Evidence Based Medicine: It’s a method, not a recipe

Objectives:
Discuss the concept of ‘evidence-based medicine’
Provide examples of how it can influence practice

Sports Medicine: An Evolving Field

• “much of sports medicine has developed empirically”
• “practice often reflects practitioner experience rather than evidence from research findings”

Bleakley & MacAuley (2002)

Sports Medicine: Evidence & Practice

Soft-Tissue Injuries in Runners

Training Modifications
• Reduction in frequency (1-3 days v 5 days/wk)
  Relative Risk - 0.19 [0.06, 0.66]
• Reduction in duration (15-30min v 45 min/day)
  Relative Risk - 0.41 [0.21, 0.79]
• Reduction in running distance
  Relative Risk - 0.70 [0.54, 0.91]
Stress Fracture Treatment [Rome et al. 2005]:

**Pneumatic air brace v control**

**Outcome:** Time (days) to return to full activity / training

<table>
<thead>
<tr>
<th>Study</th>
<th>Days</th>
<th>Control</th>
<th>Pneumatic Air Brace</th>
<th>Weighted Mean Difference (ES)</th>
<th>Weight (kg)</th>
<th>Weighted Mean Difference (ES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military</td>
<td>26</td>
<td>36</td>
<td>10</td>
<td>-6.02</td>
<td>0.495</td>
<td></td>
</tr>
<tr>
<td>Norway #1</td>
<td>26</td>
<td>36</td>
<td>12</td>
<td>-5.52</td>
<td>0.696</td>
<td></td>
</tr>
<tr>
<td>Norway #2</td>
<td>26</td>
<td>36</td>
<td>56</td>
<td>-5.92</td>
<td>0.54</td>
<td></td>
</tr>
</tbody>
</table>

**Acute Shoulder Dislocations (Handoll 2004).**

**Hamstring Strains - Risk Factors**

- **Muscle Imbalance in AFL Players**

Orchard et al. (1997): “significant association between pre-season hamstring weakness and hamstring strain”

H60:Q60 ratio 0.55 - risk (t=3.7, p < 0.000)

H60:oppH60 ratio 0.88 - risk (t=2.9, p < 0.005)
Hamstring Strains - Risk Factors

- Muscle Imbalance in AFL Players

Bennell et al. (1998): “NO significant association between hamstring weakness and hamstring strain”

H60:Q60 ratio 0.59 in injured / non-injured
H60:oppH60 ratio 0.99 in injured;
1.04 non-injured

Stretching & Injury (Shrier, 2002).

- Stretching - universally recommended for injury prevention but … controversial area in sports medicine

Achilles Tendon Rupture (Khan et al. 2004).
Research Limitations

- The population that was studied
  - ‘generalizability’
- The methods that were used
  - ‘bias’
- Evolution in the field – new discoveries
- Common sense – parachutes, penicillin

Perspective

- Patient care = integration of EBM with your clinical judgement (patient likely not replica of RCT data point)
- Changes in EBM guidelines are inevitable

Evidence-based medicine: It’s a method, not a recipe

Summary

‘Evidence-based medicine’ is an empowering concept that likely delivers more consistent, better care