



POSTER PRESENTATION

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Within-subject foot motion variability in patients with Rheumatoid Arthritis

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Introduction

Multi-segment three-dimensional analysis is a complex yet rapidly evolving methodology in podiatric mechanical research. The purpose of this study was to explore the within-subject foot motion variability (MoVa) during the stance phase of gait.

Methods

A 3D motion analysis system was used to collect gait data for 5 healthy participants and 5 patients with RA. The oxford foot model was used to characterise dynamic foot & ankle kinematics and spatio-temporal parameters. Inter-segmental motions of interest were defined as tibia-rearfoot and rearfoot-forefoot. The main outcome of interest was within-subject MoVa, expressed as mean standard deviation (SD).

Results

MoVa ranged from 0.94- 2.33SD and was similar for both groups. Increased MoVa was largely accounted for by rearfoot variance. There is a trend towards increased forefoot MoVa in the RA group (RA 0.65-1.78, Control 0.34-0.9). No single episode during the stance phase had greater variability than any other.

Discussion

MoVa rather than a particular gait event may be an alternative outcome warranting further investigation. These results suggest care should be taken when assuming mean within-subject MoVa in mechanical analyses. This preliminary work suggests that greater forefoot MoVa may occur in RA participants. This pilot investigation provides useful preliminary data to inform future studies.

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