

**Dunsky, A.,** Fishbein, P., & Hutzler, Y. Dual-task training using virtual reality compared to a conventional training method on a treadmill: Influence on indices of walking and balance in three post stroke survivors (Submitted for publication to *International Journal of Therapies and Rehabilitation Research*).

## **ABSTRACT**

**Objective:** To investigate the feasibility of using a virtual reality (VR)-based dual task of upper extremity tracking while treadmill walking, to improve gait and functional balance performance of stroke survivors.

**Materials and Methods:** Three individuals (two males and one female), 66, 64, and 54 years old, respectively, participated in the study. The participants were trained in eight sessions of dual-task walking (DTW) on a treadmill while performing virtual tasks, and eight sessions of single-task treadmill walking (TMW), in a cross-over design. Their walking speed, balance performances, and perceived confidence were measured four times along different stages of the study.

**Results:** Two participants demonstrated improvements in each of the outcome measures after the DTW intervention and no change after the TMW intervention.

**Conclusion:** The improvements that were observed in the study demonstrate the potential benefit of DTW using VR while treadmill walking on gait and balance performances of stroke survivors.