

Thesis
The sooner the better?!
Providing ankle-foot orthoses in the rehabilitation after stroke
Corien Nikamp-Simons

Roessingh Research and Development / University of Twente, Enschede, the Netherlands
Thesis approved by Prof. dr. J.H. Buurke and Prof. dr. J.S. Rietman

Summary thesis

The general aim of this thesis was to increase the understanding of the effects of providing ankle-foot orthoses (AFOs) early after stroke. A randomized controlled trial was conducted in which the effects of AFO-provision on two different time points in the rehabilitation post-stroke were studied. Subjects were included within six weeks post-stroke and randomized for AFO-provision at inclusion of the study (week 1) or eight weeks later (week 9). One of three available commonly used types of off-the-shelf, non-articulated AFOs were provided. Clinical tests, 3D gait-analysis, muscle EMG and falls were included as outcome measures and studied up to 17 weeks with (bi)weekly intervals. Follow-up measurements up to 26 and 52 weeks were included.

The results show that:

- Early AFO-use is expected to result in higher functional levels earlier in the rehabilitation, but did not lead to higher functional levels after 26 weeks, compared to delayed provision.
- AFOs improved drop-foot regardless of the timing of AFO-provision after stroke, but there is no reason to assume that early AFO-provision will influence the development of compensatory movements around the pelvis and hip in the rehabilitation after stroke.
- No negative effects on tibialis anterior muscle activity in swing phase were found after 26 weeks of AFO-use (no muscle disuse was found).
- Higher numbers of falls were found in case subjects were provided with AFOs early after stroke, but the majority of these falls occurred while subject were not allowed to ambulate independently and did not use their AFO (mainly in bathroom/bedroom). This indicates that special attention towards specific instructions regarding AFO-use may play an important role in AFO-use early after stroke.



The PDF of the complete thesis is available:

<http://www.rrd.nl/proefschrift-corien-nikamp-simons/>

info: c.nikamp@rrd.nl