttock pain +/- 'tear' if sub-acute
- Sub-acute – overstretch or eccentric overload
- Chronic – insidious; increased load
- Pain sitting, removing shoes, leaning forwards, stairs, incline & speed walking
- Occasional posterior thigh ache
- DDX – IT bursitis, neural referral, SIJ, ?piriformis



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# Pathology (Cook and Purdham 2009,2012)

- Oedema – acute overload; direct trauma
- Reactive tendinopathy - “short term adaptation to overload that thickens the tendon, reduces stress and increases stiffness”
- Tendon dysrepair – ongoing load; matrix breakdown
- Degenerative tendinopathy – further collagen breakdown; structural change. Load deficiency.



# Physical examination

## Aim

to confirm the  
diagnosis and  
assess the  
severity

- Observation
- Standing
- Sitting
- Palpation
- Stretch irritability
- Strength through range
- Advanced functional testing



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# Palpation



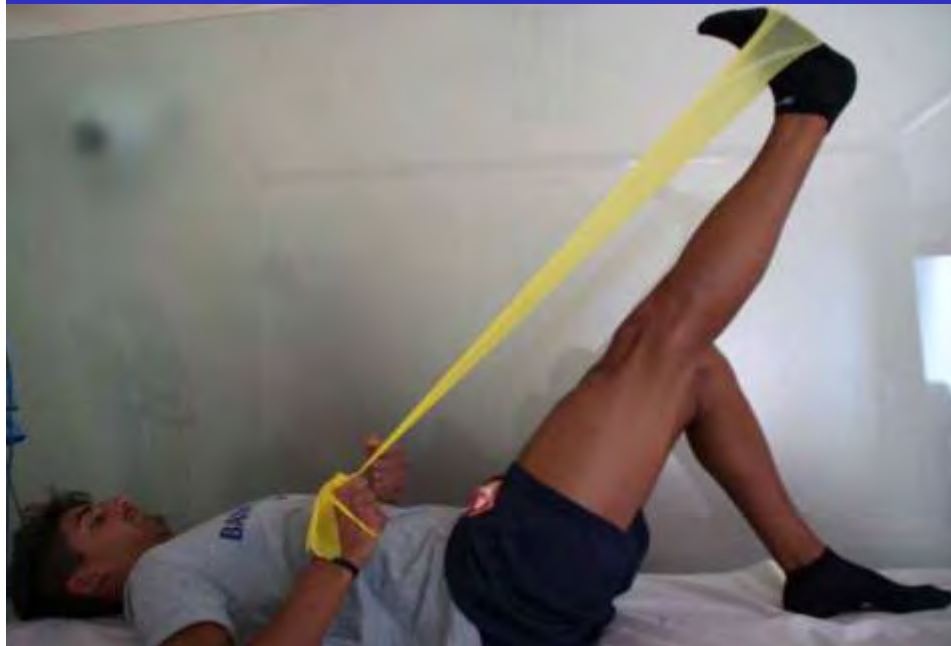
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# Validated Tests (Cacchio et al 2012)

- Modified Bent-Knee



- Puranen-Orava



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# Modified Bent-Knee Stretch

## Assisted Passive Test (Cacchio et al 2012)



# Observation and Standing



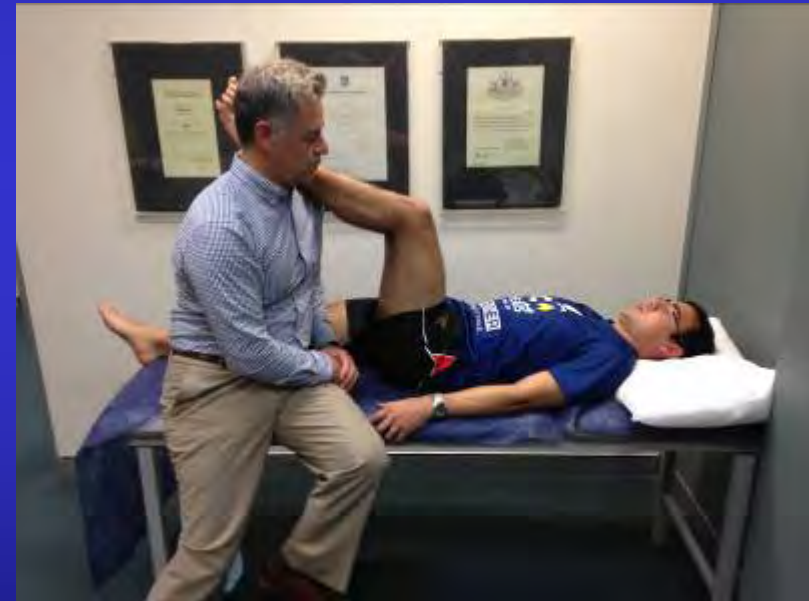
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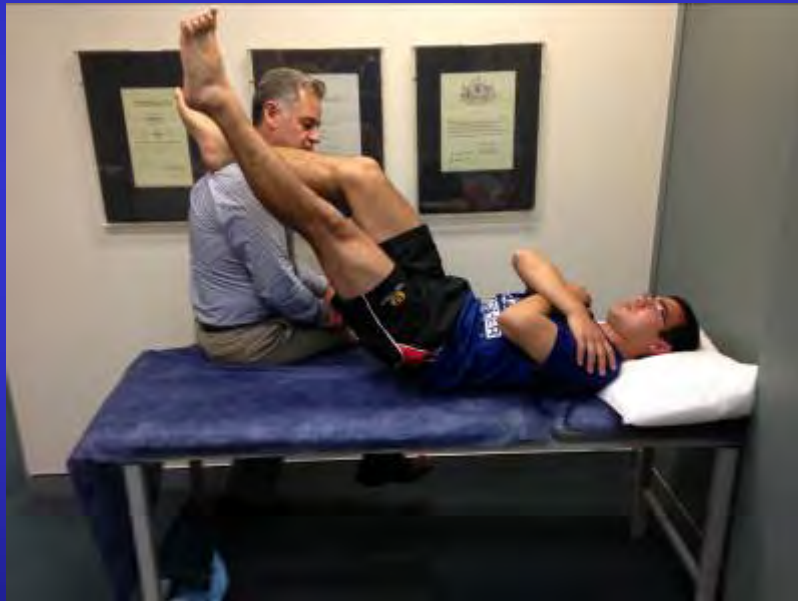
# Strength testing

incremental, careful, through range



# Strength testing

incremental, careful, through range



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# Strength Testing and Rehab



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# Grading, Imaging and Management

Grade	Pathology	Clinical Features	Management/Tests
1	Oedema, mild reactive tendinopathy	Post activity pain	Strength, ?stretch and load management



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1	Oedema, mild reactive tendinopathy	Post activity pain	Strength, ?stretch and load management
2	Reactive tendinopathy	Pre-activity pain, warms up, can complete most of activity	As above. If symptoms > 3/12 then MRI or high quality U/S if slim and grade 3 treatment. One-off cortisone injection if oedema noted.



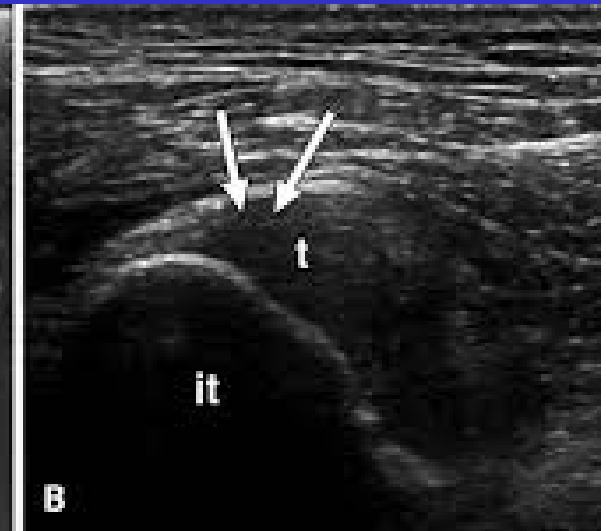
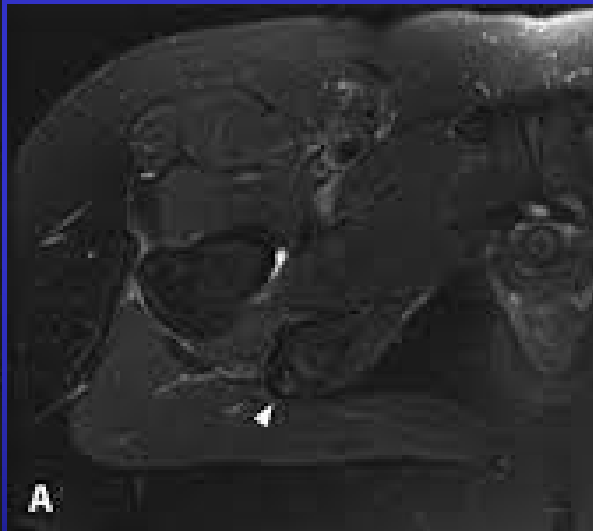
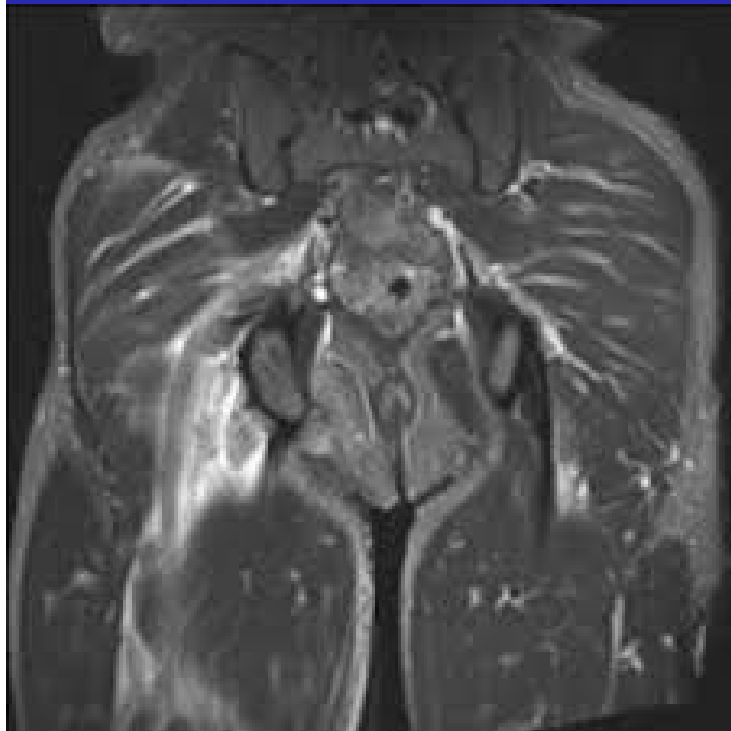
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# Imaging



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3	Tendon dysrepair, degenerative tendinopathy	Reduced power, reduced endurance, unable to run	As above. Tendinopathy management to include PRP options +/- SWT if calcification present



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4	Degenerative tendinopathy	Pain with walking, increasing rest pain	As per 3. If symptoms present >6/12 then surgical options to be considered.

# A final word on rehab principles

- No (or very little) stretch
- Pain-free sitting
- Cross train comfortably
- Monitor response to load
- Ensure recovery days
- Re-test strength carefully with re-examination
- Constant education and encouragement



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