

UNWEIGHTING EFFECTS OF CONTRALATERAL VS. IPSILATERAL ASSISTIVE DEVICES

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no funding

This study was approved by the College of St. Scholastica's IRB.

Background and Purpose: When prescribing a unilateral assistive device to unload an affected lower extremity, it is typically suggested to be used on the contralateral side. However, previous research and patient preference may suggest that ipsilateral device may be equally effective. The purpose this study was to evaluate the unloading effects of a single assistive device during contralateral vs. ipsilateral use.

Design: Observational Laboratory Study

Subjects: 17 participants were recruited via sample of convenience between the ages of 20-40 years old and have had no recent pathology that altered gait or the ability to use an assistive device.

Methods and Materials: In-shoe pressure and force measurements were obtained through PEDAR[®] system while participants walked with and without an assistive device. Assistive devices evaluated included an offset-handle cane, crutch, and lofstrand crutch on the ipsilateral and contralateral side. Pressure and forces were evaluated for the right limb only, which was considered the affected extremity for each walking condition.

Analysis: A two-way ANOVA utilizing SPSS will be used to evaluate differences between means. Dependent variables include pressure-time integral, force-time integral, and mean peak pressure. Independent variables include assistive device (lofstrand, axillary and cane) and condition (control, contralateral vs. ipsilateral).

Results: A statistical analysis will be performed after full participant trial completion.

Conclusion: Preliminary results suggest that there is not a clinical difference between unloading using an assistive device on the ipsi vs. contralateral side.

Implications: The impact of this research will be reported once results are analyzed.