

CAN VIBRATION STIMULI TO PLANTA PEDIS PREVENT THE FALI ACCIDENT?

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Abstract

Considering the aged population increase, the prevention of falls will become increasingly importance. One of the causes of elderly people fall is the decline of the balance ability. The purpose of this study is to examine the difference of the sensitivities to the single frequency vibration of three places in planta pedis. We made a simple vibration stimulator, which can give 225Hz vibration stimuli to three places of planta pedis. This frequency was decided by our prior study. The vibration stimuli places were the heel, the root of the big toe and the root of the little toe. The intensity of the stimulus was set to 90% of the smallest stimulus intensity that the subject could feel. We evaluated the effect of vibration stimuli by the center-of-foot-pressure (CFP) sway and the duration of one-leg standing with closed eyes. The results showed that the duration was extended and the locus length of CFP sway was decreased by the stimulation of only one place. The most effective place was the root of the big toe. Our result is that the vibration stimuli to planta pedis are useful for the fall prevention of elderly people.

Keywords: fall prevention, vibration stimuli, Vater-Pacini's corpuscle