

CARDIOVASCULAR RESPONSES TO HIGH INTENSITY AEROBIC AND ANAEROBIC EXERCISES.

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Purpose: The purpose of the current study was to compare the cardiovascular responses to different types of high intensity exercise. **Methods:** Healthy, physically active females (n = 11) and males (n = 9) each performed a VO_{2max} test, Wingate Anaerobic Test (WAT), and 30 s of one-leg maximal isokinetic extension and flexion (180 °/s) of the lower leg (ISO) at least 48 hours apart. Each test was preceded by 10 minutes of quiet rest for measurement of baseline values. Cardiac output (Q), stroke volume (SV), and heart rate (HR) were measured every 10 s using impedance cardiography. Blood pressure was measured immediately at the end of test. Mean arterial pressure (MAP) and total peripheral resistance (TPR) were calculated using standard formula. Peak values were analyzed for significant differences (p < 0.05) using repeated measures ANOVA and post-hoc testing with Bonferroni correction. **Results:** All data reported as mean ± SE. Participants averaged 23 ± 1 yr, 19.8 ± 1.4 %, and 52.9 ± 2.3 mL/kg/min for age, body fat, and VO_{2max}, respectively.

Test	Q (L/min)	HR (bpm)	SV (mL)	MA P (mm Hg)	TPR (dynes/s/cm ⁻⁵)
VO _{2max}	19.5 ± 1.0	193 ± 2	105.8 ± 5.8	109 ± 2	473 ± 27
WAT	16.8 ± 1.0	169 ± 3*	99.3 ± 5.5	101 ± 3*	523 ± 40
ISO	14.6 ± 1.0*#	151 ± 3*#	96.0 ± 5.8	102 ± 3*	605 ± 41*

All data reported as mean ± SE. * significantly different from VO_{2max} test, # significantly different from WAT

Conclusion: ISO does not impose a similar CV load as VO_{2max} or WAT testing.

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