

Long-term lateral ankle pain and/or instability are not uncommon conditions following a severe ankle sprain. Addressing these through anatomic reconstruction has been shown to give superior outcomes; but the quality of available tissue, patient size, and anticipated level of activity may demand that a primary reconstruction be augmented as well. Current augmentation materials primarily rely on strong and inelastic materials to reinforce a repairs. However, augmented stability may create abnormal ankle kinematic motion if the material is not biomechanically similar to native ligament.

Significant to the technique described here is the utilization of a novel Dynamic Matrix™ that has been shown to have biomechanical properties mimicing the native ATFL. This matrix promises flexible stability, not constraint. Uniquely capable of protecting the repair, as well as the kinematics, Artelon's FlexBand matrix immediately aids in the restoration of joint kinematics, resists degradation of mechanical properties, and supports efficient tissue regeneration.

This guide offers an advanced surgical method for dynamic lateral ankle reconstruction that can be accomplished with various manufacturers' soft tissue fixation devices.

Note: Artelon's FlexBand is approved to augment soft tissue reconstruction of the lateral ankle.

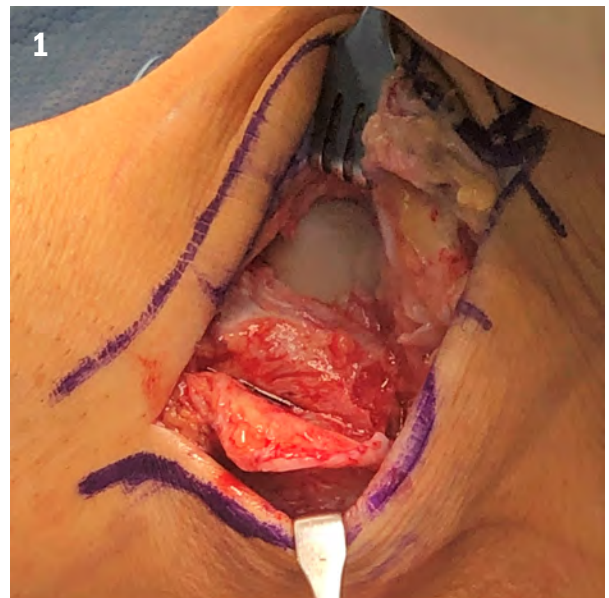
REQUIRED IMPLANTS AND INSTRUMENTATION:

- 1 Artelon FlexBand (0.5 x 16cm or 0.5 x 8cm)
- Drill bit matching the diameter of desired fixation device
- Tap (up to 1mm larger than fixation device)
- Beath Needle
- PEEK fixation screw (x2)
- Suture passing device
- Suture Anchor (x2)

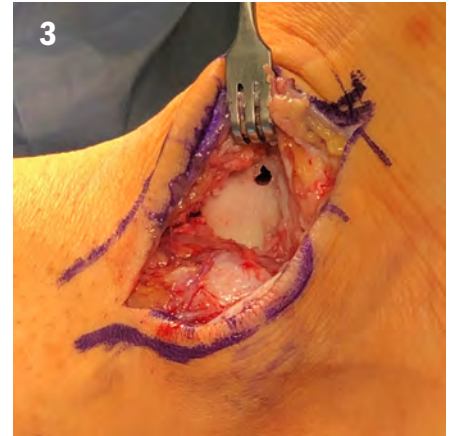
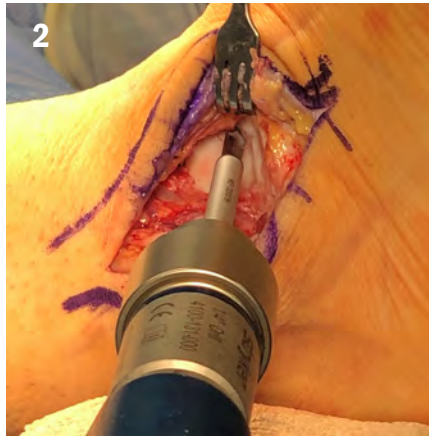


SURGICAL PROCEDURE

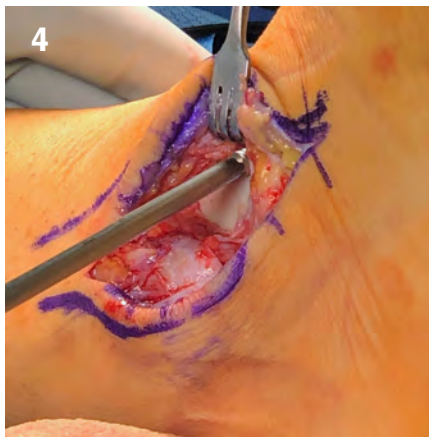
- 1** A curvilinear lateral incision is made over the distal aspect of the fibula. The capsule, including the ATFL and CFL, is then incised and reflected off of the fibula (Figure 1).



- 2** The talar neck is exposed with the ankle in maximum dorsiflexion, and
- 3** by utilizing a solid drill, a tunnel is created just anterior to the distal portion of talar cartilage.

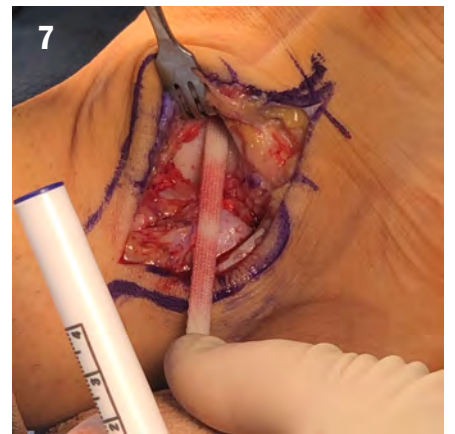
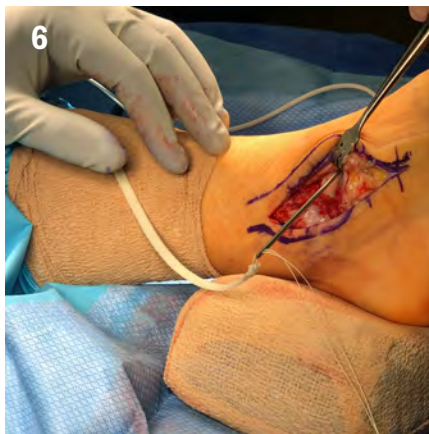


- 4** The tunnel is then tapped by hand (1mm larger than fixation device is recommended) to a depth equal to or slightly deeper than the anticipated fixation device.



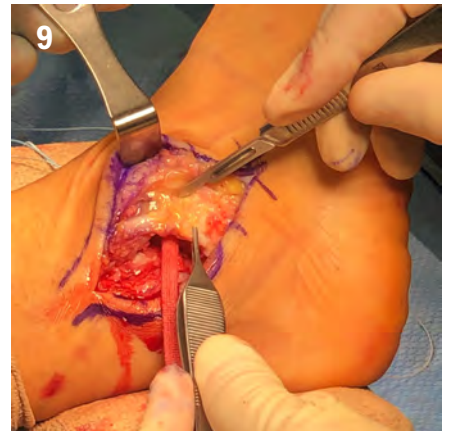
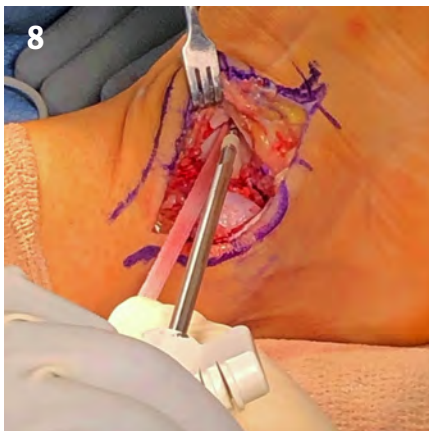
- 5** A Beath needle is then passed through the tunnel from lateral to medial, out the talus and medial soft tissues, exiting just anterior to the medial malleolus.

- 6** On the back table, whip-stitches are added to the ends of the FlexBand.
- 7** The Beath needle is used to pull the attached suture tail from lateral to medial, and the FlexBand is brought into the bone tunnel.



The stitches are subsequently pulled medially until the FlexBand is 'seated' at the bottom of the tunnel.

- 8** While held secure in the bone tunnel medially, and under light tension laterally, the fixation device is inserted into the lateral talar tunnel to secure the FlexBand.



- 9** The ankle capsule is then located, and a small incision is made through the anterior ATFL/capsule as a 'pass through' for the matrix.

SURGICAL TECHNIQUE

DYNAMIC LATERAL ANKLE STABILIZATION

TECHNIQUE UTILIZING ARTELON® FLEXBAND™ TECHNOLOGY

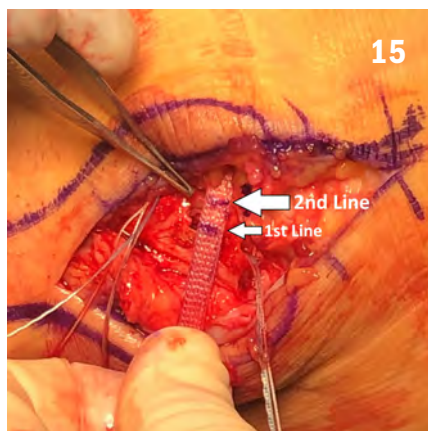
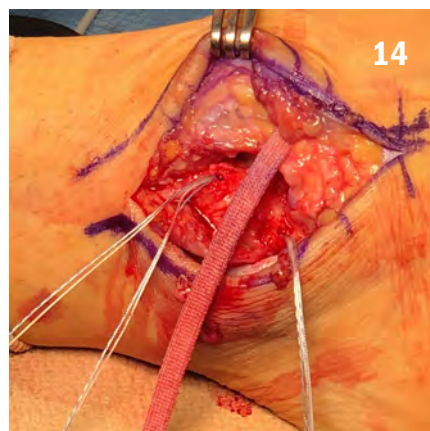
Described by Carroll Jones, MD, OrthoCarolina (Charlotte, NC)



- 10 Once the FlexBand is pulled through the capsule, it is brought across the fibula to map the ATFL insertion point and planned position of the matrix.
- 11



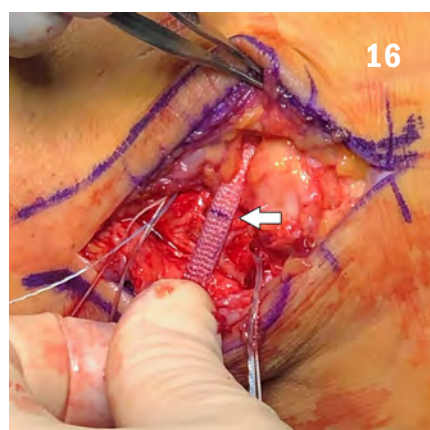
- 12 A second bone tunnel is created in the fibula from anterior lateral to posterior and exiting the retro-fibular groove. The peroneal tendons are retracted during this step to avoid injury.
- 13



- 13 The fibular bone tunnel is then tapped (1mm larger than fixation device is recommended) the entire depth of the tunnel.
- 14

- 14 At the surgeon's discretion, suture anchors may be placed to advance the native ATFL and CFL back to the fibula prior to securing the FlexBand.
- 15

- 15 The FlexBand is brought over the fibular bone tunnel. A mark is made on the FlexBand where it crosses the middle of the bone tunnel.
- 16



- 16 A second mark is then made on the FlexBand roughly 20% (roughly 1cm) of the distance back to the talar insertion point. This second mark denotes how deep the FlexBand should be pulled into the tunnel for optimal tension before fixation.
- 17

- 17 Utilizing a suture passer, the unsecured/whip-stitched end of the FlexBand is then passed through the fibular tunnel from anterior to posterior.

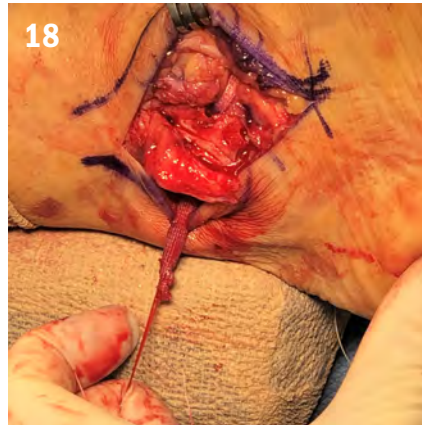
18 The FlexBand is then pulled through the fibula until the previously marked 'second line' is just inside the anterior entrance of the fibular tunnel.

19 While maintaining posterior tension with the attached suture, the FlexBand is secured within the fibula by the insertion of the fixation device.

Once fixation is secured, ankle range of motion and tension are evaluated by the surgeon. Once confirmed, the excess FlexBand material is cut away from the posterior fibula.

20 Finally, the capsule may be reinforced, followed by a layered closure of the surgeon's preference.

21



POST-OPERATIVE CARE

Immediately postoperatively, the patient is placed into a short leg splint or walking boot (depending on surgeon's preference).