Loss of Fitness in Serving Law Enforcement Officers: A Critical Review
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The Kennelly grading system was used to grade the quality of each article, where the mean grade was 72.16%. Of the articles included in this critical review, eight were graded as ‘good’ and four were graded as ‘fair’.

### Results

#### Body fat

Percent body fat was reported in two articles. Boyce et al. (2008 & 2012) showed an average increase in body fat percent of 5.1% and 4.6% in female and male incumbent officers, over a 12.5 year period.

Evaluating *aerobic capacity*, Sorensen et al. (2000) showed there was an average decrease in male incumbent officers’ VO2max of 4.4ml/min/kg. While, Orr et al. (2017) measured the 1.5-mile run showing that on average, female and male recruits were 1.7 minutes and 0.47 minutes faster than their gender matched incumbent counterparts.

Evaluating *anaerobic capacity*, Orr et al. (2017) also showed female incumbent officers were on average 2.7 seconds faster at the 300-meter run than female recruits, while male incumbent officers were on average 7.7 seconds slower than male recruits.

#### Bench press strength

Bench press strength was reported by three articles. Boyce et al. (2009 & 2014) showed that when comparing male and female recruits to incumbent officers, female incumbent officers averaged 4.8 kg more and males averaged 13.6 kg more than recruits on 1-repetition max bench press (1RM bench press). While, Orr et al. (2017) showed that female incumbent officers averaged 12.4 kg less and male incumbent officers averaged 2.9 kg less than recruits at 1RM bench press.

#### Sit-up repetitions

Sit-up repetitions were reported by two articles. Sorensen et al. (2000) showed an average decrease of 3.4 reps among incumbent officers over a 15 year-period. Orr et al. (2017) showed that female incumbent officers averaged 6.4 reps less and males averaged 7.1 reps less when compared to recruits.

Push-up repetitions were reported by two articles. Sorensen et al. (2000) showed an average decrease of 3.4 reps among incumbent officers. Orr et al. (2017) showed an average decrease of 18.4 reps for females and 12.5 reps for males when comparing recruits and incumbent officers.

#### Discussion

Many studies provided retrospective data and were unable to randomize participants. Therefore decreasing the quality of the scores. The researchers believe this may have skewed the appraisal scores.

Studies included in this critical narrative review varied greatly in their use of fitness measures. This made it difficult to infer conclusions when comparing results between studies. Many studies provided data from two time points monitoring the change in fitness after completion of a physical fitness program.

According to current literature, it appears incumbent police officers increase body fat and bench press strength, while showing a decrease in aerobic capacity, sit-up and push-up repetitions.

There is limited research specifically evaluating the changes in fitness characteristics amongst incumbent police officers, throughout their serving career. The evidence base that exists, includes conflicting results.

## References