

No Relationship Between Time Spent in Physical Activity And Leg Strength For Older Adults Who Do Or Do Not Meet ACSM Physical Activity Recommendations

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ABSTRACT

In older adults, skeletal muscle fitness and low quantities of exercise are negatively associated with mortality and functional limitations. The **PURPOSE** of this study was to determine the relationship between time spent in light or moderate-to-vigorous physical activity and leg strength in older adults who do or do not meet ACSM physical activity recommendations. **METHODS:** Twelve physically active (PA; 62.1±5.0 yrs) and 12 physically inactive (PI; 63.9±5.1 yrs) older adults participated in this study. Accelerometry was used to measure average daily minutes spent in light and moderate-to-vigorous (MVPA) activity. 8-repetition maximum (8RM) on leg curl, leg press, calf raise, and leg extension were also measured. Estimated 1-repetition maximum (1RM) was calculated from the 8RM. Correlations were performed with a $p < 0.05$ considered significant. **RESULTS:** PA participants had a higher leg press 1RM ($p = 0.02$), leg curl 1RM ($p = 0.003$), calf raise 1RM ($p = 0.004$), and leg extension 1RM ($p = 0.005$), than PI participants. There was no difference between groups for time spent in light or MVPA activity ($p > 0.05$). In the PA and PI groups, there were no correlations between time spent in light or MVPA with any leg strength measure ($p > 0.05$). **CONCLUSION:** There were no associations between average daily time spent in light or MVPA with measures of leg strength, despite the PA group having greater leg strength. Further, this lack of association was regardless if the participant was meeting ACSM exercise recommendations or not. These findings are unexpected. The differences with what are currently reported in the literature could be due to the relatively healthy status of the participants.