Cohere Medicare Advantage Policy - Ankle Arthrodesis

Clinical Policy for Medical Necessity Review

Version: 3
Revision Date: June 26, 2025

Important Notices

Notices & Disclaimers:

GUIDELINES ARE SOLELY FOR COHERE'S USE IN PERFORMING MEDICAL NECESSITY REVIEWS AND ARE NOT INTENDED TO INFORM OR ALTER CLINICAL DECISION-MAKING OF END USERS.

Cohere Health, Inc. ("**Cohere**") has published these clinical guidelines to determine the medical necessity of services (the "**Guidelines**") for informational purposes only, and solely for use by Cohere's authorized "**End Users**". These Guidelines (and any attachments or linked third-party content) are not intended to be a substitute for medical advice, diagnosis, or treatment directed by an appropriately licensed healthcare professional. These Guidelines are not in any way intended to support clinical decision-making of any kind; their sole purpose and intended use is to summarize certain criteria Cohere may use when reviewing the medical necessity of any service requests submitted to Cohere by End Users. Always seek the advice of a qualified healthcare professional regarding any medical questions, treatment decisions, or other clinical guidance. The Guidelines, including any attachments or linked content, are subject to change at any time without notice. This policy may be superseded by existing and applicable Centers for Medicare & Medicaid Services (CMS) statutes.

Other Notices:

Policy Information:

Specialty Area: Musculoskeletal Care
Policy Name: Cohere Medical Advantage Policy - Ankle Arthrodesis
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

Table of Contents

Medical Necessity Criteria

Service: Ankle Arthrodesis

Related CMS Documents

Please refer to the CMS Medicare Coverage Database for the most current applicable CMS National Coverage.

- There are no applicable NCDs and/or LCDs for ankle arthrodesis.

Description

Ankle arthrodesis, also called ankle fusion, involves the durable bonding of the tibiotalar joint to relieve ankle pain and provide stable, functional alignment in the ankle joint complex. While ankle arthrodesis eliminates ankle joint motion, postsurgical improvements in pain and stability may increase overall function and well-being. The procedure can be performed arthroscopically or as an open procedure.[1-4] Open arthrodeses procedures may use transverse anterior, midline anterior, transfibular, medial, or posterior approaches, while arthroscopic procedures typically use anteromedial and anterolateral portals.

Medical Necessity Criteria

Indications

Ankle arthrodesis is considered appropriate if **ALL** of the following are **TRUE**:

- **ANY** of the following[5,6]:
  - Current nicotine user with no product use for 6 weeks; and **ANY** of the following:
    - Negative urine (cotinine) lab test within 30 days; **OR**
    - Surgery is urgently required due to documented reason; **OR**
  - No history of nicotine product use within the last 12 months; **OR**
  - No lifetime history of nicotine product use; **AND**
- The patient has **ANY** of the following:
  - Musculoskeletal congenital or acquired dysfunction[3,4]; **OR**

    - Increased osteoarthritis pain due to **ANY** of the following[7]:
        - Infection-related to septic (infectious) or reactive arthritis[8]; **OR**
        - Trauma[9,10]; **OR**
        - Chronic instability[11]; **OR**
        - Avascular necrosis of the talus (AVN)[12,13]; **OR**
        - Inflammatory arthropathy[14]; **OR**
        - Primary osteoarthritis[14]; **OR**
    - Neuropathic arthropathy[15]; **OR**
    - Lower extremity tumor resection[16,17]; **OR**
    - Failed ankle open reduction and internal fixation (ORIF)[18]; **OR**
    - Failed total ankle arthroplasty (TAA)[19,20]; **AND**
- Radiographic findings with radiologic report of congenital, acquired, or moderate to severe arthritis[4]; **AND**
- Failure of conservative management for greater than 3 months, including **ALL** of the following[7,21]:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy, including a physician-directed home exercise program; **AND**
    - **ANY** of the following:
        - Corticosteroid injection if medically appropriate; **OR**
        - Documentation that corticosteroid injection is contraindicated.

Non-Indications

Ankle arthrodesis is not considered appropriate if **ANY** of the following is **TRUE**:

- The patient has an active infection at the surgical site; **OR**
- The patient has poorly controlled diabetes as indicated by laboratory tests.[22,23]

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
27870	Arthrodesis, ankle, open
27871	Arthrodesis, tibiofibular joint, proximal or distal
28705	Arthrodesis; pantalar
29899	Arthroscopy, ankle (tibiotalar and fibulotalar joints), surgical; with ankle arthrodesis

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS' required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

The potential clinical harms of using these criteria for ankle arthrodesis may include:

- Adverse effects from delayed or denied treatment, such as decreased mobility and significant loss of function.[11] Ankle arthritis can place abnormal forces on joints around the ankle, causing progression of subtalar and mid-foot arthritis.
- Risks with inappropriate surgical procedures include post-surgical restricted motion, which may place increased stress on surrounding joints, leading to the development or worsening of osteoarthritis.[1,2] Herrera-Perez et al. report that subtalar and talonavicular osteoarthritis commonly develop after ankle arthrodesis.[21]

The clinical benefits of using these criteria for ankle arthrodesis may include:

- Improved patient selection, resulting in better long-term outcomes. Ankle arthritis is a debilitating condition that can severely limit mobility and impact quality of life. Surgical treatment, including ankle arthrodesis can relieve pain and restore mobility. Hendrickx et al. reviewed the medium to long-term outcomes of ankle arthrodesis at their institution.[9] Of the initial 121 ankle arthrodeses performed, 61 were available for follow-up. In this group, 91% achieved fusion, and 91% were satisfied with their results, reporting good functional outcomes.
- Reduction in complications and adverse effects from unnecessary procedures. Nogod et al. reviewed 102 ankle arthrodeses performed and noted a complication rate of 11.4%, with 75% of patients satisfied with their

outcome.[24] The most frequent complications were wound healing, infection, and nonunion requiring additional procedures. Diabetic and elderly patients had a higher rate of complications. Careful patient selection is essential.

Medical Evidence

In a randomized controlled trial, Goldberg et al. (2022) compared outcomes after ankle arthrodesis versus total ankle replacement (TAR) in 281 patients with end-stage ankle osteoarthritis.[7] Both groups of patients showed similar 52-week post-operative improvements in their primary outcome measure, the Manchester-Oxford Foot Questionnaire walking/standing score which assesses foot and ankle conditions. Both groups also showed improvements in pain and social interaction measures, sport subscale scores, and quality of life. However, patients who received a TAR showed greater improvement in activities of daily living and increased their range of motion compared to the decreased range of motion seen in arthrodesis patients. The authors also conducted subgroup analyses and found greater improvements in foot and ankle function after TAR in patients with adjacent joint arthritis. While the overall adverse event rate did not differ between groups, the types of adverse events patients were likely to experience differed between the two groups, with TAR patients more likely to report wound healing complications and nerve injuries while arthrodesis patients were more likely to report thrombolic events. Overall, this study demonstrated that both procedures have largely similar outcome profiles and that individual disease and patient characteristics and preferences should drive procedure selection.

There are several ankle arthrodesis techniques, with no single procedure considered universally superior for all patients.[21] While arthrodesis with internal fixation is minimally invasive, relatively simpler, and is associated with lower complication rates, internal fixation may not be appropriate for all patients, notably those with active infection, soft-tissue defects, bone loss, limb shortening, and joint defects.[26] Reinke et al. (2021) reported on outcomes of tibiocalcaneal arthrodesis using the Ilizarov external fixator in 19 patients with significant complicating factors, either acute or chronic infection and joint destruction, posttraumatic necrosis of the talus, or Charcot arthropathy.[27] Post-surgical complication rates were high, with all patients experiencing some infection at fixator pin site, though these were all treatable with local pin care or oral antibiotics. Major complications requiring surgical correction occurred in two patients. At follow-up, there were no signs of infection in any of the 7 patients with infectious destruction, 2 patients reported no limitations

in daily living activities, and 3 patients reported being able to walk more than 6 blocks. Two patients reported severe limitations in daily living activities. Of the 7 patients available for long-term follow-up, 1 reported no pain, 4 reported mild occasional pain, 2 reported moderate daily pain, and none reported severe pain. This study demonstrates that ankle arthrodesis can be used in medically selected complex cases that might otherwise resort to limb amputation.

In 2022 the American Orthopaedic Foot and Ankle Society (AOFAS) approved a position statement titled The Use of Total Ankle Replacement for the Treatment of Arthritic Conditions of the Ankle. While pain reduction is achieved with both ankle replacement and ankle arthrodesis, complication rates are higher following ankle replacement, including an increased likelihood of secondary surgical procedures. Compared to ankle arthrodesis, ankle arthroplasty shows “marked improvement in quality of life, pain, and function”. Patients undergoing ankle arthroplasty also report higher satisfaction with range of motion and gait compared to ankle arthrodesis patients. Additionally, AOFAS notes concerns that the restricted range of motion following arthrodesis may increase stress on surrounding joints which may lead to arthritic development or worsening of those joints.[2]

The American College of Foot and Ankle Surgeons (ACFAS) 2020 position statement titled Total Ankle Replacement Surgery similarly notes that while arthrodesis and total ankle replacement have largely similar safety and efficacy profiles, the limited range of motion after arthrodesis may contribute to the development or worsening of arthritis in adjacent joints. The ACFAS recommends ankle replacement over ankle arthrodesis due to better patient function, pain relief, and quality of life.[1]

References

1. American College of Foot and Ankle Surgeons (ACFAS). Position statement: Total ankle replacement surgery. Approved February 2020. https://www.acfas.org/policy-advocacy/policy-position-statements/acfas-position-statement-total-ankle-replacement-surgery

2. American Orthopaedic Foot and Ankle Society (AOFAS). Position statement: The use of total ankle replacement for the treatment of arthritic conditions of the ankle. Approved July 29, 2022. https://www.aofas.org/docs/default-source/research-and-policy/position-statements/total-ankle-replacement-position-statement.pdf?sfvrsn=9a9512c7_6

3. Zhuang T, El-Banna G, Frick S. Arthrodesis of the foot or ankle in adult patients with congenital clubfoot. *Cureus*. 2019;11(12):e6505. doi:10.7759/CUREUS.6505

4. DeHeer PA, Catoire SM, Taulman J, et al. Ankle arthrodesis: A literature review. *Clin Podiatr Med Surg*. 2012;29(4):509-527. doi:10.1016/J.CPM.2012.07.001

5. Jafar S, Garibaldi R, Seidel A, et al. Smoking-related complications in foot and ankle surgery: A systematic review. *Eur Rev Med Pharmacol Sci*. 2024;28(24):4691-4700. doi:10.26355/eurrev_202412_37003

6. Heyes G, Weigelt L, Molloy A, et al. The influence of smoking on foot and ankle surgery: A review of the literature. *Foot (Edinb)*. 2021;46:101735. doi:10.1016/j.foot.2020.101735

7. Goldberg AJ, Chowdhury K, Bordea E, et al. Total ankle replacement versus arthrodesis for end-stage ankle osteoarthritis: A randomized controlled trial. *Ann Intern Med*. 2022;175(12):1648-1657. doi:10.7326/M22-2058

8. Simoni G, Maccauro G, Fenga D, et al. Arthrodesis of the ankle joint in septic osteoarthritis: Six years long term outcomes in authors' personal

experience. *Eur Rev Med Pharmacol Sci*. 2019;23(2 Suppl):139-144. doi:10.26355/EURREV_201904_17483

9. Hendrickx RP, Stufkens SA, de Bruijn EE, et al. Medium- to long-term outcome of ankle arthrodesis. *Foot Ankle Int*. 2011;32(10):940-947. doi: 10.3113/FAI.2011.0940. PMID: 22224322

10. Berk TA, van Baal MCPM, Sturkenboom JM, et al. Functional outcomes and quality of life in patients with post-traumatic arthrosis undergoing open or arthroscopic talocrural arthrodesis—A retrospective cohort with prospective follow-up. *J Foot Ankle Surg*. 2022;61(3):609-614. doi:10.1053/J.JFAS.2021.10.022

11. Le V, Veljkovic A, Salat P, et al. Ankle arthritis. *Foot Ankle Orthop*. 2019;4(3):1-16. doi:10.1177/2473011419852931

12. Kendal AR, Cooke P, Sharp R. Arthroscopic ankle fusion for avascular necrosis of the talus. *Foot Ankle Int*. 2015;36(5):591-597. doi:10.1177/1071100714565901

13. Kubisa MJ, Kubisa MG, Pałka K, et al. Avascular necrosis of the talus: Diagnosis, treatment, and modern reconstructive options. *Medicina*. 2024;60(10):1692. doi:10.3390/MEDICINA60101692

14. Winson IG, Robinson DE, Allen PE. Arthroscopic ankle arthrodesis. *J Bone Joint Surg*. 2005;87(3):343-347. doi:10.1302/0301-620X.87B3.15756

15. Yammine K, Assi C. Intramedullary nail versus external fixator for ankle arthrodesis in Charcot neuroarthropathy: A meta-analysis of comparative studies. *J Orthop Surg*. 2019;27(2):1-7. doi:10.1177/2309499019836012

16. Zhao Z, Yan T, Tang X, et al. Novel “double-strut” fibula ankle arthrodesis for large tumor-related bone defect of distal tibia. *BMC Musculoskelet Disord*. 20:1-10. doi:10.1186/s12891-019-2742-6

17. Kokubu Y, Fujiwara T, Nakagawa K, et al. Postoperative clinical and functional outcomes in patients with tumor and tumor-like lesions of foot and ankle. *J Foot Ankle Res*. 2022;15(1):75. doi:10.1186/S13047-022-00582-Z

18. Levy CJ, Yatsonsky D, Moral MZ, et al. Arthrodesis or open reduction internal fixation for lisfranc injuries: A meta-analysis. *Foot Ankle Spec*. 2022;15(2):179-184. doi:10.1177/1938640020971419

19. Kamrad I, Henricson A, Magnusson H, et al. Outcome after salvage arthrodesis for failed total ankle replacement. *Foot Ankle Int*. 2016;37(3):255-261. doi:10.1177/1071100715617508

20. Berkowitz MJ, Clare MP, Walling AK, et al. Salvage of failed total ankle arthroplasty with fusion using structural allograft and internal fixation. *Foot Ankle Int*. 2011;32(5):S493-S502. doi: 10.3113/FAI.2011.0493. PMID: 21733457

21. Herrera-Pérez M, Valderrabano V, Godoy-Santos AL, et al. Ankle osteoarthritis: Comprehensive review and treatment algorithm proposal. *EFORT Open Rev*. 2022 Jul 5;7(7):448-459. doi: 10.1530/EOR-21-0117. PMID: 35900210; PMCID: PMC9297055

22. Shibuya N, Humphers JM, Fluhman BL, et al. Factors associated with nonunion, delayed union, and malunion in foot and ankle surgery in diabetic patients. *J Foot Ankle Surg*. 2013;52(2):207-211. doi:10.1053/j.jfas.2012.11.012

23. Humphers JM, Shibuya N, Fluhman BL, et al. The impact of glycosylated hemoglobin and diabetes mellitus on wound-healing complications and infection after foot and ankle surgery. *J Am Podiatr Med Assoc*. 2014;104(4):320-329. doi:10.7547/0003-0538-104.4.320

24. Nogod S, Khairy AMM Jr, Nubi OG, et al. Ankle arthrodesis: Indications, outcomes, and patient satisfaction. *Cureus*. 2023 Apr 5;15(4):e37177. doi: 10.7759/cureus.37177. PMID: 37034142; PMCID: PMC10076242

25. Salem KH, Kinzl L, Schmelz A. Ankle arthrodesis using Ilizarov ring fixators: A review of 22 cases. *Foot Ankle Int*. 2006;27(10):764-770. doi:10.1177/107110070602701002

26. Al-Naseem AO, Hayat J, Addar A, et al. External versus internal fixation techniques for ankle arthrodesis: A systematic review and

meta-analysis. *J Foot Ankle Surg*. 2024;63(6). doi:10.1053/J.JFAS.2024.05.010

27. Reinke C, Lotzien S, Yilmaz E, et al. Tibiocalcaneal arthrodesis using the Ilizarov fixator in compromised hosts: An analysis of 19 patients. *Arch Orthop Trauma Surg*. 2021;142(7):1359. doi:10.1007/S00402-021-03751-0

Clinical Guideline Revision History/Information

Original Date: May 31, 2024		
Review History		
Version 2	06/10/2024	422.101 Disclaimer added
Version 3	06/26/2025	Annual review. Added indication for smoking cessation. Added non-indication for poorly controlled diabetes. Updated references. Updated Medical Evidence section.