



Element

BRACING FOR MOTION

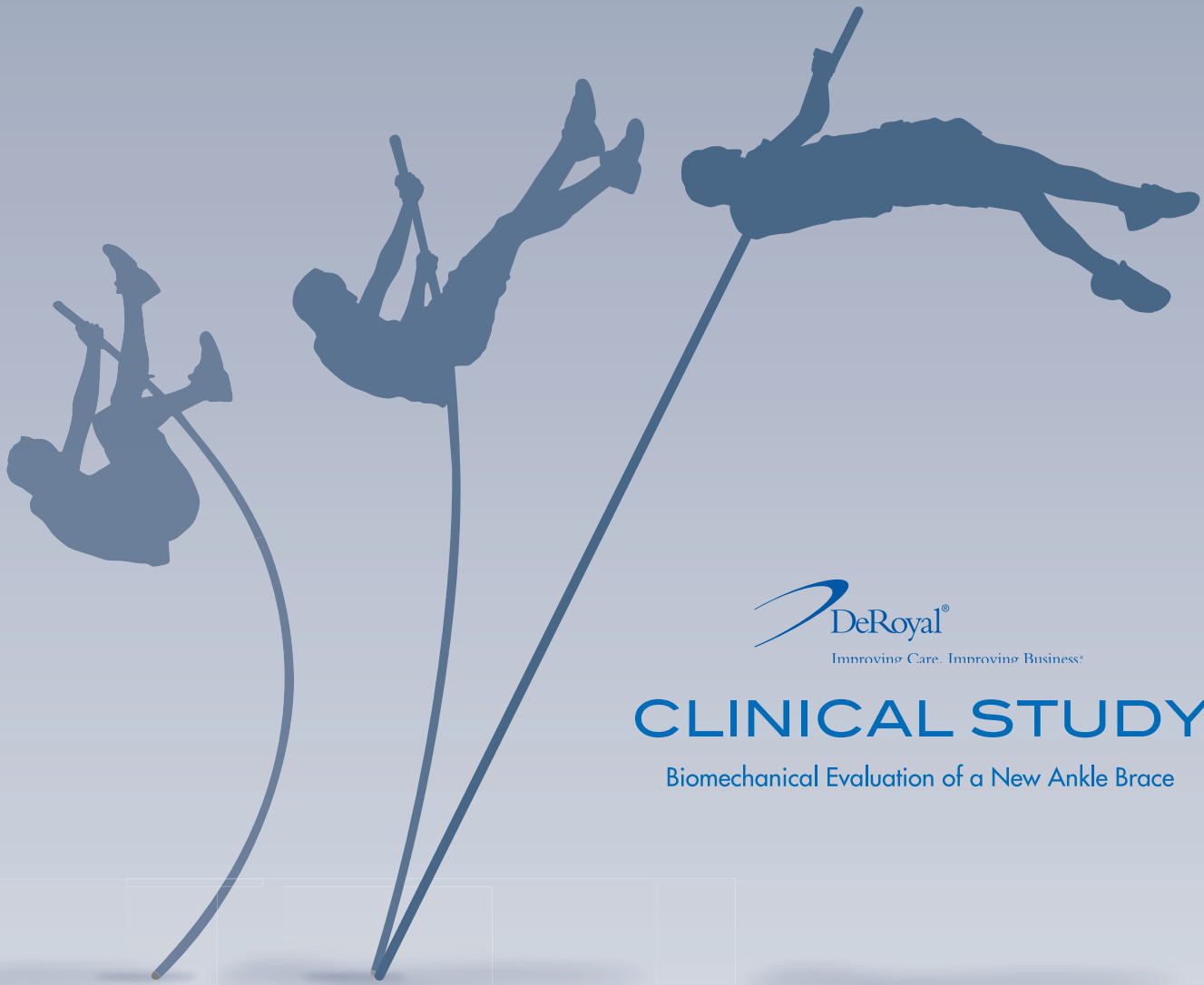
CONTROL • COMFORT • SUPPORT

DeRoyal presents the revolutionary Element Ankle Brace engineered to provide true subtalar control through calcaneal stabilization and positioning. The unique patented and patent pending heel control strapping system holds the calcaneus under the talus; thus, controlling subtalar inversion and talar rotation to assist in tissue healing, preventing chronic instability and allowing for a quicker return to activity. In addition, the Element Ankle Brace provides standard stirrup stabilization to reduce ankle joint inversion and eversion.

Biomechanical Evaluation of a New Ankle Brace
University of Tennessee



Improving Care. Improving Business.™



CLINICAL STUDY

Biomechanical Evaluation of a New Ankle Brace

Table 1: Static and dynamic average ankle inversion ROM summary

	Element Ankle Brace	Functional Ankle Brace	ASO®	Control
Passive Eversion ROM (degrees)	-19.0°	-6.8°	-10.1°	-9.0°
Passive Inversion ROM % Reduction	--	70%	49%	61%
Average Peak Inversion Angle (degrees)	26.1°	13.7°	17.1°	18.7°
Peak Inversion Angle % Reduction	--	48%	34%	28%
Average Ankle Inversion Velocity %/sec	236.81	46.85	183.06	188.50
Inversion Velocity % Reduction	--	38%	23%	20%

The results demonstrate that the Element Ankle Brace was most effective in restricting passive inversion ROM with 21% and 10% more ROM reduction than the Functional Ankle Brace and the ASO® brace, respectively. All three braces showed statistically significant reduction in passive inversion, eversion and total ROM. The results of the inversion drop test showed similar restrictive effects on peak ankle inversion angle, ROM and peak inversion velocity. Among the braces, the Element out performed the ASO® and Functional Ankle Brace in reducing ankle ROM. The Element also showed a significant reduction in peak inversion velocity with the lateral cutting maneuver.

In summary, the Element Ankle Brace is most effective in restricting inversion ROM during the passive and dynamic tests.