Relationships between the 1.5-mile Run and Multi-stage Fitness Test in Deputy Sheriff Recruits Post-Academy Training
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**ABSTRACT**

The most popular method for measuring aerobic fitness within US law enforcement agencies (LEA) is the 1.5 mile run (1.5M run). A limitation of the 1.5M run lies in its inability to distinguish between the various fitness components (i.e., aerobic capacity, muscular strength and endurance) and the level of fitness required for the unique demands of LEA recruits and officers, and is externally paced which does not allow the individual to perform at a pace they are comfortable. Academics training is used to prepare recruits for the unique demands of LEA recruits and officers, and the level of fitness required for their unique demands.

**METHODS**

- Retrosp ective analysis was conducted on five academy classes of LEA.
- This sample was comprised of 261 recruits (age: 26.59 ± 5.06 years; height: 1.74 ± 0.08 m; body mass: 83.18 ± 14.77 kg), which included 227 males (age: 26.63 ± 5.19 years; height: 1.76 ± 0.07 m; body mass: 83.40 ± 13.34 kg) and 34 females (age: 26.26 ± 4.12 years; height: 1.63 ± 0.07 m; body mass: 67.94 ± 11.90 kg).
- The 1.5 M run and MSFT were conducted in the last few weeks of the recruits’ 22-week academy training.
- Time was recorded for the 1.5 M run while total shuttle scores were recorded for the MSFT.
- Estimated maximal aerobic capacity (VO2max) was calculated from both tests. The VO2max calculated from the 1.5 M run was significantly greater than those for the MSFT for both recruits and officers (r² = 0.44 for both groups).
- The Pearson’s correlation and linear regression scatter plots calculated relationships between the 1.5 M run and MSFT.
- Each sex was analyzed separately, with p<0.05 set for statistical significance.

**RESULTS**

- The VO2max calculated from the 1.5 M run were significantly greater than those for the MSFT for both males (47.04 ml/kg/min vs. 40.88 ml/kg/min; Figure 1), and females (43.16 ml/kg/min vs. 37.02 ml/kg/min; Figure 2).
- The r² values from the regression equations for males (0.24), and females (0.10) were both low.

**CONCLUSIONS**

- The results suggest that recruits performed relatively better in the 1.5 M run compared to the MSFT.
- Their physical training program tended to emphasize calisthenics, interval running circuits that lacked evidence-based work: rest ratios, and distance running; this could have impacted these results.
- As previously mentioned, the 1.5 M run may not accurately match the job demands of a deputy sheriff. The 1.5 M run allows the recruit to set their own pace, and has limited high-intensity components.
- Considering the fact that the MSFT has external pacing and a more pronounced high-intensity component, this test may be a better fit to indicate career preparations for a deputy sheriff recruit.
- Since the job demands of a deputy sheriff are externally paced by nature, the outcomes shown from the data in this study is not ideal. Academy training programs should explore the use of evidence-based high-intensity running programs.