

Rehabilitation Guidelines Following Total Ankle Arthroplasty

Rehabilitation is vital to regaining motion, strength and function of the ankle after surgery. These rehabilitation guidelines are presented in a criterion based progression. General time frames are given for reference to the average, but patients will progress at different rates depending on their age, comorbidities, pre-surgical range of motion, strength, health/functional status, rehabilitation compliance, learning barriers and complications. Specific time frames, restrictions and precautions are given to protect healing tissues and the surgical reconstruction. Attention is given to other musculoskeletal issues in areas above the replaced joint that can influence the outcome of the total ankle arthroplasty (TAA). The goal of this procedure is to restore daily function and allow return to an active, healthy lifestyle.

Basic Expectations Following Surgery

Pain and Swelling

This is a procedure that can be painful during the recovery period and given the extensive nature of the surgery, can cause swelling. It is normal for the foot and ankle to be swollen 6–12 months post-operatively. Redness does not necessarily indicate infection. Significant drainage from the wound is usually a sign of infection.

Driving

If the operation is on the right foot, the patient may return to driving when they can safely demonstrate an emergency stop to someone else. To ensure legality, the patient should contact their local insurer.

Return to Work

Return to work at four months is standard, however the following should be taken into consideration:

- Type of work
- Surgeon's approval
- Post-operative complications
- No patient with a total ankle replacement should be doing work that causes impact to the joint.

Rehabilitation Guidelines Following Total Ankle Arthroplasty

PHASE I (surgery to 6 weeks after surgery)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments begin approximately 14 days after surgery, 1–2 times per week
Rehabilitation Goals	<ul style="list-style-type: none"> • Activities of daily living (ADLs) with safe crutch/walker use; instruction as needed • Control swelling and pain • Begin ankle range of motion (ROM) at 2 weeks (dorsiflexion (DF)/plantar flexion (PF)) • Maintain hip and knee ROM • Increase hip, knee and core strength
Precautions	<ul style="list-style-type: none"> • Non-weight bearing (NWB). Short leg splint two weeks followed by CAM boot for one month or until week 6 • Watch for signs of infection • Avoid long periods of dependent positioning of the foot and complete frequent elevation
Suggested Therapeutic Exercise/Treatment	<ul style="list-style-type: none"> • Frequent elevation of ankle above the level of the heart • Ankle active range of motion (AROM [DF/PF]) • Four-way leg raises lying down • Knee AROM • Transverse abdominis recruitment • Edema massage
Cardiovascular Exercise	<ul style="list-style-type: none"> • Upper body ergometer (UBE)
Progression Criteria	<ul style="list-style-type: none"> • 6 weeks post-op • No wound complications

Rehabilitation Guidelines Following Total Ankle Arthroplasty

PHASE II (begin after meeting Phase I criteria, usually 6 weeks after surgery)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments are 1–2 times per week
Rehabilitation Goals	<ul style="list-style-type: none"> • Reduce swelling • Increase ankle ROM in all planes • Weight-bearing tolerance in boot with safe ADL progression in standing • Increase mobility of scar • Maintain hip/knee ROM, strength and flexibility
Precautions	<ul style="list-style-type: none"> • Progress weight bearing as tolerated (WBAT) in boot per surgeon’s instructions
Suggested Therapeutic Exercise/Treatment	<ul style="list-style-type: none"> • Gait training and weight shifts • Ankle AROM/passive range of motion (PROM) • Calf stretching • Scar massage and soft tissue mobilization of calf • Joint mobilization—focus on talocrural distraction to improve ankle DF/PF • Four-way ankle isometrics • Seated tilt/biomechanical ankle platform system (BAPS) board • Seated knee extension and prone hamstring curls against gravity (no ankle weight) • Four-way leg raises in standing • Transverse abdominis strengthening
Cardiovascular Exercise	<ul style="list-style-type: none"> • Stationary bike (in boot, no resistance) • Swimming (once wound is fully healed)
Progression Criteria	<ul style="list-style-type: none"> • Able to ambulate independently in walking boot • Active ROM between 5° DF and 20° PF

Rehabilitation Guidelines Following Total Ankle Arthroplasty

PHASE III (begin after meeting Phase II criteria, usually 10 weeks after surgery)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments are once per week
Rehabilitation Goals	<ul style="list-style-type: none"> • WBAT in shoe • Normalize gait without assistive device • Retrain ankle proprioception • Improve ankle strength
Precautions	<ul style="list-style-type: none"> • Avoid exercises that create movement compensations • Wean from boot and progress WBAT, with use of ankle stabilizing orthosis (ASO) as needed
Suggested Therapeutic Exercise/Treatment	<ul style="list-style-type: none"> • Gait training • Scar massage and joint mobilizations as needed • Calf stretching • Four-way ankle strengthening with resistance band • Balance and proprioception exercises • Functional movements (squats, steps) • Core and lower extremity strengthening
Cardiovascular Exercise	<ul style="list-style-type: none"> • Stationary bike • Swimming
Progression Criteria	<ul style="list-style-type: none"> • Able to ambulate independently in shoe • Able to complete bilateral heel raises

Rehabilitation Guidelines Following Total Ankle Arthroplasty

PHASE IV (begin after meeting Phase III criteria, usually 14 weeks after surgery)

Appointments	<ul style="list-style-type: none"> • Rehabilitations appointments are once every 2-4 weeks
Rehabilitation Goals	<ul style="list-style-type: none"> • Normal gait pattern • Single leg stance with good control for >10 seconds • Ankle ROM between 10° DF to 35° PF • Able to complete single leg heel raise
Precautions	<ul style="list-style-type: none"> • Avoid forceful impact activities • Anticipate return to golf at 3-4 months, hiking 4-5 months
Suggested Therapeutic Exercise/Treatment	<ul style="list-style-type: none"> • Balance and proprioception exercises on unstable surfaces • Higher level core and lower extremity strengthening exercises • Higher level functional movements (floor transfers, lunges, walking on hillsides)
Cardiovascular Exercise	<ul style="list-style-type: none"> • Stationary bike progressing to outdoor cycling • Swimming • Walking • Golfing

These rehabilitation guidelines were developed collaboratively between UW Health and UnityPoint-Meriter Rehabilitation and the UW Health Foot and Ankle Orthopedic Physician group.

Updated 8/2018

References:

1. Martin RL, Stewart GW, Conti SF. Posttraumatic Ankle Arthritis: An Update on Conservative and Surgical Management. *J Orthop Sports Phys Ther.* 2007 May;37(5):253-9.
2. Steck JK, Anderson JB. Total Ankle Arthroplasty: Indications and Avoiding Complications. *Clin Podiatr Med Surg.* 2009 Apr;26(2):303-24

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