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25th November 2010  
Zaragoza - Spain



# The Importance of Students Using Evidence to Inform Clinical Decisions

Lorrie Maffey  
Standards Committee  
Canada

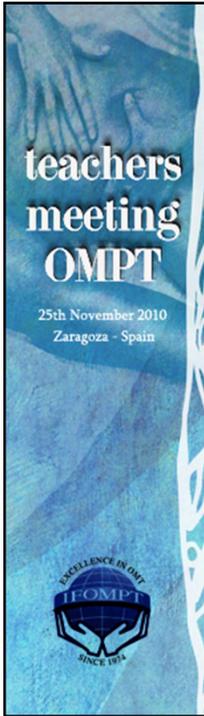
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- ☞ Challenge of integration of
  - ☞ Evidence to
  - ☞ Inform Clinical Decisions
- ☞ See this:
  - ☞ Personally in Clinical Practice
  - ☞ Personally with Manual Therapy Teaching for the Canadian System
  - ☞ Submissions to the Standards Committee

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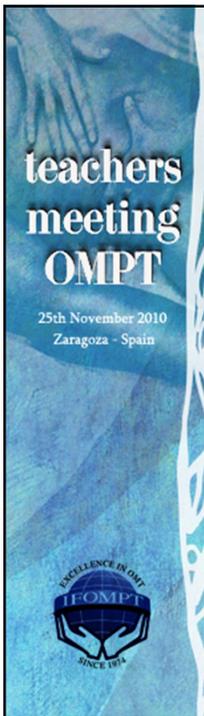
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# Challenge Putting Evidence Into Practice

- ☞ Identifying the Relevant Evidence
- ☞ Levels of Evidence
- ☞ Interpretation of Evidence
- ☞ Thinking Points
- ☞ Putting Evidence into Clinical Practice

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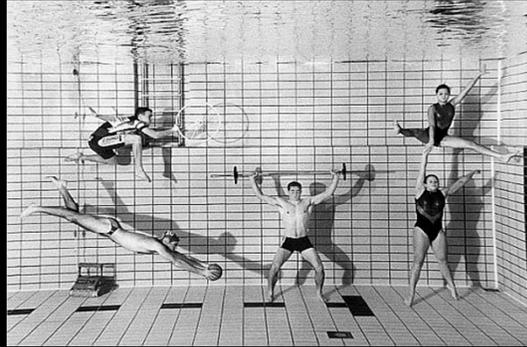


# Identifying the Relevant Evidence

- ☞ Tying it to a practice topic matter  
i.e. muscle strains
  - tying this to a specific case that exists in the literature:
    - Risk factors and management for groin injuries

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# Detection, Prevention & Management: Groin & Hamstring Injury in Sport



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MPhty, BMRPT, Dip Manip PT, GunnIMS, Med Acupuncture, MSc (student)

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## Identifying the Relevant Evidence

- Clinical Presentation
- What is it

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**Groin Strain Injury:**

- abdominal
- hip flexor
- hip adductor
- Abdominal & inguinal hernias

Primal Interactive Hip 2000

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## Identifying the Relevant Evidence

- Clinical Presentation
  - What is it
  - Who gets it

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☞ Groin strain injury top one to 6th most common cited injury in the sports:

- ☞ hockey
- ☞ soccer
- ☞ rugby
- ☞ calisthenics
- ☞ cricket



- Sport-specific groin strain injury rates vary in the literature from 0.2 to 5.17 injuries/1000 participation hours. [3, 7-12, 21]

Emery CA. CJSM 2003;13:256-268. Cahill B, Griffith E. Am J Sports Med 1978;6(180-184).  
 Emery CA. Phys Ther Rev 1999;4:79-85. Dryden D, et al. J Sci Med Sport 2000;3(2):140-149.  
 Pinto M, et al. CJSM 1999;9:70-74. Tropp H, et al Am J Sports Med. 1984;12:185-188.  
 Tropp H, et al Med Sci Sports Exerc. 1984;16:64-66. Leetun D, et al. Med Sci Sports Exerc 2004;36(6):926-934.

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## Identifying the Relevant Evidence

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- ☞ Clinical Presentation
  - ☞ What is it
  - ☞ Who gets it
  - ☞ What are the clinical tests & findings

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# Clinical Presentation

- ☞ sudden onset of medial/ anterior upper thigh pain
- ☞ associated localized tenderness & loss of function
- ☞ may be localized swelling & tenderness
- ☞ may not be any ecchymosis
- ☞ unusual to have a palpable defect
- ☞ may be insidious with poor localization of pain



a) Squeeze test (hips 45 / knees 90 = p.)



b) Bilateral adductor test (hips 30 flex, sl AB, sl IR = p.)

Verrall AJSM 35 (3): 467-474, 2007  
Verrall Scand J Med Sci Sports 15: 36-42, 2005



c) Single adductor test (either side = p.)

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## Levels of Evidence

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- **Experimental**
  - Randomized controlled trials
- **Observational**
  - Cohort studies
  - Case-control studies
  - Cross-sectional studies
  - Case series
  - Case reports
- **Expert opinion**

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## Results of Systematic Review

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☞ 175 potential → 11 studies identified

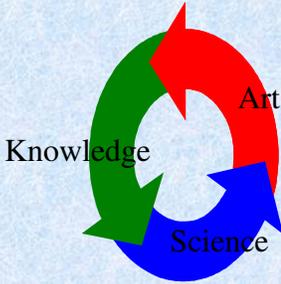
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<ul style="list-style-type: none"> <li style="margin-bottom: 10px;">☞ Soccer - 2</li> <li style="margin-bottom: 10px;">☞ Rugby - 2</li> <li style="margin-bottom: 10px;">☞ Aussie rules football - 2</li> <li style="margin-bottom: 10px;">☞ Hockey - 4</li> <li style="margin-bottom: 10px;">☞ Swimming - 1</li> </ul>	<ul style="list-style-type: none"> <li style="margin-bottom: 10px;">• Cohort - 8</li> <li style="margin-bottom: 10px;">• Intervention - 1</li> <li style="margin-bottom: 10px;">• CSS - 1</li> <li style="margin-bottom: 10px;">• Case Control - 1</li> </ul>
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# Clinical Reasoning is a Sequenced Integration of:



Barrows Hs, Tamblyn RM 1980.

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# Knowledge

☞ Experts differ from novice in ability to recall meaningful selective

## Three Types of Knowledge:

- ☞ *Propositional*: derived from research
- ☞ *Professional*: derived from practice
- ☞ *Personal*: derived from self

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# Interpretation of Evidence

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➤ **Criteria of Judgement**

- Consistency of independent investigations
- Strength of association (dose response)
- Specificity of association
- Temporal relationship
- Coherence (biological plausibility)

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## Risk Factors for Groin Strain:

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Consistent evidence

- ☞ Previous injury
- ☞ Adductor:Abductor Ratio:
  - ☞ adductor:abductor muscle strength ratio of less than 80%
- ☞ Core Control:
  - ☞ Two intervention studies
- ☞ Decreased levels of pre-season sport-specific training

## Consistency: Previous Injury

- ☞ Rationalization for post injury rehabilitation of specific exercises to prevent injury reoccurrence
- ☞ Investigated in the lumbar spine: immediately post injury = multifidus atrophy & contraction onset delayed of transversus abdominis



Hides J, et al Spine 1996;21(3):2763-2769.  
Hodges P, et al Spine 1996;21:2640-2650.  
Hodges P, Richardson C. Phys Ther 1997;77(2):132-142

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Just because we can not  
always prove a hypothesis  
does not mean that we can  
not or should not, think  
about it.

V. Janda

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## Thinking Points

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- ☞ Intersperse “thinking points” that:
  - ☞ may drive future research in this area
  - ☞ tie in previous lectures and other information i.e. hamstring strain literature
  - ☞ stimulate discussion

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## THINKING POINT:

- ☞ It may be that the adductor strength (i.e. concentric and eccentric) throughout its length may be important for injury prevention.



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# Putting Evidence into Clinical Practice

→ Practical application of previous information

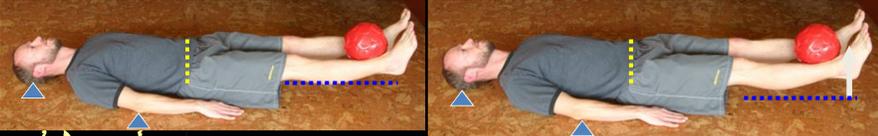
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## Isometric contraction of adductors:

~ coordination of hip joint related muscles & torso muscles with dynamic exercise

a) without torso movement



b) with torso movement



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## Putting Evidence into Clinical Practice

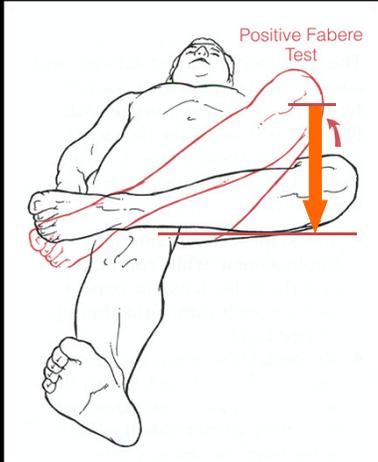
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- ☞ Practical application of previous information
- ☞ Skills to self evaluate effectiveness
  - ☞ Test - retest
  - ☞ Outcome measures

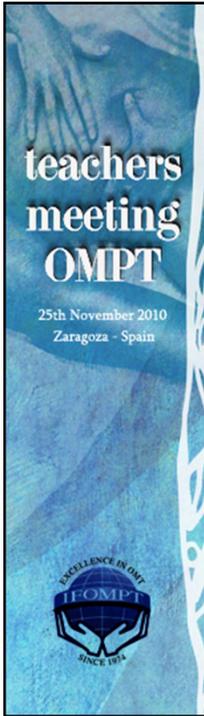
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## FABERE / Patrick's TEST

- heel of painful side placed on knee of other leg
- knee of affected side remains elevated  
i.e. flexion, abduction,  
external rotation &  
extension



Positive Fabere Test



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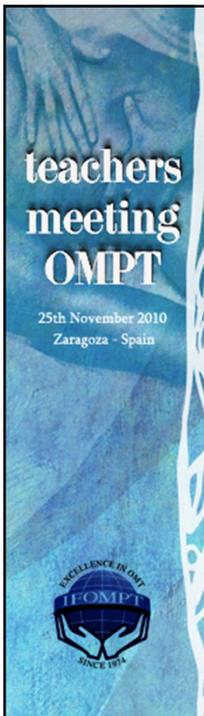


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# Good Luck & On Behalf of Your Profession & Patients ☞ Thank you ☞

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