

Clinical Practice Guideline: Ankle Arthrodesis

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Product: Specialty

GUIDELINES

American Specialty Health – Specialty (ASH) considers services consisting of CPT Codes 27870 and 27871 to be medically necessary for the treatment of ankle pain or to correct deformity **upon meeting ALL of the following criteria:**

1. When supported by **1 or more of the following indications:**
 - Severe arthritis
 - Fracture not healed correctly
 - Failure of total ankle replacement
2. Failure of **at least 3 of the following** non-operative treatments:
 - Physical therapy
 - Bracing
 - Orthotics
 - Medications
 - Injection
 - Activity modification

CPT CODES AND DESCRIPTIONS

CPT Code	Description
27870	Arthrodesis, ankle, open
27871	Arthrodesis, tibiofibular joint, proximal or distal

BACKGROUND

Open ankle arthrodesis is a surgical procedure which fuses the ankle joint. Indications for this procedure are severe arthritis (DeHeer et al., 2012; Nihal et al, 2008), non-reconstructable ankle fracture (Beaman et al., 2014; Bozic et al, 2008), and as a salvage procedure for failed total ankle replacement (Gross et al., 2015; Espinosa et al., 2011). Surgical treatment is recommended for severe arthritis and non-reconstructable ankle fracture after the failure of non-operative care. Conservative care of ankle arthritis includes limitation and modification of activities, non-steroidal anti-inflammatory drugs, physical therapy, shoe modification with a rocker bottom sole, a locked ankle-foot orthosis (AFO) with a solid ankle cushion heel (SACH), a custom molded leather ankle brace, or a patellar tendon-bearing AFO. Conservative treatment for a fracture of the ankle will depend on the location of the fracture(s) and whether the ankle is stable (i.e., the fractured bones are in

1 place or barely out of place). Stable fractures are often treated non-surgically, which can
2 include casting or bracing for several weeks.

3
4 Several surgical approaches to the ankle may be considered for arthrodesis depending on
5 the deformity, fixation technique, condition of the soft tissues, and the surgeon's preference
6 and experience. The lateral approach is a common approach used for ankle fusion. The
7 medial approach may be used to expose the tibiotalar joint through a longitudinal incision
8 either directly over or anterior to the medial malleolus. The anterior approach may provide
9 good access to the entire ankle joint but may place the anterior neurovascular structures at
10 risk. A combined anteromedial and anterolateral longitudinal two-incision approach has
11 also been described. However, with this combined approach there is a risk of skin bridge
12 necrosis between the two incisions. In a posterior approach, both the ankle and subtalar
13 joints may be exposed and fused (Nihal et al., 2008).

14
15 Ankle arthrosis is one of the common problems for which patients present to the foot and
16 ankle surgeon. Surgical treatment options include arthroscopic debridement, synovectomy,
17 excision of impinging osteophytes, total ankle replacement, or arthrodesis. Results of
18 debridement for advanced arthrosis may be limited. Ankle arthrodesis remains the primary
19 surgical treatment option for disabling ankle arthrosis in most patients, especially for end-
20 stage ankle arthritis in the appropriate patient. Incisional approach and fixation technique
21 should be based on the patient and his or her specific needs. Arthrodesis can be achieved
22 with adequate resection of cartilage, good compression across the fusion site, stable
23 fixation, proper postoperative protocol, and patient compliance. It is important to
24 remember that positioning of the ankle joint is fundamental in ankle arthrodesis. There are
25 complications that can arise from the ankle fusion, including the need for further surgical
26 intervention owing to arthritis in the subtalar and midtarsal joints. The purpose of any ankle
27 arthrodesis procedure should be a well-aligned ankle joint with the foot at a 90° angle to
28 the leg. A well-positioned ankle fusion can be very successful in alleviating pain, correcting
29 the deformity, and restoring a functional limb (DeHeer et al., 2012).

30
31 Despite improvement in outcome after ankle arthroplasty, fusion of the ankle joint is still
32 considered the gold standard treatment for severe ankle arthritis. A matter of concern is
33 deterioration of clinical outcome as a result of loss of motion and advancing degeneration
34 of adjacent joints. Hendrickx et al. (2011) performed a long-term retrospective study to
35 evaluate the outcomes of patients who received ankle arthrodesis procedures for
36 osteoarthritis ($N=60$). All patients were assessed using validated questionnaires and clinical
37 rating systems: Short Form 36 (SF-36), American Orthopaedic Foot and Ankle Society
38 (AOFAS) Ankle and Hindfoot scale, Foot and Ankle Ability Measure (FAAM) and a
39 subjective satisfaction rating. Results showed that fusion was achieved in 91% of the
40 patients after primary surgery. In six patients rearthrodesis was needed to obtain fusion.
41 The mean SF-36 score was 63 (SD, 22) for the physical component scale and 81 (SD, 15)
42 for the mental component scale. The mean FAAM score was 69 (SD, 17) and the mean

1 AOFAS Ankle Hindfoot score was 67 (SD, 12). Ninety-one percent were satisfied with
2 their clinical result. The authors concluded that ankle arthrodesis using a two-incision,
3 three-screw technique was a reliable and safe technique for the treatment of end-stage
4 osteoarthritis of the ankle. It resulted in a good functional outcome at a mean follow-up of
5 9 years.

6
7 Despite recent anatomical and biomechanical improvements, the longevity of current total
8 ankle replacements remains limited. Ankle fusion may be necessary following failure of
9 an ankle implant. Gross et al. (2015) carried out a systematic review of clinical outcomes
10 following a salvage ankle arthrodesis from a failed total ankle replacement (TAR) to
11 identify patient and technique specific prognostic factors and to determine the clinical
12 outcomes and complications following an ankle arthrodesis for a failed TAR. The analysis
13 included 16 studies (193 patients). The majority of patients (41%) underwent the index
14 TAR for rheumatoid arthritis. The majority of these revision surgeries were secondary to
15 component loosening, frequently of the talar component (38%). In the cases that were
16 revised to an ankle arthrodesis, 81% fused after their first arthrodesis procedure. The
17 intercalary bone graft group and the blade plate group had the highest rate of fusion after
18 the first attempt at fusion at 100%, whereas the tibiotalar fusion with cage group
19 had the lowest fusion rate at 50%. The overall complication rate was 18.2%, whereas the
20 overall nonunion rate was 10.6%. The authors concluded that a salvage ankle arthrodesis
21 for a failed TAR results in favorable clinical end points and overall satisfaction at short-
22 term follow-up if the patients achieve fusion. The bone graft fusion and blade plate group
23 resulted in the highest first-attempt fusion rate, with a low complication rate. Future studies
24 should include prospective, comparative control or surgical groups and use standardized
25 outcome measurements that will make direct comparisons easier.

26
27 Posttraumatic arthritis and prolonged recovery typically occur after a severely comminuted
28 tibial pilon fracture, and ankle arthrodesis is a common salvage procedure. Beaman et al.
29 (2014) conducted a retrospective study to evaluate the length of time required for a fracture
30 to heal after ankle arthrodesis and the arthrodesis to fuse when primary ankle arthrodesis
31 is a component of initial fracture management. During a 2-year period, the authors
32 performed open fracture reduction and internal fixation in 63 patients. Eleven patients (12
33 ankles) with severely comminuted high-energy tibial pilon fractures were retrospectively
34 reviewed after surgical treatment with primary ankle arthrodesis and fracture reduction.
35 Anatomically designed anterior ankle arthrodesis plates were used in 10 ankles. Ring
36 external fixation was used in nine ankles with concomitant tibia fracture or in instances
37 requiring additional fixation. The results showed that all of the ankle arthrodeses healed at
38 an average of 4.4 months. The average AOFAS ankle-hindfoot score was 83 with 88%
39 having an excellent or good result. No patients required revision surgery for malunion. The
40 authors concluded that primary ankle arthrodesis combined with fracture reduction for the
41 severely comminuted tibial pilon fracture reliably healed and restored acceptable function
42 in this highly selective patient group.

1 Although fusion of the ankle joint may relieve pain and restore function for some patients,
 2 contraindications do exist. Patients unable to be cleared for surgery secondary to medical
 3 issues, such as uncontrolled diabetes or poor nutritional status, should not be taken to
 4 surgery. Neurologic or vascular illness that decreases healing or recovery is also
 5 contraindicated. When considering ankle fusion with internal fixation, bone infection is
 6 also a contraindication, and other forms of fixation may be warranted, specifically external
 7 fixation (DeHeer et al., 2012).

9 PRACTITIONER SCOPE AND TRAINING

10 Practitioners should practice only in the areas in which they are competent based on their
 11 education, training and experience. Levels of education, experience, and proficiency may
 12 vary among individual practitioners. It is ethically and legally incumbent on a practitioner
 13 to determine where they have the knowledge and skills necessary to perform such services
 14 and whether the services are within their scope of practice.

16 It is best practice for the practitioner to appropriately render services to a member only if
 17 they are trained, equally skilled, and adequately competent to deliver a service compared
 18 to others trained to perform the same procedure. If the service would be most competently
 19 delivered by another health care practitioner who has more skill and training, it would be
 20 best practice to refer the member to the more expert practitioner.

22 Best practice can be defined as a clinical, scientific, or professional technique, method, or
 23 process that is typically evidence-based and consensus driven and is recognized by a
 24 majority of professionals in a particular field as more effective at delivering a particular
 25 outcome than any other practice (Joint Commission International Accreditation Standards
 26 for Hospitals, 2020).

28 Depending on the practitioner's scope of practice, training, and experience, a member's
 29 condition and/or symptoms during examination or the course of treatment may indicate the
 30 need for referral to another practitioner or even emergency care. In such cases it is prudent
 31 for the practitioner to refer the member for appropriate co-management (e.g., to their
 32 primary care physician) or if immediate emergency care is warranted, to contact 911 as
 33 appropriate. See the *Managing Medical Emergencies in a Health Care Facility (CPG 159*
 34 *– S)* clinical practice guideline for information.

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