

## Medical Policy

### Basivertebral Nerve Ablation

**Policy Number:** 076

	Commercial and Qualified Health Plans	MassHealth	Medicare Advantage
Authorization Required	X		X
No Prior Authorization			
Not covered		X	

#### Overview

This document describes the guidelines Mass General Brigham Health Plan utilizes to determine medical necessity for intraosseous basivertebral nerve ablation (BVNA) for chronic lower back pain.

#### Coverage Guidelines

Mass General Brigham Health Plan considers BVNA at levels L3 to S1 **medically necessary** for the treatment of chronic lower back pain of vertebrogenic origin when ALL of the following criteria are met:

- Member is 25 years of age or older;
- Chronic lower back pain has persisted for at least six months;
- Pain has failed to adequately improve despite six months of non-operative management, including:
  - At least 4 weeks of physical therapy, and
  - At least 4 weeks of acetaminophen and/or NSAIDs, and
  - Activity and/or lifestyle modification.
- MRI evidence of Modic Type 1 or Type 2 changes involving the endplates between L3 and S1.
- If disc extrusion or protrusion >5mm is present in the lumbar spine, epidural steroid injection has been performed within the past 2 years and resulted in <50% symptom improvement
- If facet arthrosis/effusion is present, and pain increases with facet loading maneuvers, then 2 diagnostic facet joint injections or medial nerve blocks have been performed within the past 2 years and resulted in <50% symptom improvement

#### Exclusions

Mass General Brigham Health Plan considers BVNA **experimental and investigational** when any of the following conditions is present:

- Radicular pain,
- Previous lumbar spine surgery,
- Symptomatic spinal stenosis,
- Spine infection or other active systemic infection,
- Osteoporosis, metabolic bone disease, or history of spine fragility fracture
- Vertebral fracture within the past year,
- Malignancy of the spine,
- Spondylolisthesis >2 mm,
- Spondylolysis at any level,
- Severe cardiac or pulmonary disease,
- BMI >40,

- Poorly controlled major psychiatric disease that is suspected to be a major contributor to back pain,
- Bedbound or a neurologic condition that prevents early mobility,
- Pregnancy
- Treatment of vertebrae above L3 or below S1
- Repeat BVNA on a vertebra that has previously been treated with BVNA

Additionally, BVNA is considered **experimental and investigational** when performed concurrently with other procedures, including steroid injections, nerve blocks, ablation of other nerves, and surgeries.

### Medicare Variation

Mass General Brigham Health Plan uses guidance from the Centers for Medicare and Medicaid Services (CMS) for coverage determinations for its Medicare Advantage plan members. National Coverage Determinations (NCDs), Local Coverage Determinations (LCDs), Local Coverage Articles (LCAs) and documentation included in the Medicare manuals are the basis for coverage determinations. When there is no guidance from CMS for the requested service, Mass General Brigham Health Plan's medical policies are used for coverage determinations.

At the time of Mass General Brigham Health Plan's most recent policy review, CMS includes the following coverage guidelines:

- [LCD: Intraosseous Basivertebral Nerve Ablation \(L39642\)](#)
- [LCD: Intraosseous Basivertebral Nerve Ablation \(L39644\)](#)
- [LCD: Thermal Destruction of the Intraosseous Basivertebral Nerve \(BVN\) for Vertebrogenic Lower Back Pain \(L39420\)](#)

When NCDs are not available, and LCDs are not available for the states in which Mass General Brigham Health Plan members seek care, Mass General Brigham Health Plan applies additional coverage criteria to clarify medical necessity of the requested service. Mass General Brigham Health Plan coverage criteria align with the latest clinical evidence and accepted standards of practice, without contradicting existing determinations, and enhance the clarity of medical necessity criteria, documentation requirements, and clinical indications. For members who do not seek care in the states covered by the LCDs above, Mass General Brigham Health Plan uses the criteria described in this policy to review requests for BVNA.

### Codes

The following codes are included below for informational purposes only; inclusion of a code does not constitute or imply coverage.

Authorized CPT/HCPCS Codes	Code Description
64628	Thermal destruction of intraosseous basivertebral nerve, including all imaging guidance; first two vertebral bodies, lumbar or sacral.
64629	Thermal destruction of intraosseous basivertebral nerve, including all imaging guidance; each additional vertebral body, lumbar or sacral (list separately in addition to code for primary procedure).

### Summary of Evidence

Intraosseous basivertebral nerve (BVN) ablation has emerged as a promising treatment for vertebrogenic chronic low back pain (CLBP). Fischgrund et al. (2018) conducted a prospective, randomized, double-blind, sham-controlled multicenter study demonstrating significant reductions in pain and improvements in function compared to sham procedures. Similarly, Khalil et al. (2019) confirmed these findings in a multicenter



randomized study, highlighting sustained pain relief and functional improvements in patients unresponsive to conservative therapies. Koreckij et al. (2021) reported 24-month results, affirming the long-term efficacy and safety of BVN ablation. They reported sustained pain relief, improved physical function, and minimal complications, underscoring the durability of the procedure's benefits. Marcus et al. (2024) explored the use of BVN ablation in conjunction with lumbar laminotomy, showcasing its potential for complex cases requiring multimodal interventions. This case report highlights its utility in achieving pain relief while addressing concurrent spinal pathologies.

Sayed et al. (2022) published best practice guidelines from the American Society of Pain and Neuroscience (ASPN) for diagnosing and treating vertebrogenic pain using BVN ablation. These guidelines emphasize patient selection criteria, procedural techniques, and evidence-based approaches to optimize outcomes. Additionally, ASPN's broader evidence-based guidelines on interventional treatments for low back pain (Sayed et al., 2022) position BVN ablation as a key modality for managing vertebrogenic pain.

Intraosseous BVN ablation offers a minimally invasive, effective solution for chronic low back pain associated with vertebrogenic pathology. Robust evidence from clinical trials and long-term studies supports its efficacy and safety, while emerging guidelines provide a structured framework for its clinical application. The procedure represents a critical advancement in the interventional management of CLBP, with ongoing research expanding its potential applications. MGB Health Plan considers BVN ablation to be medically necessary for the treatment of chronic vertebrogenic pain who meet criteria based on those described in ASPN guidelines.

### **Effective**

March 2025: Ad hoc review. Added summary of evidence.

September 2024: Ad hoc review. Added prior authorization requirements to Medicare Advantage coverage.

July 2024: Effective Date.

### **References**

Fischgrund JS, Rhyne A, Frake J, et al. Intraosseous basivertebral nerve ablation for the treatment of chronic low back pain: a prospective randomized double-blind sham-controlled multi-center study. *Eur Spine J*. 2018;27(5):1146-56. <https://doi.org/10.1007/s00586-018-5496-1>.

Khalil JG, Smuck M, Koreckij T, et al. A prospective, randomized, multicenter study of intraosseous basivertebral nerve ablation for the treatment of chronic lower back pain. *Spine J*. 2019 Oct;19(10):1620-1632. <https://doi.org/10.1016/j.spinee.2019.05.598>.

Koreckij T, Kreiner S, Khalil JG, et al. Prospective, randomized, multicenter study of intraosseous basivertebral nerve ablation for the treatment of chronic low back pain: 24-month treatment arm results. *N Am Spine Soc J*. 2021 Oct 26;8:100089. <https://doi.org/10.1016/j.xnsj.2021.100089>.

Marcus JL, Westerhaus BD, Chernicki B, et al. Basivertebral nerve ablation with concurrent lumbar laminotomy. *BMJ Case Reports CP*. 2024;17:e259695.

Sayed D, Naidu RK, Patel KV, et al. Best practice guidelines on the diagnosis and treatment of vertebrogenic pain with basivertebral nerve ablation from the American Society of Pain and Neuroscience. *Journal of Pain Research*. 2022;15:2801–2819 <https://doi.org/10.2147/JPR.S378544>.

Sayed D, Grindler J, Strand N, et al. The American Society of Pain and Neuroscience (ASPN) evidence-based clinical guideline of interventional treatments for low back pain. *Journal of Pain Research*. 2022;15:3729-3832. DOI: 10.2147/JPR.S386879.

