Medical knee displacement (MKD) in females has been associated with increased risk for anterior cruciate ligament injury (ACL). It can be reliably detected using clinical movement screens and is readily modifiable through corrective exercise. The Overhead Squat (OHS) and Landing Error Scoring System (LESS) are both valid indicators of MKD.

**PURPOSE:** To determine concordance between evaluation of MKD from the OHS relative to the more dynamic LESS.

**METHODS:** Female U.S. Military applicants (N = 84, 20.6 ± 2.7 yrs, 161.4 ± 6.7 cm, 60.4 ± 8.3 kg) from the Baltimore MEPS performed the OHS and LESS prior to entering military basic training. MKD for both tests was evaluated dichotomously: 0 indicating no MKD and 1 indicating the presence of MKD. The OHS was evaluated in real time. MKD on the LESS was evaluated at maximum knee flexion. McNemar’s Test for non-homogeneity was performed to determine paired proportions of MKD between the OHS and LESS.

**RESULTS:** A total of 55 females (65.4%) displayed MKD on the OHS, and 76 females (90.5%) had MKD on the LESS. McNemar’s test showed non-homogeneity for MKD detection on both the OHS and LESS (X² = 15.21, p = 0.001); the majority of females (60.7%, n = 51) who displayed MKD on the OHS also displayed MKD on the LESS. However, 29.8% (n = 25) of females who displayed MKD on the LESS did not display MKD on the OHS. Only 4 (4.8%) females did not display MKD on either screen.

**CONCLUSION:** The OHS and LESS are both commonly used clinical screens for assessing MKD, a risk factor for ACL injury in females. Although the majority of females who displayed MKD on the OHS also displayed it on the LESS, 29.8% only displayed MKD on the more dynamic LESS suggesting that MKD manifests differently between static and dynamic tasks. Both screens have been biomechanically validated as indicators of MKD, but the dynamic task requirements of the LESS may be more representative of sport-specific movement. Further analyses comparing injury rates in recruits with MKD detected by OHS versus LESS are pending. The LESS could be a more accurate test for assessing dynamic MKD as a readily modifiable risk factor for ACL injury in females.

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**Tactical demands of a Marine Corps Forces Special Operations Command (MARSOC) Operator require high levels of physical performance. During combat deployments, teams of Operators may be supplemented with Combat Support personnel (CSP), who specialize in mission-specific tasks. MARSOC Operators and CSP may serve alongside each other in extreme combat environments, often enduring the same physical demands; however, they do not go through the same tactical training.**

**PURPOSE:** To examine the differences in physical and physiological characteristics between MARSOC Operators and CSP.

**METHODS:** Testing including body composition (BF), anaerobic power (PAnP), anaerobic capacity (MAPC), aerobic capacity (AC), and knee and torso isokinetic strength testing (KF, KE, TF, TE) were collected on ~42 Operators (Age: 28.4 ± 6.1 years, Height: 178.8 ± 6.7 cm, Mass: 85.4 ± 7.9 kg) and 19 CSP (Age: 28.0 ± 7.1 years, Height: 178.0 ± 6.0 cm, Mass: 81.4 ± 11.3 kg). Differences between groups were evaluated using independent samples t-tests, or Mann-Whitney U tests if required (p < 0.05).

**RESULTS:** Operators demonstrated greater physiological performance in MAPC (9.2 ± 9 W/kg, 8.0 ± 1.3 W/kg; p = .001), and AC (51.8 ± 4.4 ml/kg/min, 47.7 ± 5.6 ml/kg/min; p = .009). Operators also demonstrated greater right KF (139.4 ± 27.4 %BW, 112.8 ± 26.9 %BW; p = .005), left KF (132.3 ± 25.7 %BW, 113.3 ± 29.1 %BW; p = .007), right KE (263.3 ± 47.5 %BW, 218.4 ± 60.7 %BW; p = .002), left KE (250.8 ± 50.7 %BW, 215.4 ± 54.3 %BW; p = .011), TF (231.1 ± 35 %BW, 198.1 ± 37.8 %BW; p = .002), and TE (404.2 ± 101.8 %BW, 355.3 ± 50.2 %BW; p = .019). No significant differences were found in BF and PAnP.

**CONCLUSION:** Results exhibit significant discrepancies in physical and physiological performance between Operators and CSP. These findings suggest the need for CSP to incorporate additional training designed to enhance their ability to maintain performance at a higher standard, similar to that of Operators. Special operations teams require all personnel to perform as a unit; not having all team members perform at the required physical levels may be detrimental to the mission and all members of the combat team. Future research is needed to examine the physiological and physical dichotomy between Operators and CSP and minimum necessary standards to achieve successful tactical performance.

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**Most college physical activity classes fall short of providing enough physical activity to meet the ACSM’s current minimum weekly recommendations for physical activity. Since these courses are only 3-4 months in length, there is a question regarding the ability of these courses to produce physiological changes that have potential health benefits.**

**PURPOSE:** The purpose of this study was to examine changes in body composition, aerobic fitness, and muscular strength in college students following a single semester physical activity class.

**METHODS:** Sixty four females (BMI = 25.4 ± 5.8, age = 21.2 ± 2.7 yrs) and 47 males (BMI = 27.7 ± 7.4, age = 21.7 ± 2.9 yrs) were enrolled in one of five different physical activity courses. All courses met for 50 minutes, twice per week. These courses consisted of weight training, circuit training, body weight training, and cross training and were designed to stress different energy systems on different days. Students were also encouraged to continue physical activity outside of class hours. The following measures were obtained during the first two and last two weeks of classes; resting heart rate, body weight, height, body composition (bioelectrical impedance), 1.5 mile run, hand grip strength, and a push-up test. Pre- and post-test comparisons were made using paired t-tests.

**RESULTS:** As a group, there were significant decreases in resting heart rate (4.3 ± 1.5 bpm), 1.5 mile run time (1:01 ± 0:30 min) and significant increases in hand grip strength (3.4 ± 1.2 kg) and push-ups completed (3.9 ± 0.8). In females, there was a significant decrease in 1.5 mile run time (1:05 ± 0.5 min) and a significant increase in push-ups completed (4.4 ± 1.0). In males, there was a significant decrease in heart rate (5.1 ± 2.3 bpm) and 1.5 mile run time (0:57 ± 0.5 min) and significant increases in hand grip strength (7.5 ± 2.4 kg) and push-ups completed (3.2 ± 1.3). There were no significant changes in body weight, BMI, or body composition.

**CONCLUSION:** The results of this study indicate that college-aged participants can achieve significant increases in aerobic fitness and muscular strength by participating in a general physical activity class.