Lower body fat improves physical and physiological performance in Army soldiers
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In the Army the maximal allowable percent body fat varies depending on gender and age, ranging between 30-36% for female and 20-26% for male. However, the Army Weight Control Program policy stipulates all soldiers are encouraged to achieve the more stringent Department of Defense (DOD) goal, which is 18% body fat for males and 26% for females.

PURPOSE: To determine if active duty soldiers who meet the DOD body fat goals perform better on physiological, musculoskeletal, and Army Physical Fitness tests (APFT) compared to soldiers who exceed the standards.

METHODS: A total of 99 male 101st Airborne Division (Air Assault) soldiers (age=28±7.0 years, height=177±7.4 m, weight=82.9±12.4 kg) participated. Percent body fat (%BF) was assessed using air-displacement plethysmography. Based on the %BF, subjects were assigned to group 1 (body fat <18%) or group 2 (body fat >18%). Subjects completed a series of physical performance tests consisting of anaerobic power, anaerobic capacity, maximal oxygen consumption (VO2max), push-ups, sit-ups, two mile timed run test, shoulder internal and external rotation strength, and knee flexion and extension strength.

RESULTS: The mean %BF was 13.3±3.7% (group 1) and 25.8±5.2% (group 2). Subjects who met the DOD body fat goals (group 1) performed significantly better on seven of the 10 physical fitness tests including anaerobic capacity (8.3±0.6 w/kg; 7.2±1.0 w/kg; p<0.001), VO2max (52.2±5.4 ml/kg/min; 44.1±6.8 ml/kg/min; p<0.001), push-ups (78.2±18.5 reps; 65.7±13.9 reps; p=0.002), shoulder internal rotation (66.1±16.2 N/kg; 50.4±14.5 N/kg; p<0.001) and external rotation strength (45.4±7.7 N/kg vs. 36.6±7.4 N/kg; p<0.001), and knee flexion (127.9±23.9; 103.6±26.6; p<0.001) and extension strength (263.5±49.0 N/kg; 219.0±41.7 N/kg; p<0.001). CONCLUSION: Soldiers who met the DOD %BF goals performed better on physiological, musculoskeletal and Army APFT than soldiers who exceeded the standards. The higher performance on military physical readiness tests by soldiers with a lower percent body fat substantiates the need to continue to enforce stringent body fat standards for Army personnel in order to optimize military readiness.