The Use of Ability Based Training in Police Force Recruits

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A/Prof Rob Orr; SGT Michael Stierli; Ms Kelsie Ford
**Background**

- Workers comp
- Hospitalisation
- Sick days
- Recruitment

$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

Police Training

Overuse Injuries

Attrition

$$$$$$$
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

INT
Warm up
Strength

CON
Warm up
Strength

INT
Warm up
Strength

+ Defence
Session 2
n=233

Long slow dist
Long interval
Short interval

30-15 IFT ABT running program

Long slow dist
Long interval
Short interval

30-15 IFT ABT running program

CON
Warm up
Strength

INT
Warm up
Strength

CON
Warm up
Strength

INT
Warm up
Strength

30-15 IFT ABT running program

30-15 IFT 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$_{IFT}$ (Score)</th>
<th>MSFT (# Stages)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male n</td>
<td>Female n</td>
<td>M(SD)</td>
</tr>
<tr>
<td>Session 1</td>
<td>Control</td>
<td>20 5</td>
<td>16.36 (1.71)</td>
</tr>
<tr>
<td></td>
<td>Intervention</td>
<td>14 6</td>
<td>16.56 (2.10)</td>
</tr>
<tr>
<td>Session 2</td>
<td>Control</td>
<td>59 37</td>
<td>16.62 (1.63)</td>
</tr>
<tr>
<td></td>
<td>Intervention</td>
<td>59 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
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*

![Graph showing number of shuttles completed pre and post training for Session 2.](image)

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

<table>
<thead>
<tr>
<th></th>
<th>Session 1</th>
<th></th>
<th>Session 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Intervention</td>
<td>Control</td>
<td>Intervention</td>
</tr>
<tr>
<td>Size n</td>
<td>29</td>
<td>25</td>
<td>118</td>
<td>115</td>
</tr>
<tr>
<td>Injuries n (%)</td>
<td>4 (14%)</td>
<td>1 (4%)</td>
<td>12 (10%)</td>
<td>7 (6%)</td>
</tr>
<tr>
<td>Injury sites</td>
<td>Foot x1</td>
<td>Foot x1</td>
<td>Foot x1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Knee x 2</td>
<td></td>
<td>Knee x 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Back x 1</td>
<td></td>
<td>Back x 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ankle x 2</td>
<td>Ankle x 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calf x 1</td>
<td>Calf x 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lower leg x 3</td>
<td>Lower leg x 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wrist x 2</td>
<td>Finger x 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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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