

Changes in Health and Physical Fitness Parameters After 6 Months of High-intensity Group Exercise in Firefighters: Preliminary Data

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Category: Doctoral

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ABSTRACT

The physical demands of firefighting require the men and women employed in this profession to be in optimal physical condition to perform their jobs proficiently, as well as to mitigate the risk of injury. Every year, the city of Addison, TX, budgets many thousands of dollars to the compensation plan for first responders. Most of the funding is used for rehabilitation services due to work related injuries. **PURPOSE:** While many of these injuries are unavoidable due to the inherent risks of the profession, ensuring proper physical fitness is one of the most effective methods to reduce many of these impairments. The purpose of this preliminary study was to characterize health and fitness parameters in 18 professional firefighters from the city of Addison, TX, prior to a 6-month training program. **METHODS:** Upon arrival, all participants underwent testing in the following order: body composition, range of motion, anaerobic power, muscular endurance, and cardiorespiratory fitness. All participants also completed a detailed health history questionnaire and answered questions specifically addressing chronic low back pain. **RESULTS:** The following values were attained from testing: total body fat: 30.1±9.7%; flexibility: 24.9±6.3 cm; peak power: 1068.7±272.9 W; mean power: 636.9±143.4 W; time to peak power 0.57±0.35 sec; pushup: 28.8±14.9; curl up: 22.1±15.8; VO_{2max}: 34.1±5.1 ml/kg/min. **CONCLUSION:** Based off the comparison of reported means and ACSM's fitness norms, it can be concluded that improvements are necessary in body composition, muscular endurance, range of motion and cardiorespiratory fitness. With improvements in these physiological variables, tactical performance may be optimally performed in a safer manner.