

## Comparison of step test performance between Peruvian and American college students

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Cardiovascular disease accounts for 22% of total deaths in Peru. Increased aerobic fitness confers cardioprotection, yet fitness norms for citizens of Peru do not exist. **PURPOSE:** To compare step test performance of a group of Peruvian university students with the step test performance of a group of American students. **METHODS:** Undergraduate students who were currently enrolled in a Peruvian or American university participated in this study. Following the measurement of height and weight, all students performed a Queens College step test. Each student stepped at a predetermined cadence for 3 minutes, after which recovery heart rate was recorded and entered into a standardized regression equation to estimate  $VO_{2max}$ . None of the students reported playing competitive athletics. **RESULTS:** Eleven Peruvian (P) students (age  $22 \pm 2.1$  years; M:5, F:6) and 17 American (US) students (age  $21 \pm 1.6$  years; M:7, F:10) completed all aspects of the study. No difference in BMI was observed between the groups (P:  $23.7 \pm 2.9$  vs. US:  $23.2 \pm 2.6$ ;  $p = 0.63$ ). The mean estimated  $VO_{2max}$  for Peruvian women ( $35.8 \pm 3.8 \text{ ml}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$ ) was lower than the mean for American women ( $40.4 \pm 3.8 \text{ ml}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$ )( $p=0.03$ ). Similarly, Peruvian men had a lower estimated  $VO_{2max}$  ( $44.5 \pm 4.8 \text{ ml}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$ ) compared to American men ( $54.0 \pm 7.6 \text{ ml}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$ )( $p=0.03$ ). Six American students were classified as having either “Excellent” or “Superior” fitness per ACSM guidelines, whereas no Peruvian students were in these categories. **CONCLUSION:** The estimated aerobic fitness levels of Peruvian university students were lower than their American counterparts. Such information may assist with the development of strategies that promote physical activity and reduce physical inactivity in order to reduce the burden of cardiovascular disease among Peruvian citizens.