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#### PubMed Results

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1. Neurorehabil Neural Repair. 2013 Sep;27(7):579-91. doi:  
10.1177/1545968313481278. Epub 2013 Apr 4.

## **Effect of a foot-drop stimulator and ankle-foot orthosis on walking performance after stroke: a multicenter randomized controlled trial.**

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### **Abstract**

#### **BACKGROUND:**

Studies have demonstrated the efficacy of functional electrical stimulation in the management of foot drop after stroke.

#### **OBJECTIVE:**

To compare changes in walking performance with the WalkAide (WA) foot-drop stimulator and a conventional ankle-foot orthosis (AFO).

#### **METHODS:**

Individuals with stroke within the previous 12 months and residual foot drop were enrolled in a multicenter, randomized controlled, crossover trial. Subjects were assigned to 1 of 3 parallel arms for 12 weeks (6 weeks/device): arm 1 (WA-AFO), n = 38; arm 2 (AFO-WA), n = 31; arm 3 (AFO-AFO), n = 24. Primary outcomes were

walking speed and Physiological Cost Index for the Figure-of-8 walking test. Secondary measures included 10-m walking speed and perceived safety during this test, general mobility, and device preference for arms 1 and 2 for continued use. Walking tests were performed with (On) and without a device (Off) at 0, 3, 6, 9, and 12 weeks.

## **RESULTS:**

Both WA and AFO had significant orthotic (On-Off difference), therapeutic (change over time when Off), and combined (change over time On vs baseline Off) effects on walking speed. An AFO also had a significant orthotic effect on Physiological Cost Index. The WA had a higher, but not significantly different therapeutic effect on speed than an AFO, whereas an AFO had a greater orthotic effect than the WA (significant at 12 weeks). Combined effects on speed after 6 weeks did not differ between devices. Users felt as safe with the WA as with an AFO, but significantly more users preferred the WA.

## **CONCLUSIONS:**

Both devices produce equivalent functional gains.  
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