Effectiveness of Exercise Programs in Preventing Ankle Injuries in the Young Athlete: a Review of Literature

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Injuries in the young athlete

- 30 million US children in organized sports
  - 1/3 will sustain injury needing medical attention
  - Estimated cost=$1.8 million

  Most common = ankle injuries

Prevention of Ankle Injury

- Ankle stability to prevent injuries
- Modalities:
  - Ankle taping and bracing
  - Stability exercises and warm up programs

Disclosures

- There are no relevant disclosures.
**Question:**
Can strengthening exercises prevent ankle injuries in young athletes?

**Literature**

**Pubmed Search: Ankle Injury Prevention Trials**

**196 Studies**

**Criteria**
- Young age
- Controlled trial
- Outcome = ankle injury

### Results

<table>
<thead>
<tr>
<th>Verhagen et al</th>
<th>Olsen et al</th>
<th>Longo et al</th>
<th>Wedderkopp et al</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sport</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Volleyball</td>
<td>Handball</td>
<td>Basketball</td>
<td>Handball</td>
</tr>
<tr>
<td><strong>Players/Teams</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1127 Players</td>
<td>1837 Players</td>
<td>11 Teams</td>
<td>11 Teams</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td></td>
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<tr>
<td>Balance Board</td>
<td>Structured Warm-up</td>
<td>FIFA 11+</td>
<td>Ankle Disc</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Reduction in ankle sprains</td>
<td>Reduction in overall injuries</td>
<td>Reduction in overall injuries</td>
<td>Reduction in ankle injuries</td>
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<tr>
<td><strong>Analysis</strong></td>
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<tr>
<td>RR = 0.5, CI 0.2-0.9</td>
<td>Non-significant</td>
<td>Non-significant</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

**Discussion**

- Little data.
- Difficult to directly link exercises to injury outcome.
- Most studies look into multiple injuries.
- Possible trend: prevention of overall injuries.
Next Approaches:

- More randomized controlled studies
- Other types of studies:
  - There are team/organizations that already utilize exercises. Can we compare outcomes?
  - Data from retrospective studies

Acknowledgements

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Reference