Reducing Ankle Stiffness in Individuals with Flat Feet
Vinod K. Panchbhavi, MD,
(a – Arthrex, Inc, Wright Medical Technologies, Inc)
Saul Trevino, MD – (n)
Katie Hendricks, PT – (n)
Dana Zander, PT– (n)
Casi Baker, PT– (n)
Galveston, TX

Precis/Summary:
Flat foot deformity is associated with contracture of triceps surae and reduced range of dorsiflexion at the ankle joint especially when the subtalar joint is held in inversion. The A.R.M. device significantly decreased ankle dorsiflexion stiffness in subjects with flat feet.

Abstract:
Background and Purpose: A device which can hold the subtalar joint in inversion and also allow for a dorsiflexion force to be applied at the ankle joint is likely to stretch the triceps surae more effectively. The purpose of this study was to assess the effectiveness of such a device [Ankle Range of Motion (A.R.M) device] in improving the range of dorsiflexion at the ankle joint. Methods: Using a pretest-posttest control group design, fifteen healthy volunteers with flat feet were randomly divided into two groups. The treatment group received the stretching treatment on the ARM for six weeks. The control group received no treatment. Baseline ankle stiffness in the direction of dorsiflexion was objectively quantified using the Torque Range of Motion (T.R.O.M) device. All parameters were calculated using a custom designed basic language program as a macro in Microsoft Excel. Statistical analyses was performed using paired and independent t-tests. The results of the t-tests were followed up with Bonferroni correction at the .0125 level of significance.

Results: There was significance with the pretest versus posttest measurement of ankle dorsiflexion stiffness (P = .003) in the treatment group when compared to the control group indicating that stretching with the ARM device decreased dorsiflexion stiffness.

Conclusion: The A.R.M. device significantly decreased ankle dorsiflexion stiffness in subjects with flat feet.