Nutrition and training habits associated with the strongest and fittest Special Operation Forces Operators
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Special Operation Forces (SOF) participate in strenuous and demanding physical and tactical training. Identifying nutrition and training habits associated with improved strength, power and endurance in SOF is important in improving military readiness and may guide human performance training and fueling programs. **PURPOSE:** To identify variables associated with high physical performance in SOF Operators. **METHODS:** A total of 595 SOF Operators (Age: 27.2 ± 5.5 yrs, Height: 178.6 ± 6.5 cm, Mass: 84.8 ± 9.9 kg, Body Fat: 16.9 ±5.4%) underwent strength and physiological testing and completed a detailed nutrition and physical activity questionnaire, including a 24-hour diet recall. Nutrient intake was assessed using an automated self-administered 24-hour diet recall and diet quality was evaluated using the 2010 Healthy Eating Index (HEI). Subjects were ranked based on their performance on the following six laboratory tests: isokinetic strength (knee extension (KE), shoulder internal rotation (SIR), and torso extension (TE)), aerobic capacity (VO2max), anaerobic power (PAnP) and capacity (MAnP) with comparison made (independent samples t tests) between the top and bottom 10% based on overall ranking. Analysis of covariance (ANCOVA) was used to compare BF between groups after adjusting for age. **RESULTS:** Operators in the Top 10% were significantly younger (23.9 ± 3.0, 32.2 ± 7.2 yrs, p<0.001), were lower in body fat (13.9 ± 3.3, 21.2 ± 5.5%, p<0.001), higher total exercise volume (103.0 ± 69.0, 70.3 ±32.0 MET hrs/week, p=0.024), greater in strength training volume (48.4 ± 29.3, 34.3 ± 25.8 MET hrs/wk, p=0.046), consumed more daily carbohydrates (4.3 ± 1.7, 3.1 ± 1.5 g/kg body wt, p=0.002) and more seafood/plant protein foods (3.2 ± 2.2, 1.9 ± 2.1 HEI score, p=0.009). **CONCLUSION:** These findings demonstrate that the fittest and strongest Operators based on strength and physiological assessments are younger, have less body fat, partake in higher total and strength training volumes and consume diets higher in carbohydrates and seafood/plant proteins perform better. Future research should focus on examining the interrelationship that body fat, diet and training have on performance and injury in SOF. Supported by FMC/AFRL FA86501226271, ONR N00014-11-1-0929, USAMRMC W81XWH-11-2-0020