The Use of Ability Based Training in Police Force Recruits

A/Prof Rob Orr; SGT Michael Stierli; Ms Kelsie Ford
Police Training

$85,000 to train a Police Officer

Long slow distance Road Run Group intervals

70-80% of MSK injuries are from overuse

25x more likely to fail basic training

Police Force Generation

$$$$$$$$$$

One size fits all

Attrition

Workers comp
Hospitalisation
Sick days
Recruitment

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Ability-Based Training (ABT):

• Tailoring physical training (running) programs to the ability level of the individual or group

• Removes the ‘One size Fits all’ approach without compromising fitness benefits and saving time

• Proven to ↓ injury risk and severity in military populations without compromising fitness (Knapik et al, 2003; Orr, 2010)
The aim of this study was to investigate whether an Ability Based Training (ABT) program derived from the 30-15 Intermittent Fitness Test (IFT), would improve the aerobic fitness of police recruits to the same extent as current training processes, in less time and with fewer injuries.
Methods

$n=236$

- **Standard**
  - Session 1
  - $n=54$
    - **CON**
      - Warm up
      - Strength
      - Long slow dist
      - Long interval
      - Short interval
    - **INT**
      - Warm up
      - Strength
      - 30-15IFT ABT running program

- **+ Defence**
  - Session 2
  - $n=233$
    - **CON**
      - Warm up
      - Strength
      - Long slow dist
      - Long interval
      - Short interval
    - **INT**
      - Warm up
      - Strength
      - 30-15IFT ABT running program
Methods

Control Group - Current Police recruit physical training for metcon:
  - Long slow distance running: Long interval training (400m): Some short interval training (20m)

Intervention Group – 30-15 Derived metcon program
  - Interval distance was derived from the formula: \( \text{Interval distance} = \text{running speed in m/s (score)} \times \% \text{ of effort} \times \text{duration of interval} \).
  - % of effort increased by 2.5% from 90% in Week 1 to 97.5% in Week 4 then 92.5% in Week 6 to 100% in Week 9
  - Each cycle = 10s on: 10s off for 6 mins
  - Cycles: Weeks 1-4 = 2 cycles with 2 min rest between:
    - Weeks 6-9 = 3cycles with 3 mins rest between

• Weeks 5 & 10 Rope Run ‘team challenge’
Methods

Outcome measures

- 20 Meter Progressive shuttle run test
- Injury rates: determined through injury data collected from the Academy’s Accident and Incident forms and database

Analysis

- SPSS v20, alpha .05
- T-tests were used to investigate differences in fitness between (independent) and within (paired) cohorts
- Chi-squared test investigating differences in injuries between cohorts
## Results

### Initial Data - Session 1 and Session 2

<table>
<thead>
<tr>
<th>Session</th>
<th>Subjects</th>
<th>30-15&lt;sub&gt;IFT&lt;/sub&gt; (Score)</th>
<th>MSFT (# Stages)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male n</td>
<td>Female n</td>
<td></td>
</tr>
<tr>
<td>Session 1</td>
<td>Control 20</td>
<td>5</td>
<td>16.36 (1.71)</td>
</tr>
<tr>
<td></td>
<td>Intervention 14</td>
<td>6</td>
<td>16.56 (2.10)</td>
</tr>
<tr>
<td>Session 2</td>
<td>Control 59</td>
<td>37</td>
<td>16.62 (1.63)</td>
</tr>
<tr>
<td></td>
<td>Intervention 59</td>
<td>36</td>
<td>16.45 (1.71)</td>
</tr>
</tbody>
</table>

- No sig difference between CON and INT groups in Session 1 and Session 2
- No sig difference between Session 1 and Session 2
Results

Number of Shuttles Completed pre and post training- Session 1

No significant improvement Control pre vs post, p=0.476
No significant improvement Intervention pre vs post, p=0.493
No significant difference between Control and Intervention post training, p=0.09
Results

Number of Shuttles Completed pre and post training- Session 2

*\( p<0.0001 \) Control pre vs post  \(^*\)

\(^*\)
\(^*\) \( p<0.0001 \) Intervention pre vs post
## Results

<table>
<thead>
<tr>
<th>Injuries n (%)</th>
<th>Session 1</th>
<th>Session 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Intervention</td>
</tr>
<tr>
<td>Size n</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>Injuries n (%)</td>
<td>4 (14%)</td>
<td>1 (4%)</td>
</tr>
<tr>
<td>Injury sites</td>
<td>Foot x 1</td>
<td>Foot x 1</td>
</tr>
<tr>
<td></td>
<td>Knee x 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Back x 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ankle x 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calf x 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lower leg x 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wrist x 2</td>
<td></td>
</tr>
</tbody>
</table>
Conclusion

• Recruits who did the ABT maintained/improved aerobic fitness comparable to their standard physical training counterparts
• Injury rates were lower in ABT groups
• ABT groups performed significantly less mileage, were running for less time and arguably trained for the required demands of their occupation (intermittent)
• Saved time ...
  – Does a specific conditioning program introduced in ‘spare’ time decrease injury potential?
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