The volitional and reactive step training to improve fall risk and cognition in older adults

Dr Yoshi Okubo, Prof Stephen Lord

Falls and cognitive disorders often co-exist in older people. While susceptibility to falls and cognitive disorders are commonly studied separately, recent evidence suggests that these two are interrelated and often develop in parallel (Montero-Odasso et al. 2018). Systematic reviews evidence suggests that step training improves cognition, balance recovery skills and reduces falls in daily life by up to 50% (Okubo et al., 2017). In this RCT, we will examine the effect of a novel volitional and reactive step training (the ReacStep program) on fall risk and cognition in older adults.

ReacStep

Context-specific fall prevention training in older adults using virtual reality exergames

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Virtual reality (VR) is a state-of-the-art technology that can be used as a tool to quantitatively study our interaction with the environment. Older adults have intact gait adaptability to reduce fall risk in situations where the balance can be challenged (Bohm et al., 2015). Based on analysis of 1000 falls reported by older adults, we have developed a VR exergame in which older adults can learn realistic fall hazards in a daily life context. In this pilot randomised controlled trial, we will examine the effect of context-specific fall prevention training in older adults using VR exergames.

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