RESULTS: The women scored from 27-89% of the men's CFC ability (raw score means).

Groupn = ( ) HT/WT% Body Fat	**3-DLlbs(±SD)**	**DLWt/reps**	**BPWt/reps**	**SLJcm**	**65BPR reps**	**40SQRreps**	**0-20secs**	**PROsecs**	**300Msecs**	**ROWsecs**	**LTreps**	**5CPUreps**	**2MRsecs**
ALL(263) 69/16614.9%	264.0(62.8)	217(36.8)10.4(5.5)	134.0(26.4)10.4(6.7)	224.4(30.0)	55.3(27.7)	76.8(35.5)	3.29(.34)	4.95(.48)	65.3(7.3)	109.4(15.2)	11.2(6.1)	7.6(4.5)	875.3(102.4)
Women(75) 66/14420.2%	193.1(28.7)	168.7(31.8)8.0(3.5)	99.8 (14.2)4.5(3.9)	194.0(30.0)	22.7(12.2)	55.3(36.3)	3.54(.36)	5.36(.43)	71.9(6.9)	124.9(15.8)	4.4(3.6)	2.6(2.4)	954.9(107.2)
Men(188) 70/17512.7%	292.2(48.8)	236.4(13.5)11.4(5.9)	147.7(15.4)12.8(6.1)	236.5(19.7)	68.4(20.5)	85.4(31.4)	3.18(.27)	4.79(.39)	62.6(5.6)	103.2(9.4)	13.8(4.6)	9.6(3.5)	843.6(81.3)
% of MenPerformance	66.1	71.4	67.6	82.0	33.2	64.8	88.7	88.1	85.1	79.0	31.9	27.1	86.8
LBM: r^2 **All**	.58	.53	.55	.34	.47	.11	.17	.27	.25	.46	.14	.14	.07
LBM: r^2 **Women**	.35	.33	.11	.21	.32	.03	.15	.12	.09	.18	.03	.003	.05
LBM: r^2 **Men**	.26	0.1	.19	.02	.09	.003	.0003	.04	.02	0.2	.06	.07	.009

DISCUSSION: The robust CFC demonstrated women performed 65% of male ability. This finding is similar to our 2020 ACFT performance data differences (72%). Women scored lowest in upper body strength & LT & 5CPU; suggesting training specificity should be emphasized. Lack of LBM influence in men on 40SQR, 0-20, 2MR, 300M forward/backward sprint, & women (5CPU); these tests offer a possible "clean metric" that is not unduly influenced by body composition; an important consideration in assessing fitness.
CONCLUSIONS: CFC is a robust assessment that complements other military readiness tests (ACFT, Air Force PT). Further, the CFC highlights strengths & weaknesses of performance, offers fair fitness standards & sets the training framework for more arduous military applications.

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Effect Of Protein Supplementation On Dietary Intake, Muscle Function And Soreness During Military Field Exercise

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PURPOSE: Military training can result in negative energy balance, low energy availability (≤ 30 kcal·kg $FFM^{-1}·d^{-1}$), negative protein balance and muscle damage. This study investigated the effect of a high protein dietary supplement on ad libitum energy and macronutrient intake, muscle function and muscle soreness, during an arduous military field exercise.
METHODS: Thirty male British Army Officer Cadets were randomly assigned to a control (CON; n=15, mean ± SD; age 23 ± 2 y, body mass 80.8 ± 6.6 kg) or supplementation group (SUP; n=15, age 25 ± 3 y, body mass 84.4 ± 12.5 kg). Both groups consumed food ad libitum during a 2-day field exercise and a 4-day post-exercise recovery period. SUP were also provided two protein-rich bars (434 kcal, 46.6 g protein, 27.2 g carbohydrate and 16.4 g fat) per day during field exercise and recovery. Energy expenditure was estimated using a tri-axial accelerometer and energy intake was estimated from food diaries and food wrappers. Isometric mid-thigh pull force, isokinetic knee extension/flexion peak torque, and muscle soreness and perceived fatigue were measured at baseline, and after field exercise and recovery.
RESULTS: For energy balance and energy availability there was a main effect of time, but no group or group x time interaction, where participants were in greater negative energy balance (CON: −3717 ± 687, SUP: −3638 ± 1194 kcal·d^{-1}) and lower energy availability (CON: −30 ± 8, SUP: −21 ± 16 kcal·kg $FFM^{-1}·d^{-1}$) during field exercise. Protein intake was greater in SUP compared to CON during field exercise (CON: 56 ± 22, SUP: 105 ± 30 g·d^{-1}; $p<0.001$) and recovery (CON: 125 ± 37 vs. SUP: 161 ± 35 g·d^{-1}; $p<0.05$) as desired. Isometric knee extension at a velocity of 180 °/s was 6% greater during recovery than during FEX only, but with no difference between groups. There was no significant difference in any other muscle function measures between conditions or group (all $p > 0.05$). Muscular soreness and fatigue were increased after FEX ($p < 0.05$), irrespective of group ($p > 0.05$).
CONCLUSIONS: The provision of a high protein dietary supplement during a military field exercise increased protein intake, but did not attenuate the energy deficit or improve muscle function or soreness.

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Heart Rate Variability In Monitoring Special Forces Military Personnel: Preliminary Results Of A Cross-sectional Study

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PURPOSE: Heart rate variability (HRV) is a simple, non-invasive, real-time and highly reproducible measurement that represents a significant indicator for assessing a health and physical condition, according to the protocols of the European Society of Cardiology (ESC) and the North American Society of Electrophysiological Stimulation (NASPE). Few studies so far on heart rate variability in active duty military personnel.
METHODS:
112 male soldiers were enrolled, in the period between March and December 2019, and divided into six subgroups: office work (control group), internal night work, external night work, paratroopers, snipers with and without evaluation. Measurements were made with the Zephyr BioHarness 3 device. Raw data was analyzed with Kubios HRV software.
RESULTS: The results of multi:le comparisons of the HRV parameters between the different subgroups showed significant differences for all the considered HRV parameters ($p <0.05$). Mean HR was significantly higher in skydivers and both subgroups of sharpshooters. Similarly, all the measured time and frequency-domain parameters, SDNN, RMSSD VLF, LF power, HF power, and PNS index were significantly higher in the control group than paratroopers and shooters but not compared to night work (both internal and external). Young age, as well as drug intake, relates with higher HRV levels. No associations were found between smoking habits and HRV parameters, possibly due to the ban on smoking during work. In spite of what was expected, as reported in the literature, night work did not affect HRV parameters, showing no statistically significant differences compared to the control group.
CONCLUSIONS Highly demanding work tasks, such as paratroopers and sharpshooters, involve a significantly higher stress index and SNS index than the control group. The intake of non-steroidal anti-inflammatory drugs (NSAIDs) modifies cardiac regulation, linked to the sympathetic component, as evidenced by the reduction in the HR and SNS index.