

ABSTRACT

## A case series on the effectiveness of the ReAktiv PDE Orthosis following high-energy ankle trauma

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In this presentation I aim to highlight the effectiveness of the ReAktiv PDE orthosis to improve physical function in people who have sustained lower extremity injuries during high-energy trauma (HET). These injuries often require complex surgery and extensive rehabilitation, resulting in long-term problems such as pain, loss of function and limitations in physical activity. There is limited evidence in the literature on the success of passive-dynamic ankle-foot-orthosis being used for unloading traumatic ankle injuries and improving physical function in general populations as previous studies have predominantly been conducted on military personnel. For this study, a case series was used to evaluate the effect the ReAktiv PDE Orthosis and a six-week rehabilitation program had on physical function in people with a HET injury. Measures of physical function were recorded pre- and post-fitting of the orthosis in three people who had sustained a HET injury to the lower limb. Physical function was assessed using the Lower Extremity Functional Score (LEFS), Two-minute walk test (2MWT), Single-Leg Balance (SLB), Timed stair ascent (TSA), and the Four-square step test (FSST). Following wearing of the orthosis and the completion of the rehabilitation programme, lower limb function improved in two of the participants. These improvements in physical function were seen as indicated by the change in scores seen in the 2MWT, FSST, TSA and the SLB test at the commencement and conclusion of the rehabilitation programme. The ReAktiv PDE orthosis shows potential as a treatment option to improve walking performance in people who have sustained a lower extremity HET injury. In addition to the use of the orthosis, the use of a six-week physiotherapy-led rehabilitation programme, recorded further improvements in physical function specifically walking performance, physical mobility, and balance.