Assessing Physical Activity During a High Altitude Trek in Peru

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Mountain climbing and trekking at high altitude are becoming increasingly popular leisure pursuits. For most college students, a day hike is likely to elicit physical activity levels that far exceed what is achieved over the course of a typical day, yet this has not been objectively quantified. **PURPOSE:** To compare the physical activity levels of college students before and during a hiking excursion in Peru. **METHODS:** Physical activity was measured at sea level in a group of Towson University students using wrist-mounted accelerometers for 7 consecutive days. At the end of the spring semester, the students enrolled in a study abroad to Peru that included a 2-day, high altitude hike on the Inca trail. Prior to hiking, the students were fitted with accelerometers to assess physical activity during the 14-mile (Day 1: 8 miles; Day 2: 6 miles) hike. Total daily step counts and physical activity energy expenditure (PAEE) achieved during the hike were compared to sea level. **RESULTS**: Eight students (age 21 ± 2 years; M:3, F:5) completed the study. The average total daily step counts achieved during the hike was 26,635 ± 2,312 steps□day^{-1} (Day 1) and 22,326 ± 2,113 steps□day^{-1} (Day 2) versus 9,258 ± 1656 steps□day^{-1} at sea level (both p's < 0.01 compared to sea level). Similarly, PAEE during the hike was 2983 ± 917 kcal (Day 1) and 2797 ± 860 kcal (Day 2) versus 1395 ± 380 kcal at sea level (both p's < 0.01 compared to sea level) **CONCLUSION:** We found that when college students hiked the Inca trail, daily step counts and PAEE increased significantly from what was achieved at sea level. These data demonstrate the suitability of high altitude hiking for meeting physical activity recommendations and achieving positive health benefits.