

# IS POST-EXERCISE HYPOTENSION A METHOD-DEPENDENT PHENOMENON IN CHRONIC STROKE? A CROSSOVER RANDOMIZED CONTROLLED TRIAL

## ABSTRACT

**Background:** This crossover randomized controlled trial assessed the occurrence and reproducibility of post-exercise hypotension (PEH) using three approaches [i.e. (1); (2); (3)] after two bouts of mixed circuit training (MCT). The proportion of PEH responders was investigated using different cut-off values for BP variation (4 mmHg vs. minimal detectable difference, MDD). **Methods:** Seven participants ( $58 \pm 12$  yr) performed a control session and two bouts of MCT (separate days). The MCT involved 10 exercises with 3 sets of 15-repetition maximum per exercise, performed using a vertical loading approach, with each set interspersed with 45 s of walking. The systolic (SBP) and diastolic (DBP) blood pressures were assessed 10 min before and every 10 min along 40 min after CTL and MCT. **Results:** The two-way random intraclass correlation coefficient for single measurements (ICC 2,1) ranges for SBP were: A 1 : 0.580-0.829, A 2 : 0.937-0.994, and A 3 : 0.278-0.774; for DBP: A 1 : 0.497-0.916, A 2 : 0.133-0.969, and A 3 : 0.175-0.930. The proportion of PEH responders was greater (SBP:  $\square$ 14-57%, DBP:  $\square$ 42-57%;  $p < 0.05$ ) when using 4 mmHg vs. MDD as cut-off values in A 1 and A 2, but not in A 3. The standard error of measurement (SEM) was  $\geq 4$  mmHg in 47% of analyses for SBP and 40% of DBP. **Conclusions:** A 2 was more reliable than A 1 or A 3 to determine PEH in people after stroke. MDD was a more conservative approach than the 4-mmHg cut-off value to identify PEH responders in this group.

**Keywords:** stroke; circuit-based exercise; exercise; reproducibility of results; blood pressure; post-exercise hypotension.