Tibial Fixation
Surgical Protocol by
Mark J. Albritton, M.D. and
Sherwin Ho, M.D.
This material represents the surgical technique utilized by Mark J. Albritton, M.D. and Sherwin Ho, M.D. Biomet does not practice medicine. The treating surgeon is responsible for determining the appropriate treatment, technique(s), and product(s) for each individual patient.

- Uniquely designed PEEK-Optima Implant affixes the soft tissue graft in the tibial tunnel with one simple surgical step.

- Graft tensioner and inserter shaft eliminate the need for reusable instruments, saving costly preparation time by the hospital or surgery center.
- The TunneLoc implant is packaged sterile with the graft tensioner and inserter shaft.

- Hands-free tensioner removes creep from the system and maintains tension during implant insertion.

- Tapered implant increases compression during insertion
- Implant provides aperture and cortical fixation
- Self aligning tip geometry
- Cortical stop

- Longitudinal ribs evenly distribute graft enabling circumferential healing.
With assistance of a tibial guide, drill a guide pin through the tibia to exit in the center of the native ACL footprint on the tibial plateau. Ream over the guide pin with a cannulated reamer that corresponds to the graft size. The femoral tunnel can be prepared before or after the tibial tunnel based on surgeon preference.

The ACL graft should be passed through the tibial and femoral tunnels and secured on the femoral side. Choose the TunneLoc Tibial Fixation Device considering bone quality and the size of the previously reamed tibial tunnel. The TunneLoc Tibial Fixation Device includes an implant that is preloaded on an inserter shaft and graft tensioner assembly.

Separate the two or four stranded graft as it exits the tibia. Place a 1.5mm Nitinol guidewire between the strands of the soft tissue graft (Figure 1). Rotate the graft tensioner arms to face towards the implant until they snap into position (Figure 2).
Pass the TunneLoc Tibial Fixation Device over the 1.5mm Nitinol guidewire (Figure 3) and position the foot of the graft tensioner inside the incision, onto the anterior-medial tibia with the leading edge of the implant beginning to enter the tibial tunnel (Figure 3a).
Wrap the whip sutures from each individual graft strand around the graft tensioner attachment points. If using a four-ended graft, use the four corner suture attachment points on the graft tensioner (Figure 4).

If using a two-ended graft, use the two middle suture attachment points on the graft tensioner (Figure 5).
The sutures should be wrapped around the graft tensioner attachment points three to four times and then locked by passing it through the locking tab on the tensioner arm (Figure 6).

Once each suture has been secured to the TunneLoc Tibial Fixation Device, pull back on the self-locking tensioning handle until desired tension is achieved (Figure 7).
The TunneLoc Tibial Fixation Device is now secure on the tibia. Cycle the knee to remove any creep from the graft (Figure 8).

After removing all creep from the system, the graft can now be retentioned by pulling back on the self-locking tensioning handle. Viewing arthroscopically, probe the tension in all strands of the graft. Tension should be equal in all strands and similar to the tension of the native PCL. If too much tension is being applied to the graft, release tension using the tension release button (Figure 9). Then reapply tension by pushing the tension release button back up to its original position and pulling back on the self-locking tensioning handle.
Impact the implant into the tibial tunnel by malleting the strike plate at the back of the inserter shaft (Figure 10). The radial etch lines at 10mm, 20mm, and STOP positions will give the surgeon feedback regarding position of the implant within the bone tunnel.

Do not mallet the inserter shaft beyond the etch line labeled STOP because the implant could be inserted past the cortical bone, possibly compromising fixation strength.
Trim the graft ends as they exit the tibia (Figure 12). Fixation is now complete. Release tension by pulling back slightly on the self-locking tensioning handle while simultaneously pushing the tension release button. Remove the whip sutures (Figures 11 & 11a).
**INDICATIONS**
To provide fixation of soft-tissue grafts within the tibial tunnel during anterior cruciate ligament (ACL) and/or posterior cruciate ligament (PCL) reconstruction.

**CONTRAINDICATIONS**
1. Active infection.
2. Patients with mental or neurologic conditions who are unwilling or incapable of following postoperative care instructions.
3. Patient conditions including: blood supply limitations, insufficient quantity or quality of bone for attachment or latent infections.
4. Pathologic soft tissue conditions, which would prevent secure fixations.
This material is intended for health care professionals and the Biomet sales force only. Distribution to any other recipient is prohibited. All content herein is protected by copyright, trademarks and other intellectual property rights owned by or licensed to Biomet Inc. or its affiliates unless otherwise indicated. This material must not be redistributed, duplicated or disclosed, in whole or in part, without the express written consent of Biomet.

Check for country product clearances and reference product specific instructions for use. For complete product information, including indications, contraindications, warnings, precautions, and potential adverse effects, see the package insert and Biomet’s website.

This technique was prepared in conjunction with a licensed health care professional. Biomet does not practice medicine and does not recommend any particular orthopedic implant or surgical technique for use on a specific patient. The surgeon is responsible for determining the appropriate device(s) and technique(s) for each individual patient.

Not for distribution in France.

PEEK-Optima is a registered trademark of Invibio LTD. Corp.