MEDICAL POLICY

POLICY TITLE	**MINIMALLY INVASIVE ABLATION PROCEDURES FOR MORTON AND OTHER PERIPHERAL NEUROMAS**
POLICY NUMBER	**MP 2.084**

CLINICAL BENEFIT	☐ MINIMIZE SAFETY RISK OR CONCERN. ☒ MINIMIZE HARMFUL OR INEFFECTIVE INTERVENTIONS. ☐ ASSURE APPROPRIATE LEVEL OF CARE. ☐ ASSURE APPROPRIATE DURATION OF SERVICE FOR INTERVENTIONS. ☐ ASSURE THAT RECOMMENDED MEDICAL PREREQUISITES HAVE BEEN MET. ☐ ASSURE APPROPRIATE SITE OF TREATMENT OR SERVICE.
Effective Date:	**3/1/2024**

I. POLICY

Minimally invasive ablation procedures, including intralesional alcohol injection, radiofrequency ablation (RFA), and cryoablation are considered **investigational** for treatment of Morton and other peripheral neuromas. There is insufficient evidence to support a general conclusion concerning the health outcomes or benefits associated with this procedure.

Cross-references:

MP- 2.034 Extracorporeal Shock Wave Treatment for Plantar Fasciitis and Other Musculoskeletal Conditions
MP- 2.376 Ablation of Peripheral Nerves to Treat Pain
MP- 5.049 Facet Joint Denervation

II. PRODUCT VARIATIONS

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This policy is only applicable to certain programs and products administered by Capital Blue Cross please see additional information below, and subject to benefit variations as discussed in Section VI below.

FEP PPO:

FEP PPO - Refer to FEP Medical Policy Manual. The FEP Medical Policy manual can be found at: https://www.fepblue.org/benefit-plans/medical-policies-and-utilization-management-guidelines/medical-policies .

III. DESCRIPTION/BACKGROUND

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Neuroma

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A neuroma is pathology of peripheral nerve that develops as part of a normal reparative process. Neuromas may develop after injury to a nerve or as a result of chronic irritation, pressure, stretch, poor repair of nerve lesions or previous neuromas, laceration, crush injury, or blunt trauma. Neuromas typically appear about 6 to 10 weeks after trauma, with most presenting within 1 to 12 months after injury or surgery. They may gradually enlarge over a period of 2 to 3 years and may or may not be painful. Pain from a neuroma may be secondary to traction on the nerve by scar tissue, compression of the sensitive nerve endings by adjacent soft tissues, ischemia of the nervous tissue, or ectopic foci of ion channels that elicit neuropathic pain. Patients may describe the pain as a low intensity dull pain, or intense paroxysmal burning pain, often triggered by external stimuli such as touch or temperature. Neuroma formation has been implicated as a contributor of neuropathic pain in residual limb pain, postthoracotomy, postmastectomy, and postherniorrhaphy pain syndromes. They may coexist with phantom pain or can predispose to it.

Morton Neuroma

Morton intermetatarsal neuroma is a common and painful compression neuropathy of the common digital nerve of the foot that may be referred to by other names, including interdigital neuroma, interdigital neuritis, and interdigital or Morton metatarsalgia. It is histologically characterized by perineural fibrosis, endoneurial edema, axonal degeneration, and local vascular proliferation. Thus, some investigators do not consider Morton neuroma to be a true neuroma; instead they consider it to be an entrapment neuropathy that occurs secondary to compression of the common digital nerve under the overlying transverse metatarsal ligament. Morton neuroma appears 10-fold more often in women than in men, with an average age at presentation of around 50 years.

The pain associated with Morton neuroma is usually throbbing, burning, or shooting, and localized to the plantar aspect of the foot. It is typically located between the 3rd and 4th metatarsal heads, although it may appear in other proximal locations.[1,2,] The pain may radiate to the toes and can be associated with paresthesia. The pain can be severe, and the condition may become debilitating to the extent that patients are apprehensive about walking or touching their foot to the ground. It is aggravated by walking in shoes with a narrow toe box or high heels that cause excessive pronation and excessive forefoot pressure; removal of tight shoes typically relieves the pain.

Diagnosis of Morton Neuroma

Although a host of imaging methods are used to diagnosis Morton neuroma, including plain radiographs, magnetic resonance imaging, and ultrasonography, objective findings are unique to this condition and are primarily used to establish a clinical diagnosis. Thus, a patient's toes often show splaying or divergence. Patients may describe the feeling of a "lump" on the foot bottom or a feeling of walking on a rolled-up or wrinkled sock. Clinical examination with medial and lateral compression may reproduce the painful symptoms with a palpable "click" on interspace compression (Mulder sign).

Treatment of Morton Neuroma

Management of patients diagnosed with Morton neuroma typically starts with conservative approaches, such as the use of metatarsal pads in shoes and orthotic devices that alter supination and pronation of the affected foot. These approaches try to reduce pressure and irritation of the affected nerve. They may provide relief, but do not alter the underlying pathology. There is scant evidence to support the effectiveness or comparative effectiveness of these practices. In one case series (1995), investigators evaluated a 3-stage protocol of "stepped care" through which private practice patients (N=115) advanced from stage I (education plus footwear modifications, and a metatarsal pad) to stage II (steroid injections with local anesthetic or local anesthetic alone), and into stage III (surgical resection) if stages I and II were not relieved within 3 months. Overall, 97 (85%) of 115 patients believed that pain had been reduced with the treatment program. However, 24 (21%) patients eventually required surgical excision of the nerve, and 23 (96%) of them had satisfactory results.

Minimally Invasive Ablation Techniques

Several minimally invasive procedures to treat refractory Morton neuroma and other peripheral neuromas are aimed at in situ destruction of the pathology: radiofrequency ablation (RFA) and cryoablation (also known as cryoneurolysis, cryolysis, cryoanalgesia). RFA uses heat generated by an electrode that conducts electromagnetic energy into a tissue or lesion to denature proteins and destroy cells. RFA is used to ablate a wide range of tissues or lesions, including osteoid osteoma; cardiovascular system pathologies; cervical pain syndromes; liver, lung, and other cancers; and varicosities. Cryoablation uses a coolant to chill a cryoprobe to temperatures below -75°C, which when inserted into a lesion, freezes and kills the tissue. It has been used to treat Morton neuroma, other chronic nerve pain syndromes, and conditions for which RFA has been used.

This review primarily focuses on evidence for the use of RFA and cryoablation on painful neuromas, with emphasis on Morton neuroma and the comparative effectiveness of these less invasive therapies with open surgical resection of the nerve pathology.

Regulatory Status

Although radiofrequency ablation probes and generators and cryoablation equipment have been cleared for marketing by the U.S. Food and Drug Administration through the 510(k) process, none appear to be specifically indicated for treatment of Morton neuroma or any other specific peripheral neuroma.

IV. RATIONALE

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Summary of Evidence

For individuals who have Morton neuroma who receive intralesional alcohol injection(s), the evidence includes retrospective case series. Relevant outcomes are symptoms, functional outcomes, and treatment-related morbidity. The body of evidence is limited, consisting of case series reporting on the treatment response of patients with refractory Morton neuroma. The

available series have generally reported that some patients experience pain relief and express satisfaction with the procedure. Some evidence has suggested that surgery after failed cases of alcohol injections is more complex and challenging than in untreated patients due to the presence of fibrosis. There is a lack of controlled trials comparing alcohol injections with alternative therapies, and there are no controlled studies comparing outcomes for alcohol injections with those for surgery in surgical candidates. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have Morton neuroma who receive radiofrequency ablation (RFA), the evidence includes case series. Relevant outcomes are symptoms, functional outcomes, and treatment-related morbidity. Three case series identified reported outcomes for RFA to treat Morton neuroma. The body of evidence is highly heterogeneous regarding RFA protocols, prior conservative management, patient characteristics, follow-up durations, outcome measures, and reporting of outcomes. Variable proportions of patients require surgery after RFA, making the benefit of RFA for avoiding more invasive treatment uncertain. The evidence is insufficient to determine the effects of the technology on health outcome.

For individuals who have Morton neuroma who receive cryoablation, the evidence includes case series. Relevant outcomes are symptoms, functional outcomes, and treatment-related morbidity. Only two retrospective case series on the use of cryoablation to treat peripheral nerve pain were identified in our literature review. The case series were heterogeneous regarding cryoablation protocols and length of follow-up. Outcome measures did not provide information on functional end points. The evidence is insufficient to determine the effects of the technology on health outcome.

For individuals who have peripheral neuroma(s) other than Morton neuroma who receive ablation, the evidence is very limited: no published literature was identified. Relevant outcomes are symptoms, functional outcomes, and treatment-related morbidity. The evidence is insufficient to determine the effects of the technology on health outcome.

V. DEFINITIONS

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NEUROMA is the formal term for any type of tumor comprised of nerve cells. Classification is made with respect to the specific portion of the nerve involved. For example, ganglionated neuroma is a neuroma composed of true nerve cells.

VI. BENEFIT VARIATIONS

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The existence of this medical policy does not mean that this service is a covered benefit under the member's health benefit plan. Benefit determinations should be based in all cases on the applicable health benefit plan language. Medical policies do not constitute a description of benefits. A member's health benefit plan governs which services are covered, which are excluded, which are subject to benefit limits and which require preauthorization. There are different benefit plan designs in each product administered by Capital Blue Cross. Members

and providers should consult the member's health benefit plan for information or contact Capital Blue Cross for benefit information.

VII. DISCLAIMER

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Capital Blue Cross's medical policies are developed to assist in administering a member's benefits, do not constitute medical advice and are subject to change. Treating providers are solely responsible for medical advice and treatment of members. Members should discuss any medical policy related to their coverage or condition with their provider and consult their benefit information to determine if the service is covered. If there is a discrepancy between this medical policy and a member's benefit information, the benefit information will govern. If a provider or a member has a question concerning the application of this medical policy to a specific member's plan of benefits, please contact Capital Blue Cross' Provider Services or Member Services. Capital Blue Cross considers the information contained in this medical policy to be proprietary and it may only be disseminated as permitted by law.

VIII. CODING INFORMATION

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Note: This list of codes may not be all-inclusive, and codes are subject to change at any time. The identification of a code in this section does not denote coverage as coverage is determined by the terms of member benefit information. In addition, not all covered services are eligible for separate reimbursement.

Minimally invasive ablation procedures, radiofrequency ablation (RFA), and cryoablation, are considered investigational for treatment of peripheral neuromas; therefore, not covered:

Procedure Codes							
64624	64632	64640	0440T	0441T			

IX. REFERENCES

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1. *Rajput K, Reddy S, Shankar H. Painful neuromas. Clin J Pain. Sep 2012; 28(7): 639-45. PMID 22699131*
2. *Jain S, Mannan K. The diagnosis and management of Morton's neuroma: a literature review. Foot Ankle Spec. Aug 2013; 6(4): 307-17. PMID 23811947*
3. *Thomas JL, Blitch EL, Chaney DM, et al. Diagnosis and treatment of forefoot disorders. Section 3. Morton's intermetatarsal neuroma. J Foot Ankle Surg. 2009; 48(2): 251-6. PMID 19232980*
4. *Wu KK. Morton's interdigital neuroma: a clinical review of its etiology, treatment, and results. J Foot Ankle Surg. 1996; 35(2): 112-9; discussion 187-8. PMID 8722878*
5. *MULDER JD. The causative mechanism in morton's metatarsalgia. J Bone Joint Surg Br. Feb 1951; 33-B(1): 94-5. PMID 14814167*
6. *Adams WR. Morton's neuroma. Clin Podiatr Med Surg. Oct 2010; 27(4): 535-45. PMID 20934103*

7. *Thomson CE, Gibson JN, Martin D. Interventions for the treatment of Morton's neuroma. Cochrane Database Syst Rev. 2004; 2004(3): CD003118. PMID 15266472*
8. *Bennett GL, Graham CE, Mauldin DM. Morton's interdigital neuroma: a comprehensive treatment protocol. Foot Ankle Int. Dec 1995; 16(12): 760-3. PMID 8749346*
9. *Dierselhuis EF, van den Eerden PJ, Hoekstra HJ, et al. Radiofrequency ablation in the treatment of cartilaginous lesions in the long bones: results of a pilot study. Bone Joint J. Nov 2014; 96-B(11): 1540-5. PMID 25371471*
10. *Boersma D, van Eekeren RR, Kelder HJ, et al. Mechanochemical endovenous ablation versus radiofrequency ablation in the treatment of primary small saphenous vein insufficiency (MESSI trial): study protocol for a randomized controlled trial. Trials. Oct 29 2014; 15: 421. PMID 25354769*
11. *Di Costanzo GG, Tortora R, D'Adamo G, et al. Radiofrequency ablation versus laser ablation for the treatment of small hepatocellular carcinoma in cirrhosis: a randomized trial. J Gastroenterol Hepatol. Mar 2015; 30(3): 559-65. PMID 25251043*
12. *Anchala PR, Irving WD, Hillen TJ, et al. Treatment of metastatic spinal lesions with a navigational bipolar radiofrequency ablation device: a multicenter retrospective study. Pain Physician. 2014; 17(4): 317-27. PMID 25054391*
13. *Hillen TJ, Anchala P, Friedman MV, et al. Treatment of metastatic posterior vertebral body osseous tumors by using a targeted bipolar radiofrequency ablation device: technical note. Radiology. Oct 2014; 273(1): 261-7. PMID 24927327*
14. *Wang X, Wang X, Song Y, et al. Efficiency of radiofrequency ablation for surgical treatment of chronic atrial fibrillation in rheumatic valvular disease. Int J Cardiol. Jul 01 2014; 174(3): 497-502. PMID 24820759*
15. *Huang WZ, Wu YM, Ye HY, et al. Comparison of the outcomes of monopolar and bipolar radiofrequency ablation in surgical treatment of atrial fibrillation. Chin Med Sci J. Mar 2014; 29(1): 28-32. PMID 24698675*
16. *Avery J, Kumar K, Thakur V, et al. Radiofrequency ablation as first-line treatment of varicose veins. Am Surg. Mar 2014; 80(3): 231-5. PMID 24666862*
17. *Hiraki T, Gobara H, Iguchi T, et al. Radiofrequency ablation as treatment for pulmonary metastasis of colorectal cancer. World J Gastroenterol. Jan 28 2014; 20(4): 988-96. PMID 24574771*
18. *Morillo CA, Verma A, Connolly SJ, et al. Radiofrequency ablation vs antiarrhythmic drugs as first-line treatment of paroxysmal atrial fibrillation (RAAFT-2): a randomized trial. JAMA. Feb 19 2014; 311(7): 692-700. PMID 24549549*
19. *Fuller CW, Nguyen SA, Lohia S, et al. Radiofrequency ablation for treatment of benign thyroid nodules: systematic review. Laryngoscope. Jan 2014; 124(1): 346-53. PMID 24122763*
20. *Huang XM, Hu JQ, Li ZF, et al. Symptomatic sinus tachycardia with perpetuating slow pathway: successful treatment with radiofrequency ablation. Pacing Clin Electrophysiol. Oct 2014; 37(10): e1-4. PMID 21077914*
21. *Prologo JD, Passalacqua M, Patel I, et al. Image-guided cryoablation for the treatment of painful musculoskeletal metastatic disease: a single-center experience. Skeletal Radiol. Nov 2014; 43(11): 1551-9. PMID 24972918*

22. *Kim EH, Tanagho YS, Saad NE, et al. Comparison of laparoscopic and percutaneous cryoablation for treatment of renal masses. Urology. May 2014; 83(5): 1081-7. PMID 24560975*
23. *Durand M, Barret E, Galiano M, et al. Focal cryoablation: a treatment option for unilateral low-risk prostate cancer. BJU Int. Jan 2014; 113(1): 56-64. PMID 24053685*
24. *Duarte R, Pereira T, Pinto P, et al. [Percutaneous Image-guided cryoablation for localized bone plasmacytoma treatment]. Radiologia. 2014; 56(5): e1-4. PMID 22621822*
25. *Rodriguez-Entem FJ, Expósito V, Gonzalez-Enriquez S, et al. Cryoablation versus radiofrequency ablation for the treatment of atrioventricular nodal reentrant tachycardia: results of a prospective randomized study. J Interv Card Electrophysiol. Jan 2013; 36(1): 41-5; discussion 45. PMID 23080326*
26. *Yamauchi Y, Izumi Y, Hashimoto K, et al. Percutaneous cryoablation for the treatment of medically inoperable stage I non-small cell lung cancer. PLoS One. 2012; 7(3): e33223. PMID 22413004*
27. *Collins KK, Schaffer MS. Use of cryoablation for treatment of tachyarrhythmias in 2010: survey of current practices of pediatric electrophysiologists. Pacing Clin Electrophysiol. Mar 2011; 34(3): 304-8. PMID 21077912*
28. *Kaufman CS, Bachman B, Littrup PJ, et al. Cryoablation treatment of benign breast lesions with 12-month follow-up. Am J Surg. Oct 2004; 188(4): 340-8. PMID 15474424*
29. *Pasquali C, Vulcano E, Novario R, et al. Ultrasound-guided alcohol injection for Morton's neuroma. Foot Ankle Int. Jan 2015; 36(1): 55-9. PMID 25367249*
30. *Perini L, Perini C, Tagliapietra M, et al. Percutaneous alcohol injection under sonographic guidance in Morton's neuroma: follow-up in 220 treated lesions. Radiol Med. Jul 2016; 121(7): 597-604. PMID 26883232*
31. *Musson RE, Sawhney JS, Lamb L, et al. Ultrasound guided alcohol ablation of Morton's neuroma. Foot Ankle Int. Mar 2012; 33(3): 196-201. PMID 22734280*
32. *Hughes RJ, Ali K, Jones H, et al. Treatment of Morton's neuroma with alcohol injection under sonographic guidance: follow-up of 101 cases. AJR Am J Roentgenol. Jun 2007; 188(6): 1535-9. PMID 17515373*
33. *Fanucci E, Masala S, Fabiano S, et al. Treatment of intermetatarsal Morton's neuroma with alcohol injection under US guide: 10-month follow-up. Eur Radiol. Mar 2004; 14(3): 514-8. PMID 14531002*
34. *Morgan P, Monaghan W, Richards S. A systematic review of ultrasound-guided and non-ultrasound-guided therapeutic injections to treat Morton's neuroma. J Am Podiatr Med Assoc. Jul 2014; 104(4): 337-48. PMID 25076076*
35. *Dockery GL. The treatment of intermetatarsal neuromas with 4% alcohol sclerosing injections. J Foot Ankle Surg. 1999; 38(6): 403-8. PMID 10614611*
36. *Genon MP, Chin TY, Bedi HS, et al. Radio-frequency ablation for the treatment of Morton's neuroma. ANZ J Surg. Sep 2010; 80(9): 583-5. PMID 20857612*
37. *Moore JL, Rosen R, Cohen J, et al. Radiofrequency thermoneurolysis for the treatment of Morton's neuroma. J Foot Ankle Surg. 2012; 51(1): 20-2. PMID 22055491*

38. *Chuter GS, Chua YP, Connell DA, et al. Ultrasound-guided radiofrequency ablation in the management of interdigital (Morton's) neuroma. Skeletal Radiol. Jan 2013; 42(1): 107-11. PMID 23073898*
39. *Connors JC, Boike AM, Rao N, et al. Radiofrequency Ablation for the Treatment of Painful Neuroma. J Foot Ankle Surg. 2020; 59(3): 457-461. PMID 32354501*
40. *Friedman T, Richman D, Adler R. Sonographically guided cryoneurolysis: preliminary experience and clinical outcomes. J Ultrasound Med. Dec 2012; 31(12): 2025-34. PMID 23197557*
41. *Cazzato RL, Garnon J, Ramamurthy N, et al. Percutaneous MR-Guided Cryoablation of Morton's Neuroma: Rationale and Technical Details After the First 20 Patients. Cardiovasc Intervent Radiol. Oct 2016; 39(10): 1491-8. PMID 27189181*
42. *The Association of Extremity Nerve Surgeons Clinical Practice Guidelines v. 2.0. 2020*
43. *Blue Cross Blue Shield Association Medical Policy Reference Manual. 7.01.147, Ablation Procedures for Peripheral Neuromas July 2023.*

X. POLICY HISTORY

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MP-2.084	**6/18/2021 Consensus review.** No change to policy statement. References updated. Coding reviewed.
	10/18/2022 Minor review. Updated title and policy statement to include Morton neuroma. Policy statement update to also include alcohol injections. Coding Reviewed. References updated.
	8/11/2023 Consensus review. Updated references. Added procedure code 0440T.
	1/19/2024 Administrative update. Clinical benefit added.

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