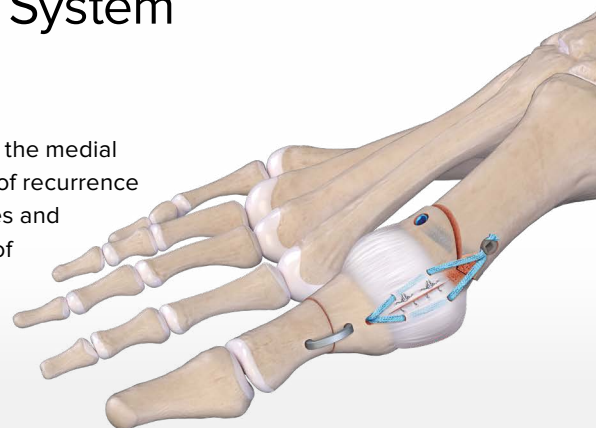


BunionBrace™ Medial Capsule Repair System

Scientific Update

The *BunionBrace* surgical technique augments and reinforces a direct repair to the medial capsule during hallux valgus correction, with the goal of reducing the chances of recurrence of a valgus deformity at the metatarsophalangeal (MTP) joint. Across procedures and techniques, weakness in the joint capsule can be a mechanism for recurrence of deformity, and *BunionBrace* augmentation aims to increase the strength of the primary repair and reduce the rate of recurrence.¹



AUGMENTATION IMPROVES MECHANICAL STABILITY

Emerging evidence demonstrates that reinforcing soft tissues with augmentation improves mechanical stability and may enhance the long-term maintenance of deformity correction.

Augmentation of the medial collateral ligament using suture tape reduces the recurrence after corrective surgery for severe hallux valgus

Nakasa T, Ikuta Y, Sumii J, Nekomoto A, Kawabata S, Luthfi APWY, Adachi N

- › Suture tape augmentation of the medial collateral ligament (MCL) at the 1st metatarsophalangeal (MTP) joint significantly reduces deformity recurrence, resulting in a smaller hallux valgus angle vs control.
- › Severe hallux valgus deformity shows degenerative medial tissue, highlighting the rationale for mechanical reinforcement in addition to osteotomy.

Clinical Takeaway: Adding suture tape provides a stronger medial construct that maintains structural correction long-term.

J Orthop Sci. 2024;29(4):1046-1053. doi:10.1016/j.jos.2023.07.010

Anchor enhanced capsulorrhaphy in bunionectomies using an L-shaped capsulotomy

Gould JS, Ali S, Fowler R, Fleisig GS

- › Enhanced capsulorrhaphy with anchors significantly reduces loss of correction with smaller hallux valgus angle recurrence compared to no anchor.
- › Without anchors, early capsular slippage leads to greater hallux valgus recurrence across bunionectomy techniques.

Clinical Takeaway: Reinforcing the capsule with an anchor improves the integrity and longevity of surgical correction by stabilizing the medial soft-tissue repair.

Foot Ankle Int. 2003;24(1):61-66. doi:10.1177/107110070302400110



PROCEDURE CHOICE DOES NOT SOLVE RECURRENCE

Across multiple surgical techniques specific to hallux valgus correction, long-term outcomes remain inconsistent, suggesting that procedure choice alone does not determine sustainable correction.

Long-term results of the Hohmann and Lapidus procedure for the correction of hallux valgus: a prospective, randomised trial with eight- to 11-year follow-up involving 101 feet

Faber FW, van Kampen PM, Bloembergen MW

- › Lapidus and distal osteotomy perform similarly with respect to clinical outcomes, radiographic outcomes, and patient satisfaction scores over 8-11 years.

Clinical Takeaway: Changing the procedure type does not improve recurrence, highlighting how the loss of correction over time remains a key issue.

Bone Joint J. 2013;95-B(9):1222-1226. doi:10.1302/0301-620X.95B9.31560

Long-term follow-up of a randomized controlled trial comparing scarf to chevron osteotomy in hallux valgus correction

Jeuken RM, Schotanus MGM, Kort NP, Deenik A, Jong B, Hendrickx RP

- › No significant long-term difference between scarf and chevron osteotomies after 14-year follow-up
- › High rate of recurrence between techniques, suggesting procedure choice alone does not influence the longevity of repair.

Clinical Takeaway: Long-term success of repair likely depends more on soft-tissue considerations and stability than osteotomy technique alone.

Foot Ankle Int. 2016;37(7):687-695. doi:10.1177/1071100716639574

Interdigital vs transarticular lateral release with scarf osteotomy

Hartenbach F, Höger B, Kristen KH, Trnka HJ

- › Technique choice doesn't drive outcomes, as supported by the finding that interdigital vs transarticular approaches show equivalent long-term clinical outcomes and radiographic results.

Clinical Takeaway: The key problem is durability. Consistent outcomes across techniques highlight that loss of correction, rather than surgical approach, is the primary failure in hallux valgus correction.

Foot Ankle Int. 2022;43(2):193-202. doi:10.1177/10711007211035374

RECURRENCE IS COMMON AND PREDICTABLE

Long-term follow-up studies demonstrate that recurrence is common and influenced by radiographic metrics and deformity severity, highlighting a persistent challenge in maintaining correction.

Preoperative radiological factors correlated to long-term recurrence of hallux valgus following distal chevron osteotomy

Pentikainen I, Ojala R, Ohtonen P, Piippo J, Leppilahti J

- › Recurrence is predictable based on preoperative severity, as determined by radiographic metrics.
- › Radiographic recurrence of hallux valgus after chevron osteotomy is very common long-term (~73%), especially in mild to moderate deformities, highlighting the limitations regarding the strength of the repair.

Clinical Takeaway: This study suggests more severe bunions have a higher rate of recurrence, further supporting the consideration for augmentation.

Foot Ankle Int. 2014;35(12):1262-1267. doi:10.1177/1071100714548703

Patient reported outcomes and recurrence following 127 primary Lapidus surgeries for hallux valgus

Galli SH, Johnson N, Davis WH, Anderson RB, Jones III CP, Cohen BE

- › Hallux valgus recurrence is common (~38% radiographic recurrence) even with Lapidus, although only 24% of patients perceived symptoms and ~10% required reoperation.
- › Not all recurrence impacts symptoms, but perceived recurrence significantly lowers patient-reported outcomes (ie, AOFAS, FAAM) and patient satisfaction.

Clinical Takeaway: Even Lapidus does not eliminate drift over time and thus maintaining the correction is the key challenge, supporting the rationale for augmentation.

Foot Ankle Orthop. 2020;5(4):2473011420S00222. doi:10.1177/2473011420S00222

Reference

1. Arthrex, Inc. Data on file (LA1-000222-en-US_A). Naples, FL; 2018.