

Total Contact Casting: Comparison of Plantar Pressures in Two Total Contact Casting Systems

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Purpose: A new Total Contact Casting system, the TCC-EZ, has been introduced to address diabetic foot complications. This study compares the off-loading characteristics of the TCC-EZ to traditional Total Contact Casting (MedE-Kast).

Methods: Ten healthy normal patients ambulated in each cast at 2.0 MPH on a treadmill in both a TCC-EZ and a traditional total contact cast (MedE-Kast). The off-loading results were obtained utilizing the F-Scan made by Tekscan.

Results:

Full Plantar Surface Pressures; Average pressures (MedE-Kast = 8.4 psi vs TCC-EZ = 7.2 psi) and maximal pressures (MedE Kast = 50.3 psi and TCC-EZ 49.9 psi), were less in TCC-EZ.

Fore-Foot Surface Pressures; Average pressures (MedE-Kast = 8.5 psi vs TCC-EZ = 7.1 psi) and maximal pressures (MedE Kast = 48.3 psi and TCC-EZ 47.2 psi), were less in TCC-EZ.

Mid-Foot Surface Pressures; Average pressures (MedE-Kast = 6.2 psi vs TCC-EZ = 5.6 psi) and maximal pressures (MedE Kast = 23.9 psi and TCC-EZ 12.6 psi), were less in TCC-EZ.

Rear-Foot Surface Pressures; the average pressures favor TCC-EZ (MedE-Kast = 10.8 psi vs TCC-EZ = 9.3 psi) and maximal pressures favor MedE-Kast (MedE-Kast 40.5 psi and TCC-EZ 48.8 psi).

Conclusions: TCC-EZ performed better in all areas of the foot except with maximal pressures in the rear-foot. The TCC-EZ can be used for efficacious reduction in pressure when compared to the current Gold Standard of Total Contact Casting (MedE-Kast).