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The Feasibility of the Weight-bearing Lunge Test in the Assessment of Calf Muscle Flexibility in Individuals with Plantar Fasciitis: A Literature Review

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ABSTRACT

Plantar fasciitis is a prevalent foot condition characterised by inflammation and degeneration of the plantar fascia resulting from repetitive stress applied to the medial calcaneal tuberosity. This condition can be precipitated by an excessive accumulation of stress at the plantar fascia enthesis. Restricted calf muscle flexibility has been implicated as a contributing factor in the development of plantar fasciitis, as well as its associated musculoskeletal complications. It causes the plantar fascia to experience an increase in tensile force during the stance phase of gait. The Weight-Bearing Lunge Test (WBLT) constitutes a valuable assessment tool for investigating the functional biomechanics of the lower extremities, including calf muscle flexibility, particularly in individuals presenting with plantar fasciitis. The purpose of this review is to propose if WBLT is feasible in cases with plantar fasciitis. A comprehensive literature search was done utilising databases including PubMed/MEDLINE and Google Scholar, and Physiotherapy Evidence Database (PEDro). Thirteen articles were initially discovered, out of which 6 articles met the inclusion requirements. In those studies, the weight-bearing lunge test was used as a standardised assessment tool to evaluate calf muscle flexibility at pre- and post-intervention in patients with plantar fasciitis. Calf muscle flexibility was assessed using two distinct methodologies across the six studies. Four studies measured the distance between the toe and the wall with the help of a measuring tape, while two relied on goniometric measurements. Also, WBLT demonstrates high inter-rater reliability (0.97-0.98), regardless of the therapist's level of clinical experience. Thus, to conclude, the WBLT emerges as a practical and feasible tool for evaluating calf muscle flexibility in cases of plantar fasciitis. Given the crucial role of calf muscle flexibility in the development and management of plantar fasciitis, the WBLT offers a valuable clinical tool for assessing this key parameter and guiding treatment strategies.

Keywords: Fascia, Lower extremity, Physical therapy modalities