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The Use of Ability Based Training in Police Force Recruits

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Link to publication in Bond University research repository.

Background

Workers comp
Hospitalisation
Sick days
Recruitment

Police Training

$85,000 to train a Police Officer

$$$$$$$$$

One size fits all

Long slow distance
Road Run
Group intervals

Police Force Generation

Overuse Injuries

70-80% of MSK injuries are from overuse

Attrition

25x more likely to fail basic training
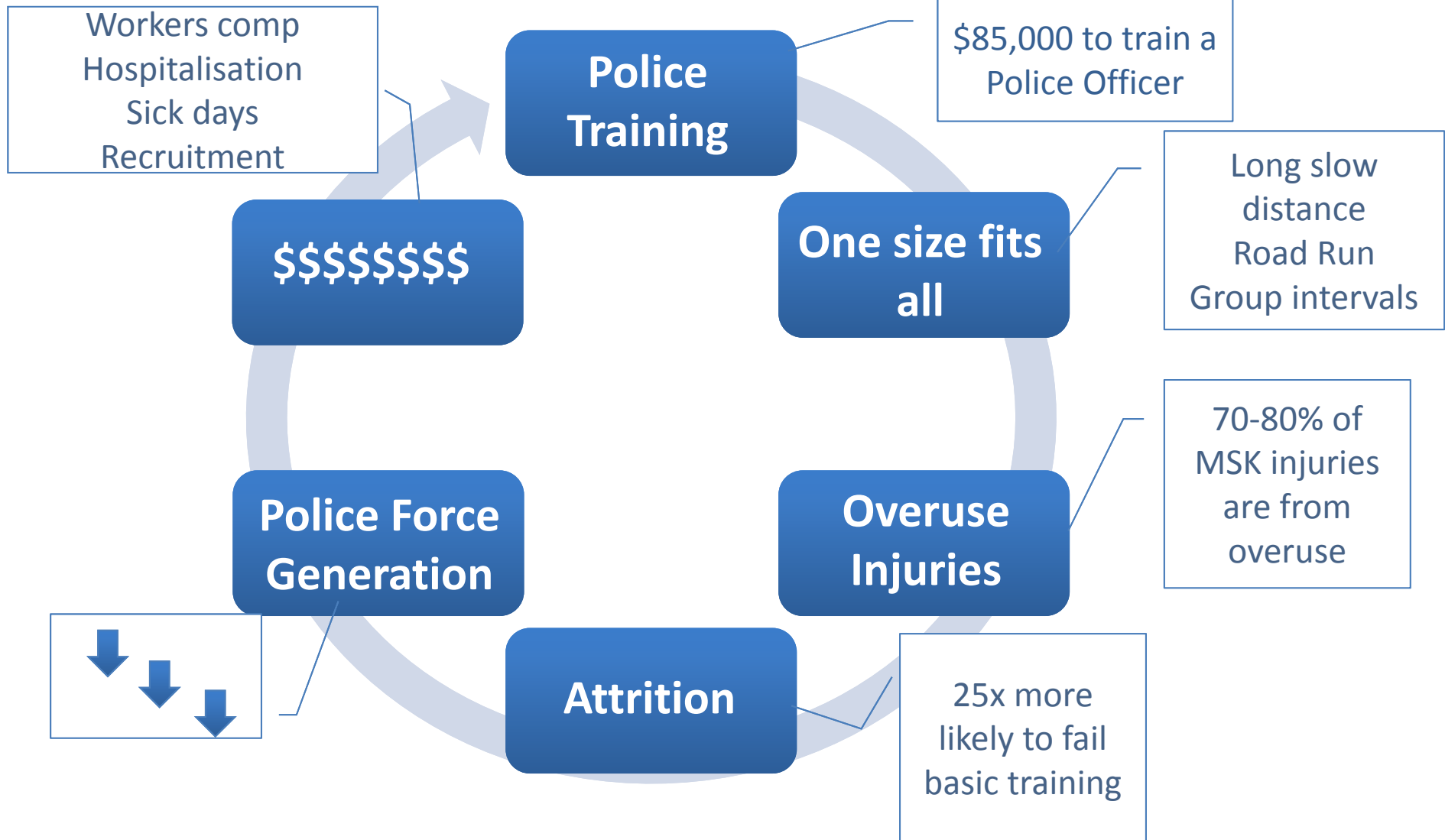
Background

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
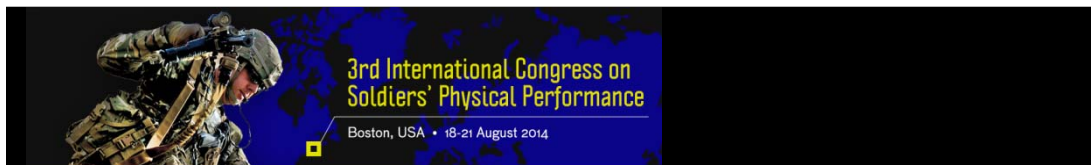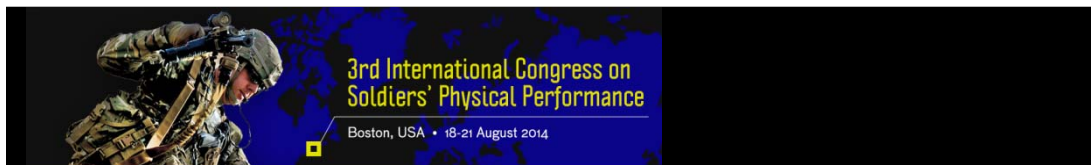
- Proven to ⬇ injury risk and severity in military populations without compromising fitness (Knapik et al, 2003; Orr, 2010)
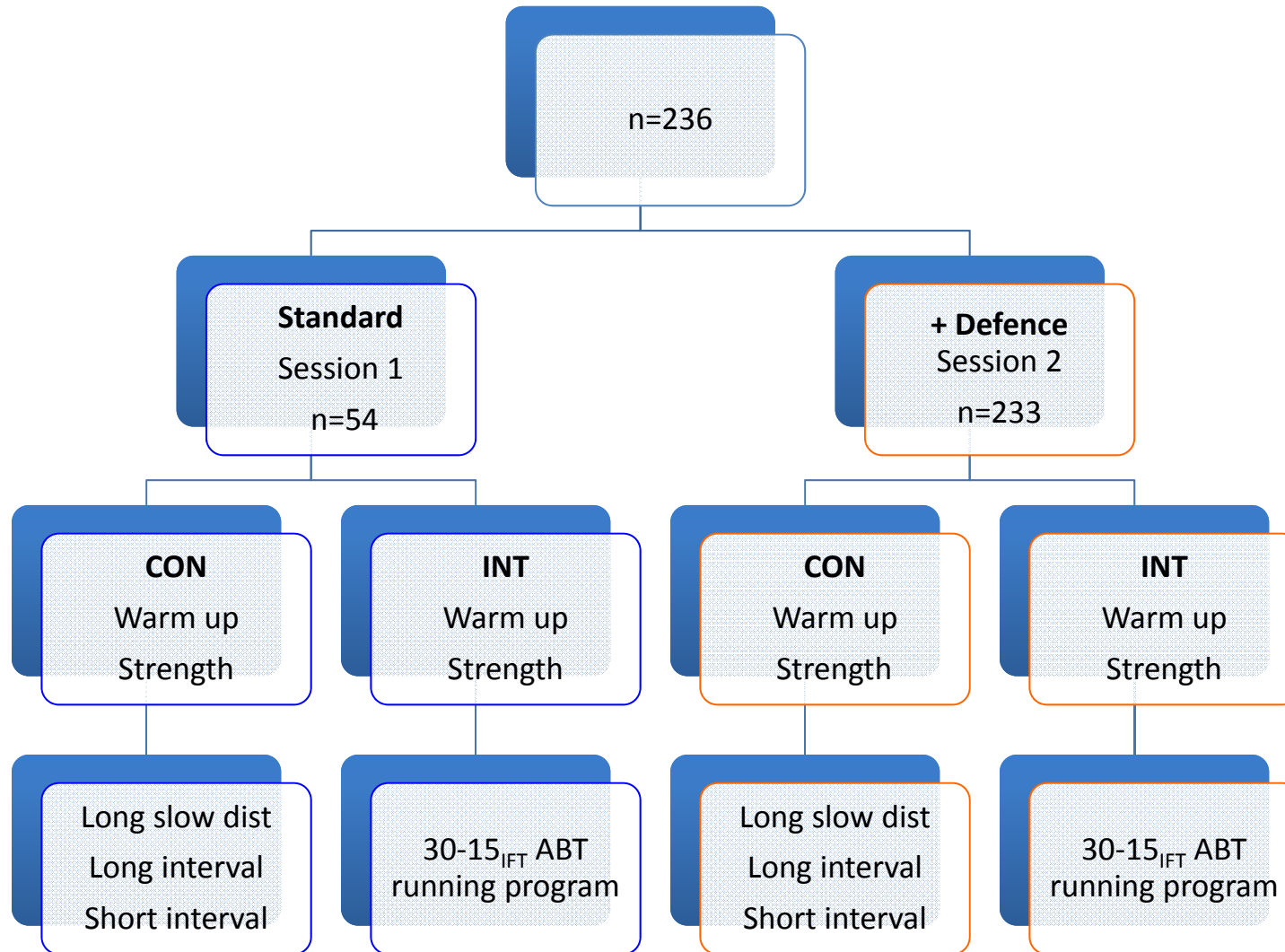
Aim

- 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


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                          n=236

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      Standard                              + Defence
      Session 1                             Session 2
       n=54                                  n=233

   ┌──────┴──────┐                      ┌──────┴──────┐

   CON          INT                    CON          INT
 Warm up      Warm up                Warm up      Warm up
 Strength     Strength               Strength     Strength

Long slow dist              Long slow dist
Long interval  30-15_IFT ABT  Long interval  30-15_IFT ABT
Short interval running program Short interval running program
```

- **Standard** Session 1 n=54
  - **CON** Warm up, Strength — Long slow dist, Long interval, Short interval
  - **INT** Warm up, Strength — $30\text{-}15_{IFT}$ ABT running program
- **+ Defence** Session 2 n=233
  - **CON** Warm up, Strength — Long slow dist, Long interval, Short interval
  - **INT** Warm up, Strength — $30\text{-}15_{IFT}$ 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: *Interval distance=running speed in m/s (score) x % of effort x 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
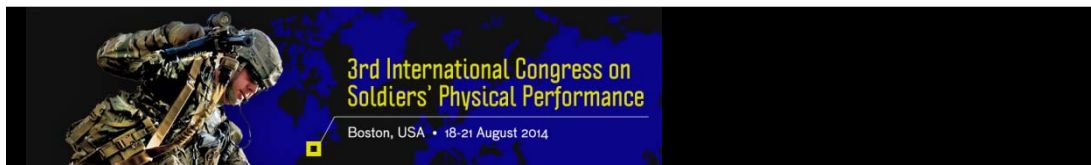
Results

Initial Data - Session 1 and Session 2

Session		Subjects		30-15_IFT (Score) M(SD)	MSFT (# Stages) M(SD)
		Male n	Female n		
Session 1	Control	20	5	16.36 (1.71)	8.2 (1.68)
	Intervention	14	6	16.56 (2.10)	8.3 (1.78)
Session 2	Control	59	37	16.62 (1.63)	8.2 (1.49)
	Intervention	59	36	16.45 (1.71)	7.9 (1.60)

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

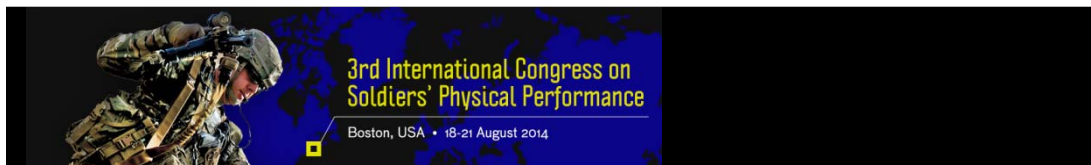- No sig difference between Session 1 and Session 2

Results

Number of Shuttles Completed pre and post training- Session 1
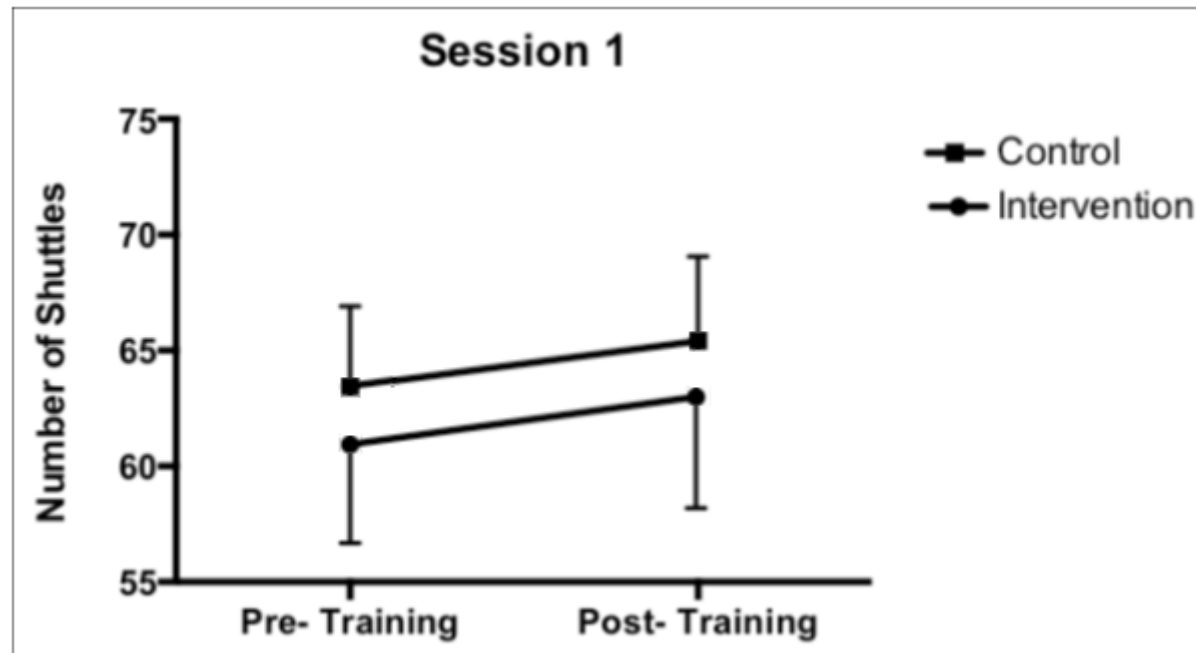
No significant improvement Control pre vs post, p=0.476

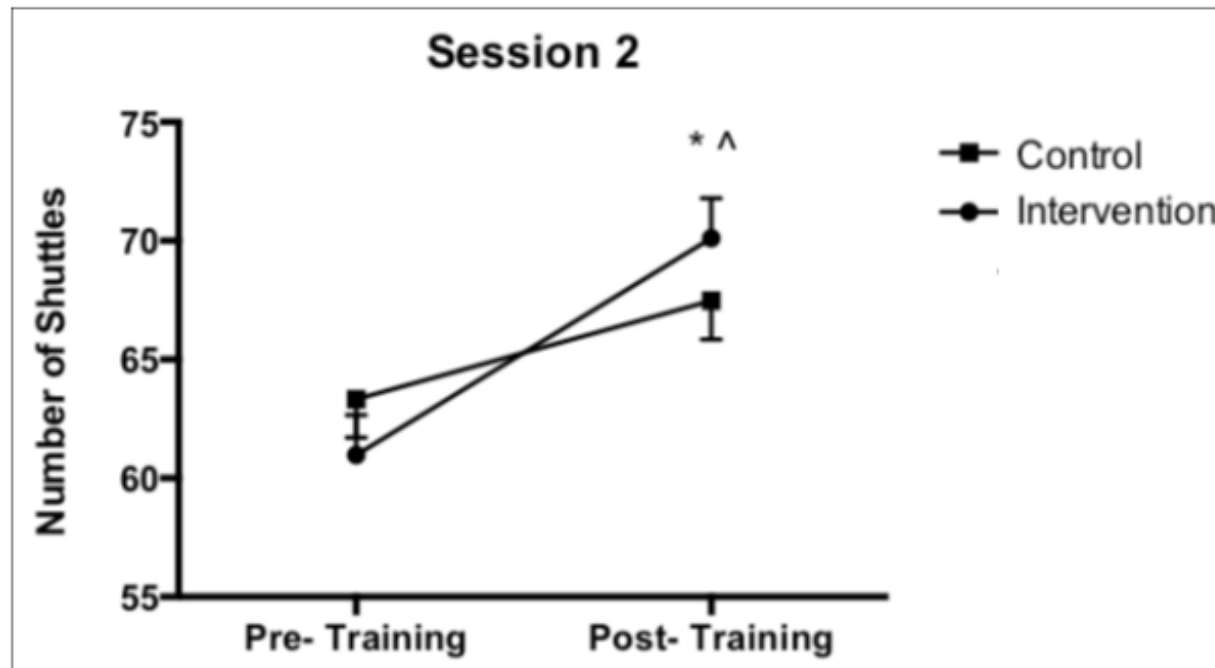No significant improvement Intervention pre vs post, p=0.493

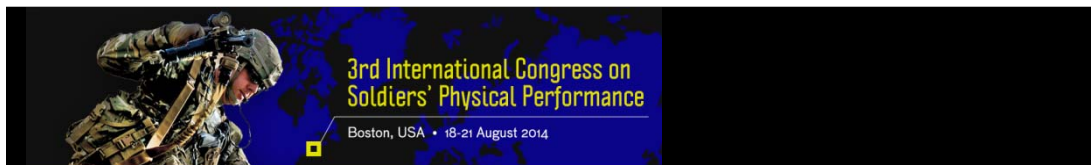**No significant difference between Control and Intervention post training, p=0.09**

Results

Number of Shuttles Completed pre and post training- Session 2

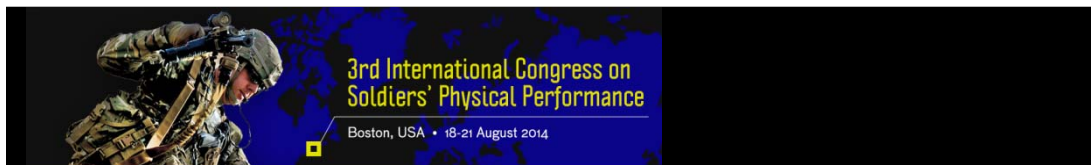*p<0.0001 Control pre vs post   ^ p<0.0001 Intervention pre vs post

Results

	Session 1		Session 2	
	Control	Intervention	Control	Intervention
Size n	29	25	118	115
Injuries n (%)	4 (14%)	1 (4%)	12 (10%)	7 (6%)
Injury sites	Foot x1	Foot x 1	Foot x1	
	Knee x 2		Knee x 3	
	Back x 1			Back x 2
			Ankle x 2	Ankle x 1
			Calf x 1	Calf x 1
			Lower leg x 3	Lower leg x 2
			Wrist x 2	Finger x 1

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 rogram introduced in 'spare' time decrease injury potential?