Whole body vibration exercise (WBV) has been demonstrated to augment the muscular strength and power of community dwelling older adults (1) and improve the functional gait performance of elderly nursing home residents (2). Researchers have applied plate vibration intensities as high as 24.7 g for older adults (3), but such intensities may be detrimental to the musculoskeletal health of some individuals (4). The aim of this study was to examine the response of elderly female walking speed to WBV intensities lower than previously reported. Twenty two community dwelling elderly females participated in this study. They were requested to attend three sessions per week for 12 weeks. Participants were divided into two groups within a crossover design. Group Placebo/WBV (n=12; age=77.3 ± 6.2 years) was exposed to a placebo from weeks one to six and WBV from week’s seven to 12. Group WBV/Placebo (n=10; age=75.6 ± 7.9 years) received WBV from weeks one to six and a placebo during weeks seven to 12. During the six week WBV period participants were exposed to progressively increasing WBV accelerations. The vibration frequencies ranged between 10-30 Hz and the amplitude was 0.5 mm for the first four weeks, increasing to 1 mm for weeks five and six. The resulting acceleration range was 0.2 g to 2.5 g. During the placebo period, participants stood on a WBV platform oscillating at an intensity that created the perception of vibration but was not strong enough to enhance strength or power (5). Both groups stood on the WBV platform with knees bent for five one minute efforts, interspersed with one minute rest periods. At the completion of each WBV and placebo session, participants performed fast walks over a GAITRite electronic walkway. A Wilcoxon matched pairs test was used to compare the changes in walking velocity observed during the WBV and placebo periods. Significance levels were set at P<0.05. A significant difference (P=0.011) was found between the WBV and placebo periods for walking velocity. During WBV, there was a median increase in walking velocity of 9.2 cm/s (IQR = 5.9 cm/s to 15.5 cm/s) while for the placebo the median velocity was unchanged (median = -0.9 cm/s; IQR = -5.1 cm/s to 9.0 cm/s). No adverse effects were reported. This study provided evidence that older adults can improve fast walking velocity with lower accelerations than previously reported. It was concluded that the WBV accelerations applied in this study effectively and safely increased the walking speed of community dwelling elderly females.

References