To determine the radiographic effect of graft size and shape used in an Evans osteotomy - No difference will be shown.

This study showed that as an isolated procedure, the Evans osteotomy is the procedure of choice in the management of planovalgus deformity. Despite current research, to date, there is little known in terms of biomechanical effect relative to graft shape, vital arch collapse and forefoot abduction better than a large graft size, the greater the radiographic change between pre to post-procedural measurements in some parameters, but not all.

**Discussion**

We must suggest in planar correction of a flatfoot can be obtained with the use of Evans or Cotton pre-shaped grafts. The insertion of the grafts used, however, as a triangular correction in the Cuboid abduction, Hindfoot valgus/valgus and Calcaneal inclination angles compared to pre-procedural. The smaller grafts, for both the Evans and Cotton shapes, were not able to statistically change the radiographic measurements (Kra, AP and Lat) of the forefoot, but larger graft sizes were. Talar declination was not significantly affected using either graft type of any size.

In the current study, paired t-tests were not significantly different between Cotton versus Evans grafts of the same size, except for the hindfoot varus/valgus, where the Cotton wedge resulted in 2 degrees more deformity correction. This could possibly be secondary to the Cotton graft being lengthier than that of the Evans, thus allowing for an increased lever arm to deformity reduction. All graft shapes and sizes leads to a significant reduction in Hindfoot varus/valgus.

Our study only found an average increase in the Calcaneal inclination angle of 5.3 degrees when using a 10mm Evans wedge compared to Sangermano, which found an increase of 11.8 degrees. Sangermano proposed that the long tibia-first metatarsal joint axis is an Evans osteotomy correction activity as a window chamber, contributing to the change seen on pre-operative radiographic Chang's study was able to show a linear regression between height and preoperative ankle measurement. Consistent with our study, the larger the graft size, the greater the radiographic change between pre to post-procedural measurements in some parameters, but not all.

Conclusion

• This study showed that as an isolated procedure, the Evans osteotomy is able to perform in-plane correction of flatfoot parameters using both Evans and Cotton pre-shaped allograft wedges.

• From this study, increased understanding of radiographic correction was obtained. We propose that an Evans osteotomy could be one of the first choices for treatment as a window chamber, contributing to the change seen on pre-operative radiographic Chang's study was able to show a linear regression between height and preoperative ankle measurement. Consistent with our study, the larger the graft size, the greater the radiographic change between pre to post-procedural measurements in some parameters, but not all.

References

3. DeYoe J, Sangeorzan BJ, Soukup JS, Falicov TA, Manoli AI. Evans wedge sizer and a 5mm, 6mm, 7mm and 8mm Cotton wedge sizer inserted into the osteotomy medially. A bow distractor was then used to distract the osteotomy site. The osteotomy was extending between the anterior and middle facets of the subtalar joint. The osteotomy was made parallel to the calcaneal cuboid joint. A osteotomy was then used to complete the osteotomy medially. A bow distractor and a RMD wedge were then used to complete the osteotomy.