TACSM Abstract

Changes in Central and Peripheral Hemodynamics in Females of the Rio Grande Valley with High-Intensity Resistance Focused Training

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ABSTRACT

Cardiovascular disease (CVD) is a leading cause of death in the US, with type 2 diabetes increasing its risk ~4-fold. The Rio Grande Valley has ~3x higher rates of T2D and CVD than the US average. Both central and peripheral diastolic blood pressure are predictors of CVD risk and have been shown to decrease in obese males following high-intensity resistance focused training (HIRFT). The effects of HIRFT on central hemodynamics in females are unknown, particularly in a high-risk population. **Purpose:** To determine the effects of a 7-week HIRFT program on central and peripheral hemodynamics in women in a high-risk population. **Methods:** In this ongoing study, 8 females (age 22± 2 yrs, height 160± 4 cm, weight 68± 18 kg) have been recruited, trained, and tested. Central and peripheral hemodynamics and arterial elasticity were measured while resting in the supine position before and after a 7-week HIRFT program using a SphygmoCor XCEL pulse wave analysis device. **Results:** Brachial and central diastolic blood pressure display a trend to decrease (pre-74.63 and post-69.94, p=0.078; pre-75.19 and post-70.31, p=0.057, respectively) with HIRFT, with no trends noted in either central or brachial systolic blood pressure (pre-105.6 and post-103.7, and pre-119.0, p=0.4 and post-117.4, p=0.35 respectively). As of yet, there were no changes (p>0.3) in body composition or bone mineral density (percent body fat, p=0.29; percent android fat, p=0.442; bone mineral density, p=0.219). **Conclusion:** Central and brachial diastolic blood pressure decreases with HIRFT are approaching significant values despite very low participant numbers in this ongoing study. It is likely that upon completion of the study, central and brachial blood pressure in females in a high-risk population will be significantly lower with HIRFT, similar to what has been noted previously in obese males.