

## Validation of Bioreactance Non-Invasive Cardiac Output Monitoring in a Male College-Aged Population

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**Purpose:** The purpose of this study was to compare the cardiac output (CO) and oxygen consumption (VO<sub>2</sub>) regression formulated from a bioreactance non-invasive cardiac output monitoring system to regressions previously published using other CO measuring systems. **Methods:** Nineteen college aged males (23±2yrs.) who had no contraindications to exercise nor participated in physical activity greater than 10 hours per week were recruited. Subjects' average height was 179±9 cm and average weight being 91±18 kg. The NICOM bioreactance and Parvo Medics metabolic cart measures cardiac output (CO) and oxygen consumption (VO<sub>2</sub>) during incremented work rates on a cycle ergometer. Linear slope and Y-intercept were computed for the CO/VO<sub>2</sub> regression. The slope and intercept were then compared to previously published regressions. **Results:**

|                                | <b>Slope</b> | <b>Intercept</b> | <b>SD Slope</b> | <b>SD Inter</b> |
|--------------------------------|--------------|------------------|-----------------|-----------------|
| <b>Bioreactance</b>            | 6.02         | 6.32             | 2.02            | 2.35            |
| <b>Jones et al. 1982.</b>      | 5.08         | 5.37             |                 |                 |
| <b>Crisafulli et al. 2005.</b> | 5.95         | 3.06             |                 |                 |
| <b>Rowell. 1994</b>            | 6.00         |                  |                 |                 |

**Conclusions:** Although not previously validated for healthy young men, Bioreactance appears to provide a valid measure of CO in this population.