SWACSM Abstract

How does diet quality predict the performance of ROTC cadets on the ACFT

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ABSTRACT

The Army Combat Fitness Test (ACFT) is a newly developed test assessing U.S. Army soldiers' combat readiness. The Healthy Eating Index 2015 (HEI-2015) is a questionnaire established by the USDA that quantifies overall diet quality. The HEI-2015 uses a scale of 0 to 100 with higher scores aligning more with the recommendations from the Dietary Guidelines for Americans. The HEI-2015 is comprised of 13 subcategories: Total Fruits [TF], Whole Fruits [WF], Total Vegetables [TV], Greens and Beans [GB], Whole Grains [WG], Dairy [D], Total Protein foods [TP], Seafood and Plant Proteins [SPP], Fatty Acids [FA], Refined Grains [RG], Sodium [S], Added Sugars [AS], and Saturated Fats [SF]. **Purpose:** The purpose of this cross-sectional study is to determine if diet quality can predict performance outcomes of the ACFT in ROTC cadets. **Methods:** ROTC cadets (31 males, 21 females; aged 20.5 ± 2.2 years) completed the 6-event ACFT (3-repetition maximum trap-bar deadlift [MDL], standing power toss [SPT], hand-release pushups [HRPU], sprint-drag-carry [SDC], plank [PLK], and 2-mile run [2MR]). The cadets were invited into the laboratory to complete the HEI-2015. The ability of the HEI-2015 to predict ACFT performance was determined with a linear regression model. Significance was set at $p < 0.05$. **Results:** HEI-2015 total score was significantly and positively correlated to ACFT total score, showing ($r = .319$, $p = .014$). Subcategories of the HEI-2015 were positively and significantly correlated with ACFT total scores, GB ($r = .326$, $p = .012$), SPP ($r = .349$, $p = .007$), and FA ($r = .263$, $p = .044$). HEI-2015 total score significantly explained 10% ($p = .014$) of the variance on the ACFT total scores with a beta coefficient 3.121. **Conclusion:** HEI-2015 total score, GB, SPP, and FA are all predictors of the ACFT total score. This data shows that overall diet quality is an important factor in determining a soldier's combat readiness. For every 1.2 point increase in HEI-2015 total score, it is predicted that ACFT total score will increase by 3.1 points.