



Treace Medical Concepts Compression Implant System

Surgical Technique
Lapidus, Lesser TMT, and 1st MTP Fusion

Lapidus Fusion

The Treace Medical Concepts (TMC) Compression Implant System is composed of a variety of implant designs and sizes. The correct implant selection for the procedure is extremely important, and preoperative consideration of the proper fixation option will increase the potential for surgical success.

Surgical Approach

1. Perform a longitudinal incision dorsally over the 1st tarsometatarsal (TMT) joint medial to the extensor hallucis longus. Release the plantar ligaments with an osteotome to allow for mobilization of the metatarsal. Make frontal (rotation), sagittal, and transverse plane adjustments to position the metatarsal in corrected alignment. Use a K-wire placed from the 1st metatarsal through the 2nd metatarsal to temporarily hold the correction in place. With a cutting device, remove the cartilage and small amount of subchondral bone from the base of the metatarsal and remove the excised material. Make a cut to the face of the cuneiform and remove cut cartilage/bone fragment. Use the appropriate size drill to expose bleeding bone on both cut surfaces to maximize fusion potential.
2. Provisionally fixate and pre-compress the 1st metatarsal and cuneiform bones together in proper alignment using threaded olive wire(s) and/or straight K-wire(s) as surgeon desires. Olive wires should be placed distal-dorsal to proximal plantar across the joint.

Note: Autograft or allograft may be utilized as needed to enhance fusion potential.

Preparation for Implantation

3. Select the appropriate two or four legged compression implant for the Lapidus fusion procedure that meets the specific needs associated with the patient's anatomy and surgical goals.
4. Select the appropriately sized drill guide and place it on the bone surface dorsally or dorsal-lateral in such a way that drill guide spans the fusion site, ensuring that there is adequate room for the implant on either side of the fusion.

Note: Provisional fixation can be used to stabilize the drill guide on the bone.

5. Confirm drill guide position with fluoroscopy. If trajectory is deemed unacceptable, the surgeon may reposition the drill guide.

Note: The underside of the drill guide should be in contact with bone, which may require contouring of the bone surface to properly seat the drill guide.

6. Once location and trajectory are deemed acceptable, drill holes to the proper size and depth. Leave drills in place for stability as needed.

7. Remove the drills from the drill guide. Then remove the drill guide.

Implant Insertion

8. Select the appropriate TMC compression implant and check that the pre-installed threaded rods are fully installed.

Caution: Use care to not squeeze the threaded rods unless the rods are fully installed and secured onto the implant, as this can result in deformation of the threaded rods.

9. While manually squeezing the threaded rods to a parallel position, insert the threaded rods into the corresponding holes of the inserter cap to hold the implant in a pre-loaded configuration.

Caution: Use care to not squeeze the threaded rods past a parallel position, as this can result in permanent deformation of the implant.

10. Insert the legs of the TMC implant into the pre-drilled holes in the bone. Light tapping on the inserter cap may be helpful in advancing the implant. When properly installed, the bottom surface of the implant should sit flush against the surface of the bone.

Caution: Avoid excessive force or impaction when inserting the implant into the bone.

11. While lightly squeezing the threaded rods, manually remove the inserter cap to release the pre-loaded TMC compression implant. Remove the threaded rods from the implant manually. If required, use the appropriate instrumentation to aid with the removal of the rods. Proper implant placement can be confirmed on fluoroscopy.

12. Align the end of the inserter cap with the bridge of the implant and use as needed to completely seat the implant.

13. A second TMC compression implant may be used in the procedure as deemed necessary by the surgeon. In the Lapidus fusion procedure, it would be advised to place the second implant at approximately a 90-degree circumferential offset (medial or medial-plantar position) to the first dorsally-located implant. Install the second implant following the same steps as described for the first implant. Care should be taken to avoid extensive dissection or periosteal stripping if using a second compression implant.

14. Remove any remaining instrumentation and/or provisional fixation.

Implant Removal

15. To remove the implant, utilize the threaded rods and/or use general orthopedic instrumentation to remove the implant. Where utilizing the threaded rods, attach the threaded rods into the threaded holes in the implant and fully tighten using the appropriate instrumentation. Gently squeeze the threaded rods and insert them into the inserter cap. Use general orthopedic instrumentation such as an osteotome or elevator to leverage the bridge of the implant to remove in line with the axis of the threaded rods.

Note: If there is tissue growth within the implant that prevents removal, the tissue may be removed with a generally available surgical instrument.

Note: If the implant is recessed, use an elevator to lift the implant bridge and then use another general instrument such as an osteotome or elevator to remove the implant. If solidly connected, implants can be removed by either cutting the bridge of the implant or cutting the leg of the implant near the bridge and removing the remnants with an elevator.

Lesser TMT Fusion

The Treace Medical Concepts (TMC) Compression Implant System is composed of a variety of implant designs and sizes. The correct implant selection for the procedure is extremely important, and preoperative consideration of the proper fixation option will increase the potential for surgical success.

Surgical Approach

1. Perform a longitudinal dorsal incision over the selected lesser tarsometatarsal (TMT) joint. Expose the joint and use a cutting device to remove the articular cartilage from the joint surfaces. Use the 2mm drill to expose bleeding bone on both cut surfaces to maximize fusion potential.
2. Provisionally fixate and pre-compress the metatarsal and cuneiform bones together in proper alignment using threaded olive wire(s) and/or straight K-wire(s) as surgeon desires.

Note: Autograft or allograft may be utilized as needed to enhance fusion potential.

Preparation for Implantation

3. Select the appropriate two or four legged compression implant for the lesser TMT fusion procedure that meets the specific needs associated with the patient's anatomy and surgical goals.
4. Select the appropriately sized drill guide and place it on the bone surface dorsally in such a way that drill guide spans the fusion site, ensuring that there is adequate room for the implant on either side of the fusion.

Note: Provisional fixation can be used to stabilize the drill guide on the bone.

5. Confirm drill guide position with fluoroscopy. If trajectory is deemed unacceptable, the surgeon may reposition the drill guide.

Note: The underside of the drill guide should be in contact with bone, which may require contouring of the bone surface to properly seat the drill guide.

6. Once location and trajectory are deemed acceptable, drill holes to the proper size and depth. Leave drills in place for stability as needed.
7. Remove the drills from the drill guide. Then remove the drill guide.

Implant Insertion

8. Select the appropriate TMC compression implant and check that the pre-installed threaded rods are fully installed.

Caution: Use care to not squeeze the threaded rods unless the rods are fully installed and secured onto the implant, as this can result in deformation of the threaded rods.

9. While manually squeezing the threaded rods to a parallel position, insert the threaded rods into the corresponding holes of the inserter cap to hold the implant in a pre-loaded configuration.

Caution: Use care to not squeeze the threaded rods past a parallel position, as this can result in permanent deformation of the implant.

10. Insert the legs of the implant into the pre-drilled holes in the bone. Light tapping on the inserter cap may be helpful in advancing the implant. When properly installed, the bottom surface of the implant should sit flush against the surface of the bone.

Caution: Avoid excessive force or impaction when inserting the implant into the bone.

11. While lightly squeezing the threaded rods, manually remove the inserter cap to release the pre-loaded TMC compression implant. Remove the threaded rods from the implant manually. If required, use the appropriate instrumentation to aid with removal of the threaded rods. Proper implant placement can be confirmed on fluoroscopy.

12. Align the end of the inserter cap with the bridge of the implant and use as needed to completely seat the implant.

13. Remove any remaining instrumentation and/or provisional fixation.

Implant Removal

14. To remove the implant, utilize the threaded rods and/or use general orthopedic instrumentation to remove the implant. Where utilizing the threaded rods, attach the threaded rods into the threaded holes in the implant and fully tighten using the appropriate instrumentation. Gently squeeze the threaded rods and insert them into the inserter cap. Use general orthopedic instrumentation such as an osteotome or elevator to leverage the bridge of the implant to remove in line with the axis of the threaded rods.

Note: If there is tissue growth within the implant that prevents removal, the tissue may be removed with a generally available surgical instrument.

Note: If the implant is recessed, use an elevator to lift the implant bridge and then use another general instrument such as an osteotome or elevator to remove the implant. If solidly connected, implants can

be removed by either cutting the bridge of the implant or cutting the leg of the implant near the bridge and removing the remnants with an elevator.

1st Metatarsophalangeal (MTP) Fusion

The Treace Medical Concepts (TMC) Compression Implant System is composed of a variety of implant designs and sizes. The correct implant selection for the procedure is extremely important, and preoperative consideration of the proper fixation option will increase the potential for surgical success.

Surgical Approach

1. Perform a longitudinal incision beginning just proximal to the interphalangeal joint and extending over the 1st MTP joint medial to the extensor hallucis longus. Expose the proximal phalanx and metatarsal head and release the sesamoids. Denude all cartilage surfaces with a rongeur or using your preferred method until bleeding subchondral bone is exposed.
2. Provisionally fixate and pre-compress the metatarsal and phalanx bones together in proper alignment using threaded olive wire(s) and/or straight K-wire(s) as surgeon desires.

Note: Autograft or allograft may be utilized as needed to enhance fusion potential.

Preparation for Implantation

3. Select the appropriate two or four legged compression implant for the MTP fusion procedure that meets the specific needs associated with the patient's anatomy and surgical goals.
4. Select the appropriately sized drill guide and place it on the bone surface dorsal-laterally in such a way that drill guide spans the fusion site, ensuring that there is adequate room for the implant on either side of the fusion.

Note: Provisional fixation can be used to stabilize the drill guide on the bone.

5. Confirm drill guide position with fluoroscopy. If trajectory is deemed unacceptable, the surgeon may reposition the drill guide.

Note: The underside of the drill guide should be in contact with bone, which may require contouring of the bone surface to properly seat the drill guide.

6. Once location and trajectory are deemed acceptable, drill holes to the proper size and depth. Leave the drills in place for stability as needed.
7. Remove the drills from the drill guide. Then remove the drill guide.

Implant Insertion

8. Select the appropriate TMC compression implant and check that the pre-installed threaded rods are fully installed.

Caution: Use care to not squeeze the threaded rods unless the rods are fully installed and secured onto the implant, as this can result in deformation of the threaded rods.

9. While manually squeezing the threaded rods to a parallel position, insert the threaded rods into the corresponding holes of the inserter cap to hold the implant in a pre-loaded configuration.

Caution: Use care to not squeeze the threaded rods past a parallel position, as this can result in permanent deformation of the implant.

10. Insert the legs of the implant into the pre-drilled holes in the bone. Light tapping on the inserter cap may be helpful in advancing the implant. When properly installed, the bottom surface of the implant should sit flush against the surface of the bone.

Caution: Avoid excessive force or impaction when inserting the implant into the bone.

11. While lightly squeezing the threaded rods, manually remove the inserter cap to release the pre-loaded TMC compression implant. Remove the threaded rods from the implant manually. If required, use the appropriate instrumentation to aid with removal of the threaded rods. Proper implant placement can be confirmed on fluoroscopy.

12. Align the end of the inserter cap with the bridge of the implant and use as needed to completely seat the implant.

13. A second implant may be used in the procedure as deemed necessary by the surgeon. In the MTP fusion procedure, it would be advised to place the second implant at approximately a 90-degree circumferential offset (medial or dorsal-medial position) to the first dorsal-lateral located implant. Install the second implant following the same steps as described for the first implant. Care should be taken to avoid extensive dissection or periosteal stripping if using a second compression implant.

14. Remove any remaining instrumentation and/or provisional fixation.

Implant Removal

15. To remove the implant, utilize the appropriate threaded rods and/or use general orthopedic instrumentation to remove the implant. Where utilizing the threaded rods, attach the threaded rods into the threaded holes in the implant and fully tighten using the appropriate instrumentation. Gently squeeze the threaded rods and insert them into the inserter cap. Use general orthopedic

instrumentation such as an osteotome or elevator to leverage the bridge of the implant to remove in line with the axis of the threaded rods.

Note: If there is tissue growth within the implant that prevents removal, the tissue may be removed with a generally available surgical instrument.

Note: If the implant is recessed, use an elevator to lift the implant bridge and then use another general instrument such as an osteotome or elevator to remove the implant. If solidly connected, implants can be removed by either cutting the bridge of the implant or cutting the leg of the implant near the bridge and removing the remnants with an osteotome or elevator.



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