

TOTAL ANKLE ARTHROPLASTY PROTOCOL**PREHAB:**

1. Goal - Swelling control and full extension by surgical date.
 - a. Work with PT on ambulation assistive devices
2. Strengthening (3 sets of 10-20 reps):
 - a. 4-way SLR (straight leg raises) with weight or a multi-hip machine
 - b. Quad sets
 - c. SAQ (Short Arc Quad)
 - d. Knee Extension stretch
 - e. Heel Glides
2. Cardio:
 - a. Walk 1-2 miles/day
 - b. Bike for 30 minutes 3-5 days/week

POST-OP WEEK 0-2:**Home Exercises/expectations:**

1. Pain management:
 - a. Cryotherapy: Apply to surgical site to decrease post op edema and help with pain reduction. Use as often as needed.
 - b. Prescription pain medications as needed. Wean off after 4 weeks and start Acetaminophen and/or NSAIDS as needed.
 - c. Elevation of surgical site above the level of your heart.
2. Follow up with the Orthopedic Team (Physician Assistant) at 2 weeks post op.

Therapy Goals:

1. Weight bearing:
 - a. Non-weight bearing on crutches in splint
2. Range of motion:
 - a. Supine passive hamstring stretch
3. Strengthening:
 - a. Quad sets, Straight leg raise, Abdominal bracing, Hip abduction, Sidelying hip external rotation - clamshell, Prone hip extension

POST-OP WEEK 2-6:**Home Expectations:**

1. Pain <5/10
2. Decreased swelling
3. Improving ankle ROM all planes
4. Good tolerance with standing in place with 50% of body weight through the involved leg in boot

Therapy Goals: (may start formal therapy 4-6 weeks post-op)

1. Weight bearing:
 - a. When standing in place ONLY, may weight bear for balance in the boot. **Maintain nonweightbearing while walking.**
 - b. May remove boot to perform exercises and hygiene
 - c. Keep boot on at night
 - d. *No foot/ankle strengthening against resistance or stretching of involved musculature until 3 months post-operative if there are any tendon transfers*
2. Range of motion/mobility
 - a. Initiate ankle PROM, AAROM, AROM: Ankle pumps, Ankle circles, Ankle inversion, Ankle eversion, Calf stretch with towel or calf stretch with strap, Seated heel-slides for ankle dorsi-flexion ROM
 - b. If stiff from boot immobilization, initiate great toe dorsiflexion and plantarflexion stretching
3. Strengthening:
 - a. Once able sit with foot flat on the floor in neutral (0 degrees) of ankle dorsi-flexion: Seated heel raises, Seated toe raises, Seated arch doming, Seated great toe flexion with lesser toes extension, Seated great toe extension with lesser toes flexion, Seated toe piano, Seated toe abduction/adduction (spreads and squeezes)

POST-OP WEEKS 6-10:

Home Expectations:

1. Continue to control edema as weight bearing and activity level progresses
2. Good tolerance with transition from boot to supportive sneaker with/without the need for assistive device (<3/10 with walking/weight bearing)

Therapy Goals:

1. Weight bearing: May still use assistive device if needed
 - a. Week 6: transition to WBAT in walking boot.
 - b. Week 7: begin to wean boot by spending small amounts of time in supportive sneaker for weight shifting and short distances on level surfaces
 - c. Week 8: transition to supportive sneakers for all ambulation.
2. Range of motion:
 - a. Begin gentle standing gastrocnemius stretch and Soleus stretch once out of the boot
 - b. Gentle stretching of proximal muscle groups as indicated
 - i. Standing quad stretch, standing hamstring stretch, kneeling hip flexor stretch, piriformis stretch
 - c. Ankle/foot mobilizations and as indicated
 - d. Scar mobilization and soft tissue mobilization as indicated
3. Strengthening:
 - a. Stationary bicycle (initially in boot and then progress to sneaker once out of boot)
 - b. Initiate foot/ankle resistive strengthening (if tendon transfers have been performed, begin at 3 months)

- c. Begin four way ankle with resistance band - **do not begin this until 3 months post-op if any tendon transfers performed**
- d. Gym equipment: hip abductor machine, adductor machine, hip extension machine, Roman chair, knee extension machine, and hamstring curl machine

POST-OP WEEKS 11-13:

Home Expectations:

1. Minimize post-exercise pain/swelling
2. Normalize gait in supportive sneaker without need for any assistive device

Therapy Goals:

1. Weight bearing:
 - a. Full weight bearing in supportive sneaker
 - b. *No foot/ankle strengthening against resistance or stretching of involved musculature until 3 months post-operative if there are any tendon transfers*
2. Range of motion:
 - a. Ankle/foot mobilization as indicated
 - b. Continue AROM/AAROM/PROM activities per prior phases as needed
 - c. Scar mobilization:
 - i. Start cross friction and circular motion massage of incision with Vitamin E or Scar oil, 2-3 minutes 3-4 times daily once the scar is healed to prevent scarring and to prevent tenderness.
 - d. Standing ankle dorsiflexion stretch on step
3. Strengthening:
 - a. Progress intensity (strength) and duration (endurance) of exercises
 - b. Gym equipment: leg press machine
 - c. Romanian deadlift, bilateral mini squats progressing to bilateral squats
4. Balance/proprioception:
 - a. Double limb standing balance activities on stable surfaces progressing to eyes closed
 - b. Double limb standing balance utilizing uneven surface (wobble board, foam, etc)

POST-OP WEEKS 14-16:

Home Expectations:

1. No increased swelling post-exercise that exceeds pre-exercise baseline
2. No pain during or after exercise
3. Good tolerance with addition of single limb exercises

Therapy Goals:

1. Weight bearing:
 - a. Weight bearing as tolerated in supportive sneakers
2. Range of motion:
 - a. Standing ankle dorsiflexion mobilization on step
3. Strengthening:
 - a. Begin bilateral heel raises, bilateral squats
 - b. Seated calf machine
4. Balance/proprioception:

- a. Begin single limb balance/proprioception to unstable surfaces (ex. Single leg balance)

POST-OP MONTHS 4-6:

Home Expectations:

1. No increased swelling/pain with 30 minutes of fast-paced walking
2. Standing heel rise test >90% of uninjured in available ankle range
3. 5/5 ankle strength (in available range) and lower extremity strength
4. Single leg balance on level surface > 30 seconds

Therapy Goals:

1. Range of motion:
 - a. Continue per prior phases as needed
2. Strengthening:
 - a. If able to perform bilateral standing heel raises with 75% of body weight shifted through the involved (plantar flexion through range available - it is expected to be reduced), progress to Eccentric calf raises (bilateral raises, unilateral lowering) on level surface followed by progression to unilaterally heel raises
 - b. The following exercises to focus on proper pelvis and lower extremity control with emphasis on good proximal stability:
 - i. hip hike
 - ii. forward lunges: begin leading with injured leg only then progress to the leading with uninjured leg
 - iii. lateral lunges
 - iv. single leg strengthening progression: partial weight bearing single leg press, slide board lunges: retro and lateral, step-ups, step-ups with March, lateral step, step-downs, single leg squats, single leg wall slides
3. Balance/proprioception:
 - a. Progress unilateral balance activities to unstable surfaces

POST-OP 6+ MONTH:

Home Expectations:

1. Return to full activity:
 - a. As indicated by adequate muscle strength, proprioceptive development, and physician orders.

This protocol provides you with general guidelines for the rehabilitation of Total Ankle Arthroplasty. Changes in the program are made as appropriate/indicated for each patient. Any further restrictions on the physician's order take precedence. If you have any questions regarding the patient and/or protocol, please send a message to the Little Falls Orthopedics Team or Physical Therapy Department at (320) 631-2205.