

Project Title: Improving Community Ambulation for Stroke Survivors using
Powered Hip Exoskeletons with Adaptive Environmental Controllers

NCT Number: NCT03924765

Date: September 16, 2021

Statistical Analysis Plan

Means of the outcome measures for all 17 conditions (1 no exoskeleton, 1 zero torque, and 15 assistance) across five subjects were computed. To evaluate the effects of the unilateral and bilateral hip assistance on the subject's gait functions, 15 assistance conditions were categorized into five different assistance strategies:

1. Unilateral – Paretic (Uni-P): N0P1, N0P2, N0P32
2. Unilateral – Non-paretic (Uni-NP): N1P0, N2P0, N3P03
3. Bilateral – Equal (Bi-Eq): N1P1, N2P2, N3P34
4. Bilateral – Paretic (Bi-P): N1P2, N2P3, N1P35
5. Bilateral – Non-paretic (Bi-NP): N2P1, N3P2, N3P1

For the Uni-P and Uni-NP, assistance was applied on either the paretic or non-paretic side only and for the Bi-Eq, Bi-P, and Bi-NP, assistance was applied with either equal amount or differently on both sides. We performed a one-way repeated measures analysis of variance on these 6 different assistance strategies (Baseline, Uni-P, Uni-NP, Bi-Eq, Bi-P, and Bi-NP) on the subject's walking speed and step length asymmetry by setting an α value to 0.05 (SPSS 21, IBM, USA).