Run To The Hills: The Effects of Academy Training on the Physical Fitness of Law Enforcement Recruits across Three Classes
Mitchell, Peter K; Balfany, Katherine; Dulla, Joseph; Dawes, Jay J.; Orr, Rob Marc; Lockie, Robert G.

Published: 01/10/2018

Document Version: Peer reviewed version

Link to publication in Bond University research repository.

Recommended citation (APA):

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

For more information, or if you believe that this document breaches copyright, please contact the Bond University research repository coordinator.
Run To The Hills: The Effects of Academy Training on the Physical Fitness of Law Enforcement Recruits across Three Classes

Peter K. Mitchell1 • Katherine Baltany2 • Joseph M. Dulla3 • J. Jay Dawes4 • Robin M. Orr4 • Robert G. Lockie1

1Center for Sport Performance, Department of Kinesiology, California State University, Fullerton, CA, USA.
2Recruit Training Unit, Training Bureau, Los Angeles County Sheriff's Department, Los Angeles, CA, USA.
3Department of Health Sciences, University of Colorado-Colorado Springs, Colorado Springs, CO, USA.
4Tactical Research Unit, Bond University, Robina, Qld, Australia.

ABSTRACT

Law enforcement agencies (LEA) use the academy period to train recruits in the skills needed to undertake the demands of their job. Recruits must become prepared for the many physical rigors of law enforcement training, which include running, vaulting, sprinting, draging, pursuing fleeing suspects, and controlling those resisting arrest (1,4).

As recruits make the transition from the general population to becoming law enforcement personnel, they are not accustomed to the amount and type of physical training that will be demanded in law enforcement (2). This indicates the need for academy fitness programming that should be specific to the demands of law enforcement.

Ideal training for recruits should include exercises that emphasize the movements and explosiveness needed for the daily tasks of law enforcement (2). Other considerations should be muscular strength and endurance, anaerobic power, flexibility, and injury prevention (1-3).

Exercise programs is the responsibility of staff who tend to follow a paramilitary model. However, there is a tendency for the majority of law enforcement academy physical training sessions to be centered around calisthenics and running circuits that may lack evidence-based practice (1,4).

The purpose of this study was to compare the effects of physical training across three academy classes through pre- and post-academy assessment to determine the effectiveness of the training regimen implemented by the academy training staff.

METHODS

Data were collected from law enforcement recruits who were assigned to one of three academy classes between July 2017 and January 2018. Subjects were divided based on self-reported sex (male [♂] or female [♀]), with bass according to age, height and body mass. Participants were 26 males (♂) and 26 females (♀) who were between 18 and 26 years old (mean ± standard deviation of 25 ± 2 years). Classes were balanced in terms of sex, age, height and body mass.

Physical fitness was assessed using a battery of standardized tests designed to evaluate the physical demands of the LEA (5). These included: vertical jump (VJ), 200m shuttle run (SRT), 20-m sprint (SPT), standing broad jump (SBJ), push-ups (PUS), sit-ups (SIT), running 20 m (R20), standing long jump (SLJ), and the Modified Broad Jump (MBJ).

Prior to each assessment, participants were given a standard pre-test battery with instructions. An on-duty period was on the day following the first assessment. Post-test assessments occurred approximately at the end of week 26 of training. The Physical Fitness Battery (PFB) was administered over six sessions; two weekly pre- and post-assessment sessions were conducted (two of the weeks). Pre- and post-assessment data were collected in 2017-18.

Physiological responses were assessed using heart rate (HR) and blood lactate (BL) during training. Blood lactate was determined from capillary blood samples obtained from the ear lobe before and following each exercise session. Blood lactate was analyzed using a standard enzymatic method (7)

RESULTS

• Retrospective analysis was conducted on three classes from one law enforcement agency:
  o Class 1: males = 62 (age: 25.7 years ± 4.13, height: 178.2 cm ± 6.41, body mass: 81.7 kg ± 10.28), females = 5 (age: 26.5 years ± 3.27, height: 164.4 cm ± 10.44, body mass: 66.6 kg ± 10.29)
  o Class 2: males = 47 (age: 26.8 years ± 5.98, height: 179.7 cm ± 9.11, body mass: 81.8 kg ± 12.28), females = 7 (age: 26.4 years ± 6.32, height: 165.0 cm ± 8.70, body mass: 66.0 kg ± 12.18)
  o Class 3: males = 52 (age: 26.8 years ± 5.42, height: 175.9 cm ± 6.96, body mass: 81.9 kg ± 10.29), females = 8 (age: 26 years ± 3.63, height: 164.4 cm ± 8.06, body mass: 67.8 kg ± 10.55)

• Despite the nature of law enforcement academy, all of the classes began their academy training with different fitness levels at least in one assessment. Class 1 (34.7%) was significantly lower than Class 2 (17.4%) and Class 3 (26.3%) in week 0 and week 26 significantly slower on 75 PR, while the other two classes showed no improvement. Classes 1 and 2 significantly improved their MT distance (8% and 16%, respectively), while Class 2 showed no improvement in MT distance (0% change). All three classes completed significantly more shuttles on the MBT (Class 1: 31; Class 2: 75; Class 3: 74%). Given the major improvements in the MT, lack of improvement in MBT for one class, and lack of change or decrease in performance in the 75 PR (even for Class 3 which started with a significantly slower performance in 75 PR).

• The data indicated that there were major improvements in the MT of all three classes, a lack of improvement in MBT for Class 2 (MBT distance decreased, however it was not statistically significant), and lack of change or even decreases in performance in the 75 PR (even for Class 3 which started with a significantly slower performance in 75 PR).

• These results suggest that the physical training programs implemented for these academy classes consistently focused on improving aerobic power. This would suggest a greater implementation of interval running and long slow distance running, which is typical of law enforcement academies (1,4).

• However, the data also suggests that training staff did not focus on developing recruits' anaerobic capacities in a consistent manner. Given the majority of law enforcement job tasks tend to be anaerobic in nature, physical training programs should consider an increased focus on anaerobic training during academy job role readiness for recruits. Future research should investigate the performance benefits of training programs that take into account, among others, anaerobic and endurance development.

CONCLUSIONS

• Significant (p < 0.05) improvement in performance from pre-academy to post-academy
• Significant (p < 0.05) decrease in performance from pre- to post-academy.
• Significant improvements (p < 0.05) greater than the other two classes in pre-academy assessments.
• Class performed significantly (p < 0.05) poorer than Class 1.

Figure 1. MT distance from pre-academy assessment to post-academy assessment for three classes.

References


