



Efficacy of a 12-Week Virtual ACFT Training Program with National Guard Recruits

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INTRODUCTION

The Army Combat Fitness Test (ACFT) is the newest fitness assessment consisting of 6 physically demanding gross motor movements that parallel the palpable stressors with which are placed upon a modern-day combat soldier. To determine the efficacy of a 12-week virtual exercise program on individual and overall ACFT scores. The virtual coach provides detailed explanations and education of strength and conditioning principles, visual stepwise demonstrations of exercise techniques, and proper verbal cueing of exercises using only the TRX® Elite ACFT Kit which contains one suspension trainer and four elastic resistance bands. The TRX® Elite software application is designed to improve overall physical conditioning, while mitigating MSK injuries of recruits and soldiers training for the ACFT.

METHODS

Thirteen soldiers from the Army National Guard (Age = 29.8 ± 6.2 yrs; Height = 175.7 ± 6.1 cm; Service Experience = >18 mos to 18 yrs) volunteered to complete 3 Sessions. In Session 1, baseline height, body mass, body composition, and ACFT scores were collected. Session 2 was a suspension trainer tutorial in which all participants completed. Upon completion of Session 2, a TRX® Elite ACFT Kit containing 1 suspension trainer, 4 resistance bands, and the 12-week virtual exercise training program available via iOS and Android were given to all participants. In Session 3, post-assessments of body mass, body composition, and ACFT scores were collected. Data was statistically analyzed using a paired sample t-test with a Bonferroni correction (p < .00065) to adjust for multiple comparisons.



ACFT ASSESSMENT

3 Repetition Maximum Deadlift	Deadlift the maximum weight possible three times.
Standing Power Throw	Throw a 10-pound medicine ball backward and overhead for distance.
Hand Release Push-Up - Arm Extension	Complete as many Hand-Release Push-ups as possible in two minutes
Sprint-Drag-Carry	Conduct 5 x 50-meter shuttles for time - sprint, drag, lateral, carry and sprint
Plank	Maintain a proper plank position for as long as possible
Two-Mile Run	Run two miles for time on a measured, generally flat outdoor course.

RESULTS

There were no significant changes in mean body mass (83.8 ± 16.5 kg vs 83.9 ± 16.6 kg; p = .752); however, there was a significant reduction in mean percent body fat (19.5 ± 6.4% vs 18.3 ± 6.5%; p < .0001). Mean scores from 4 of the 6 individual ACFT assessments, specifically, deadlift, standing power throw, hand-release pushups, and sprint-drag-carry displayed improvements, however, did not attain statistical significance. Overall mean ACFT scores displayed significant improvements (319.4 ± 39.9 vs 390.4 ± 68.5; p < .0001).

Table II. Descriptive characteristics of all participants (N = 13).

Variables	Males (n = 11)	Females (n = 2)	Total (N = 13)
Age (yrs)	32.0 (3.6)	18.0 (0.0)	29.8 (6.2)
Height (cm)	177.1 (5.5)	167.6 (0.0)	175.7 (6.1)
Body Mass (kg)	88.2 (13.7)	59.8 (6.6)	83.8 (16.5)

Data are presented in Mean (Standard Deviation).

Table III. Paired t-test (mean ± stdev) between Sessions 1 and 3 for all participants.

Metric	Pre-Assessment	Post-Assessment
Body Mass (kg)	83.8 (16.5)	83.9 (16.6)
Body Fat (%)	19.5 (6.4)	18.3 (6.5)*
3-Repetition Maximum Deadlift (kg)	243.8 (68.2)	257.3 (71.3)
Standing Power Throw (m)	10.1 (2.8)	10.3 (2.6)
Hand Release Pushup (reps)	37.9 (9.9)	41.8 (7.5)
Sprint-Drag-Carry (min:sec)	2:08 (0:25)	1:59 (0:24)
Two-Mile Run (min:sec)	18:45 (1:34)	19:01 (3:09)
Overall ACFT Scores	319.4 (39.9)	390.4 (68.5)*

* p ≤ 0.0001
 Data are presented in Mean (Standard Deviation).

CONCLUSION

The TRX® Elite ACFT Kit which includes 1 suspension trainer, 4 varying resistance bands, and on-demand access to a stepwise 12-week virtual exercise program was deemed effective by increasing the overall mean ACFT scores amongst participants. From a practitioner's perspective, the TRX® Elite ACFT Kit should be widely distributed to all Army units and recruiting commands to provide vital assistance for recruits and soldiers to train and prepare for the ACFT. Moreover, given the ease and portability of the TRX® Elite ACFT Kit, recruits and soldiers will be able to effectively train anytime, anywhere.

REFERENCES

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