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### The Effects of a Resistance Training Program on Arterial Stiffness in Young, Healthy Females

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Arterial stiffness is a leading risk factor for cardiovascular disease and early detection is crucial in seeking appropriate treatment interventions. Current research studies have reported findings in positive correlations with chronic resistance while others did not find any correlations. **PURPOSE:** To examine the inconsistencies from previous investigations utilizing two resistance training models in female participants. **METHODS:** Subject characteristics included 24 female, untrained college students aged 18-22 years that were randomized into one of three groups: control (CON) group (n = 8), high-intensity resistance exercise (HI) group (n = 8), and high-volume resistance exercise (HV) group (n = 8). Subjects randomized to resistance training groups were required to perform strength training exercises three to five days a week for 11 weeks. The exercise regimen consisted of 2-3 sets of 3-8 repetitions (80-90% of 1-repetition maximum (1 RM)) for the HI group and 3-4 sets of 10-15 repetitions (50%-70% of 1 RM) for the HV group. All subjects were instructed to continue their normal diet and avoid cardiovascular exercise during the study. **RESULTS:** Following the intervention, there was a significant increase in carotid femoral pulse wave velocity (C-F PWV) ( $6.39 \pm 0.73$  to  $8.4 \pm 2.31$ ;  $P < 0.05$ ) and carotid radial (C-R) PWV ( $9.77 \pm 1.74$  to  $12.58 \pm 2.09$ ;  $P < 0.05$ ) in the CON group only. Both CON and HI groups significantly decreased central pulse pressure (cPP) ( $-15.3 \pm 12.4$  vs.  $-13.11 \pm 12.0$  percent change;  $P < 0.05$ ), respectively. Both the HI and HV groups increased their maximum squat ( $36.6 \pm 7.9$  vs.  $41.3 \pm 31.8$  percent change;  $P < 0.05$ ), bench press ( $34.4 \pm 12.6$  vs.  $23.4 \pm 11.1$  percent change;  $P < 0.05$ ), and seated row ( $22.0 \pm 12.6$  vs.  $21.9 \pm 12.5$  percent change;  $P < 0.05$ ), respectively. **CONCLUSION:** Our findings support the use of resistance training exercise without undue impact on vascular compliance in otherwise healthy, young female populations.