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Can we increase the intensity of pro-active balance exercises?

College of Sciences and Health Professions

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Abstract

Balance training has been shown to be effective in preventing or lessening the severity of falls among older adults. This training can be proactive or reactive; however, the relative effectiveness of each and the necessary dosages are not known. The purpose of this research was to adapt an existing protocol for slip testing (reactive training) and video-game balance training (proactive) to better accommodate the abilities of older adults. We tested iteratively the initial protocols, set-ups, and equipment with a group of adults age 55 years and older and devised new protocols and equipment for each. After observing the subjects' participation in the original protocol and taking into account their feedback, we made changes to four major areas of the protocol: the slipping protocol and equipment, the gaming surfaces, the harness, and the videogames themselves. We decreased the percentages for the slip distance and the slip weight in the slipping protocol, lessening the perturbation to better suit the physical abilities of older adults, and lengthened the slipping platform. We created three different gaming surfaces using mats and pool rafts, each with a distinct level of balance difficulty. A new harness was implemented into the protocol, one that allows for a wider range of stepping motion. Lastly, we modified the videogames, adding special rules and instructions that encouraged the subjects to play more aggressively while still remaining safe.