

TITLE

**Ankle Equinus
Contracture
Secondary to
Diabetes Mellitus,
Reduced with
Dynamic Splinting**

**Willis FB, Lopez AL, Kalish SR and
John MM**

Landmark Medical, PO Box 1735 San Marcos
TX, USA

Introduction: Ankle equinus is hereditary, or acquired contracture of the Triceps surae or shortening of the connective tissue causing inability of the foot to dorsiflex during gait. High plantar pressure from contracture often results in diabetic ulceration. This is frequently treated by Achilles Tendon lengthening which helps to avoid infection and amputation. The purpose of this study is to examine the effect of dynamic splinting in reducing ankle equinus contracture of patients with diabetes mellitus.

Methods: A retrospective analysis was accomplished by reviewing 48 diabetic patients' histories following treatment with an ankle dorsiflexion dynamic splint. This dynamic splinting modality delivers low-torque prolonged end-range stretching while one sleeps. In this home therapy study, dynamic splinting was used for a mean 240 hours in the first month (5 weeks).

Results: Patients showed a statistically significant change in maximal ankle dorsiflexion ($P < 0.0001$, $t = 6.469$, $df = 47$, $N = 48$). The patients' mean, maximal, active range of motion in dorsiflexion increased by 9° in the first month.

Conclusion: This modality proved effective as home therapy and should be examined in further research so that it may be employed as standard of care in treating ankle equinus contracture.

Biography

Dr Willis' focus is on research of therapeutic protocols treating connective tissue pathologies/injuries, head to toe. In the past two years, Dr Willis has authored 14 peer-reviewed manuscripts (with 6 additional manuscripts *In-Press*), and he has served on editorial boards for four journals, including Associate Editor-in-Chief: Foot & Ankle *Online Journal*. His research is interdisciplinary and he has been invited to author his second text book titled "Contracture Reduction, Head to Toe" which is expected to also benefit residents in podiatry, orthopaedics, physiatry and students in physical or occupational therapy. (F. Buck Willis, CPL, BA, MEd, MBBS, PhD)