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Grip Strength Not Associated with Changes in Vascular Function Post-Aerobic Exercise Training in Older Adults

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Decrease in grip strength and vascular function are both strong predictors of all-cause mortality, especially cardiovascular disease. Aerobic exercise training improves vascular function in older adults. However, it is currently unknown if grip strength is associated with vascular function in older adults following an aerobic exercise training regimen. **PURPOSE:** To evaluate the association between maximal voluntary contraction (MVC) and change in vascular function following 6-months of aerobic exercise training in older adults. **METHODS:** 26 older adults (21F/5M 71±8y) performed MVC at baseline and underwent brachial-artery flow mediated dilation (FMD) testing before and after a 6-month aerobic exercise training program. Average initial MVC was obtained by having participants perform 3 consecutive contractions spaced one minute apart. The change in post training FMD from pre training FMD was calculated and reported as ΔFMD. **RESULTS:** There was a non-significant linear correlation between the average initial MVC and ΔFMD ($r=0.14$, $p=0.48$) following the exercise protocol. Additionally, baseline MVC was not a significant predictor of ΔFMD ($R= 0.02071$, $p= 0.4830$). **CONCLUSION:** There is no association between grip strength and vascular responsiveness following aerobic exercise training in older adults. Furthermore, initial grip strength did not significantly predict change in vascular function following aerobic exercise training.

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