# Profile of Two Different Applicant Test Batteries with Regards to Sex and Age in Successful Law Enforcement Applicants

Dulla, Joe; Lockie, Robert G.; Schram, Ben; Orr, Rob Marc

**Profile of Two Different Applicant Test Batteries with Regards to Sex and Age in Successful Law Enforcement Applicants**

Joseph Dulla[1,2], Robert Lockie[3], Ben Schram[1,2] & Robin Orr[1,2]

*[1]Faculty of Health Sciences & Medicine, Bond University, QLD, Australia: [2]Tactical Research Unit, Bond University, QLD, Australia: [3]Department of Kinesiology, California State University, Fullerton, Fullerton, CA, USA.*

**Purpose:** Law enforcement applicant assessments and initial academy training are extremely diverse and vary greatly across the United States of America (USA), with 820+ academies operating across 50 different states with an additional 35+ federal agency law enforcement initial training academies. Population increases in obesity and the impact of COVID-19 make it imperative to create benchmarks for applicant physical performance. The aim of this study was to create a "point-in-time" descriptive profile of the physical performance of law enforcement (LE) applicants and determine any general differences between males, females, and chronological age using two applicant test batteries (ATBs). **Methods:** Archival data from one large USA LE academy were analysed. Applicants completed one of two ATBs; ATB1 (n=1674): 68.8-meter agility run (AR), 60-s push-ups, 60-s sit-ups, 60-s arm ergometer revolutions, and 2.4-km run; ATB2 (n=355): AR, 60-s push-ups, 60-s sit-ups, and a multistage fitness test (MSFT). Data were coded for biological sex and age. Independent samples t-tests were used to compare between sexes. A one-way ANOVA with Bonferroni post hoc analysis compared age groups. **Results:** Males outperformed females in all fitness assessments across both ATBs ($p \leq .02$). Sex combined age group data is shown in Table 1. The 18-24 year age group demonstrated faster run times in the AR and 2.4km for ABT1 compared to all groups. In ATB2, the 18-24 year group was faster in the AR compared to all other groups except the 25-29 year group. **Relevance:** Regardless of the ATB used, females and older applicants, in general, would benefit from specific fitness training to better prepare for academy, especially given challenges imparted by demographic changes and COVID-19. Further, older applicants may experience greater challenges in running tasks, especially those involving sprinting, which could also be impacted by qualities important for running/sprinting (i.e., maximal strength and power).

Table 1: Means and standard deviations of ATB1 and ATB2 by age groups. Subject numbers (n) reported for each age group respectively.

| **Age Group** (males and females combined) | **18-24** | **25-29** | **30-34** | **35-39** | **40+** |
|---|---|---|---|---|---|
| **ABT1 (n= 1674)** | | | | | |
| Agility (s; n=671, 626, 218, 77, 81) | 17.25 ± 1.15* | 17.51 ± 1.22# | 17.63 ± 1.20^ | 17.96 ± 1.27 | 18.28 ± 1.22 |
| Push-ups (no.; n=672, 626, 218, 77, 81) | 41.79 ± 13.80 | 40.73 ± 13.66 | 41.29 ± 14.17 | 40.35 ± 12.42 | 41.36 ± 13.33 |

| | | | | | |
|---|---|---|---|---|---|
| Sit-ups (no.; n=672, 625, 218, 77, 81) | 40.05 ± 9.34 | 39.44 ± 8.89 | 39.69 ± 8.63 | 39.39 ± 9.09 | 38.21 + 9.10 |
| Arm Erg (no.; n=672, 625, 218, 77, 81) | 127.29 ± 19.11 | 129.97 ± 51.90 | 127.66 ± 19.12 | 128.86 ± 17.59 | 132.60 ± 17.82 |
| 2.4km Run Total Seconds (n=666, 619, 217, 77, 80) | 760.11 ± 91.87* | 776.29 ± 98.27 | 788.91 ± 97.95 | 794.23 ± 90.18 | 793.69 ± 100.26 |
| **ABT2 (n=355)** | | | | | |
| Agility (s; n=153, 121, 47, 16, 18) | 17.18 ± 1.03$ | 17.38 ± 1.17# | 17.80 ± 1.17 | 18.51 ± 1.21 | 18.22 ± 0.77 |
| Push-ups (no.; n=153, 121, 47, 16, 18) | 43.99 ± 13.52 | 43.58 ± 14.47 | 47.72 ± 16.34 | 46.0 ± 12.32 | 43.44 ± 14.66 |
| Sit-ups (no.; n=153, 121, 47, 16, 18) | 41.07 ± 8.89 | 39.33 ± 9.16 | 40.74 ± 11.50 | 39.0 ± 7.66 | 44.72 ± 11.02 |
| MSFT (no. of shuttles; n=153, 121, 47, 16, 18) | 49.21 + 15.69 | 49.52 + 16.64 | 45.57 + 14.34 | 41.13 + 10.98 | 50.06 + 9.21 |

* Significantly faster than 25-29, 30-34, 35-39, and 40+.
# Significantly faster than 35-39 and 40+.
^ Significantly faster than 40+.
$ Significantly faster than 30-34, 35-39, and 40+.