

Development of Physical Fitness Standards for Younger and Older Canadian Forces Personnel

JM Stevenson, JT Bryant, JM Deakin and JT Smith
Ergonomic Research Group, Queen's University, Kingston, Ontario, Canada

ABSTRACT

The purpose of this study was to develop minimum physical fitness standards based on common task criteria for younger and older (<35 years) personnel in the Canadian Armed Forces. A random sample of 66 men and 144 women under 35 years of age, and 100 men and 76 women 35 years and older performed the Exercise Prescription (EX-PRES) test and five physically demanding tasks that simulated common military tasks. The (EX-PRES) measures were the step test as an indirect measures of muscular strength and endurance. The tasks were operationalized replications of a land evacuation, sea evacuation, low-high crawl, sand bag carry, and entrenchment dig. Older personnel were restricted, for safety reasons, to 90% maximal predicted heart rate during simulated task.

Common cutting scores were selected as the point at which 75% of the total weighted sample passed each task. Since there were significant differences between the sexes in task performance and technique execution, the groups were analyzed separately. Correlational, regression and discriminant analyses were performed by group and gender. Results indicated a range in variance of 14 to 55% between military task performance and physical fitness test score, thus suggesting that fitness measures are a poor predictor of task performance. Because of the low amount of variance explained by fitness measures, the passing group for each task was treated as a representative sample of subjects whose fitness profiles were indicative of those able to meet task criteria. The 5th percentile fitness scores of the passing group were proposed as the minimum fitness standard. The minimum fitness standard has a greater impact on women than on men but was representative of the passing groups for both sexes.