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Comprehensive Physical Activity Assessment of U.S. Army Initial Entry Training Using a Three-Tier Model

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Initial entry training (IET) is a physically demanding environment that is the basis for ones' military career. Yet, despite the need for a better understanding of actual physical demands to help understand functional outcomes (e.g., injuries, attrition), quantifiable physical activity (PA) outcomes and qualitative contextual information is limited. **PURPOSE:** Characterize daily (0500 – 2000 h) IET-associated PA using a three-tier PA assessment: pedometry, accelerometry, and direct observation. **METHODS:** Over two distinct, 10-week IET cycles (n = 40 Trainees/Cycle), PA was quantified via hip-worn accelerometers (with pedometry), and direct observation (e.g, activity type, location, equipment carried/worn). Data were analyzed using mixed-model ANOVA with Bonferroni adjustments and presented as mean \pm SD. **RESULTS:** Of the intended 900 monitoring-min/d, 798 \pm 173 min/d (~89%, Cycle 1) and 821 \pm 76 min (91%, Cycle 2) were valid for analysis. Mean daily step count for Cycle 1 was 13,818 \pm 4,441 steps/d and 13,135 \pm 4,396 steps/d for Cycle 2. Mean daily accelerometer-assessed PA intensity was (aggregated between Cycle 1 and 2): Sedentary (1 – 2 METS): 505 \pm 96 min/d (55% of daily); Light (2 – 3 METS): 210 \pm 49 min/d (24%); Moderate (3 – 5.99 METS): 168 \pm 47 min/d (20%); Vigorous (> 6 METS): 13 \pm 12 min/d (1%). The MVPA accounted for ~20% of daily PA (180 \pm 68 min/d). Time on feet (~50%) and sitting (20 – 25%) accounted for most of the daily activity types for both Cycles with no external load for 44% of the monitored day and daily loads of 2 – 13 kg carried 56% of monitored time. **CONCLUSION:** Daily step count was approximately 2-3 times higher than its civilian counterparts. Additionally, MVPA was 850-900 min/wk, satisfying weekly recommendations (150 min/wk) within one day. Trainees experienced a very high volume, physically active environment in IET. Next steps forward would entail merging actual IET outcomes (e.g., injury, lost duty time, attrition) with PA during IET to observe the mediating effect to these outcomes.

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