

Comparison of Maximal and Supramaximal Verification Tests

Bly, K., Dolan, K., Simonovich, S., Corrigan, K., and Swensen, T. Ithaca College, Ithaca, NY.

kbly1@ithaca.edu, kdolan2@ithaca.edu, sesimunovich@gmail.com, kcorr1@ithaca.edu, tswensen@ithaca.edu

Purpose: To examine which VO_2max verification technique—constant load vs. supra maximal is most effective. **Methods:** A repeated measures design was used in which 14 college students ($M = 19.1$, $SD = 1.3$) completed, on the Monark cycle ergometer, two maximal incremental ramp tests separated by at least 48 hours. After the second ramp test, subjects performed a 10-min active recovery followed by a maximal or a supramaximal verification test. **Results:** Paired t-test showed no significant differences between VO_2max and the maximal verification phase ($t(6) = -.25$, $p > .05$), between VO_2max and the supramaximal verification phase ($t(6) = -.69$, $p > .05$), or between the maximal and supramaximal verification VO_2 values ($t(12) = .65$, $p > .05$). There was a strong correlation between VO_2max and the maximal verification phase ($r = .96$) and VO_2max and the supramaximal verification phase ($r = .84$). It was found that the Coefficient of Variation (CV) between VO_2max and the maximal verification phase was 2.0%, while the CV between VO_2max and the supramaximal verification phase was 4.0%. **Conclusion:** When performing a verification phase on a cycle ergometer, examiners may use either a maximal or supramaximal verification phase. However, given the stronger correlation and the lower, CV, a maximal verification phase may be preferred.