MEDICAL POLICY

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Medical Policy Title	**Intraosseous Basivertebral Nerve Ablation for Child Health Plus (CHP), and Essential Plan (EP) Members**
Policy Number	**7.01.124**
Current Effective Date	**January 1, 2027**
Next Review Date	**September 2027**

Our medical policies are guides to evaluate technologies or services for medical necessity. Criteria are established through the assessment of evidence based, peer-reviewed scientific literature, and national professional guidelines. Federal and state law(s), regulatory mandates and the member's subscriber contract language are considered first in the determination of a covered service.
(Link to Product Disclaimer)

POLICY STATEMENT(S)

I. Thermal ablation of the intraosseous basivertebral nerve (BVN) is considered **medically appropriate** when **ALL** the following are met:

A. Individual is 18 years of age or older;

B. Pain meets **all** the following:

1. The predominant symptom is axial low back pain;
2. Pain causes functional impairment (e.g., reduced mobility, activities of daily living);
3. A minimum of 6 months of low back pain; **and**
4. Documented clinical findings support a vertebrogenic etiology (e.g., deep midline pain aggravated by bending, prolonged standing, or sitting);

C. Modic Type 1 and/or Type 2 endplate changes at a minimum of one (1) vertebral level from L3 to S1, documented on magnetic resonance imaging (MRI) within the previous 12 months;

D. A minimum of 6 months of non-surgical conservative treatment failed to improve pain, or was not tolerated, and includes **both** of the following:

1. Non-pharmacologic management includes **any** of the following:
   a. Acupuncture;
   b. Chiropractic treatment;
   c. Cognitive behavioral therapy; **or**
   d. Supervised physical therapy (PT); **and**
2. Pharmacologic/interventional management includes **any** of the following:
   a. Interventional pain management with epidural steroid injections (ESI) or facet-based interventions;
   b. Nonsteroidal anti-inflammatory drugs (NSAIDs); **or**

c. Oral analgesic therapy;

E. The procedure will be performed using fluoroscopic or computed tomography (CT) guidance.

II. Thermal ablation of the intraosseous basivertebral nerve (BVN) is contraindicated and **not medically necessary** for **ANY** of the following:

A. Active infection, local or systemic;

B. Bleeding or clotting disorder;

C. Osteoporosis (T-score ≤ -2.5);

D. Spinal malignancy;

E. Trauma/compression fracture involving the intended treatment level;

F. Vertebral fragility fracture;

G. History of basivertebral nerve ablation at the requested vertebral level;

H. History of spinal surgery at the requested vertebral level;

I. Imaging evidence (MRI, CT, X-ray) identifies an alternative cause of low back pain symptoms (e.g., degenerative scoliosis, disc herniation, lumbar stenosis, spondylolisthesis);

J. Implanted pulse generators or other electronic implants (e.g., pacemaker, defibrillator, neurostimulator);

K. Modic Type 3 (sclerotic) endplate changes;

L. Pregnancy;

M. Primary symptoms include **any** of the following:

1. lumbar radiculopathy;
2. nerve compression/impingement (e.g., stenosis, herniated nucleus pulposus [HNP]);
3. neurogenic claudication; **or**
4. radicular pain;

N. Severe cardiac or pulmonary impairment;

O. Skeletal immaturity (younger than 18 years of age).

RELATED POLICIES

Corporate Medical Policy

7.01.122 Interventional Pain Management for Managed Medicaid (MMC), Health and Recovery Plan (HARP), Child Health Plus (CHP), and Essential Plan (EP) Members

POLICY GUIDELINE(S)

Not Applicable

DESCRIPTION

Intraosseous basivertebral nerve ablation (BVNA) is a minimally invasive, image-guided (fluoroscopic or CT) procedure that uses radiofrequency energy to thermally ablate the basivertebral nerve (BVN) within the vertebral body for the treatment of chronic vertebrogenic low back pain. A radiofrequency probe is advanced percutaneously into the vertebral body to thermally ablate the basivertebral nerve, interrupting transmission of vertebral endplate pain signals, with a goal of providing durable reduction in pain and improvement in function.

Vertebrogenic pain is a subtype of chronic axial low back pain that arises from damaged vertebral endplates and is transmitted through the BVN. Clinical presentation is typically characterized by persistent deep midline low back pain that may be aggravated by bending, prolonged sitting, prolonged standing, or physical activity. Vertebrogenic pain is commonly associated with Modic type 1 and/or type 2 endplate changes identified on MRI and is distinguished from alternative pain generators such as lumbar radiculopathy, neurogenic claudication, facet-mediated pain, and sacroiliac joint dysfunction.

BVNA is generally used in skeletally mature individuals with chronic vertebrogenic low back pain who have not adequately improved with nonsurgical conservative management and who demonstrate Modic type 1 and/or type 2 endplate changes at one or more vertebral levels from L3 through S1 on MRI.

Modic changes are MRI signal abnormalities involving the vertebral endplates and adjacent bone marrow that are associated with spinal degeneration.

- Type I: Reflects marrow edema and inflammation.
- Type II: Fatty replacement of bone marrow.
- Type III: Subchondral bony sclerosis.

Neurogenic claudication is the symptom pattern typically associated with lumbar spinal stenosis in which lower-extremity, buttock, or back pain, numbness, weakness, or paresthesias are brought on by standing or walking and relieved by sitting or spinal flexion, often termed pseudoclaudication.

Radicular pain is pain that radiates from the spine into an upper or lower extremity in a dermatomal distribution due to irritation, inflammation, or compression of a spinal nerve root and may be accompanied by numbness, tingling, or weakness.

SUPPORTIVE LITERATURE

The SMART trial (Fischgrund et al 2018) was a randomized, double-blind, sham controlled study of BVNA using the Intracept system in 225 participants with ≥6 months of chronic isolated lumbar pain, Oswestry Disability Index (ODI) ≥30, Visual Analog Scale (VAS) ≥4, and Modic type 1 or 2 endplate changes at treated levels (2–3 consecutive levels, L3–S1). Treatment (n=147) versus sham (n=78), with sham crossover permitted at 12 months (73% crossed over). The primary endpoint, ODI change

at 3 months (intent-to-treat), showed no significant between-group difference. A per-protocol difference at 3 months (20.5 vs. 15.2 points; p=.019) was no longer significant at 12 months. VAS favored treatment at 6 and 12 months but not at 3 months (p=.083). The authors concluded that BVNA is a minimally invasive, durable, safe treatment that significantly improves pain and function in patients with chronic vertebrogenic low back pain associated with Modic type 1 or 2 endplate changes.

In the SMART trial long-term follow-up at 24 months (Fischgrund 2019) included 106 (83%) of the treated per-protocol group and demonstrated a durable ODI mean improvement of 23.4 points. At 5 years (Fischgrund 2020), mean ODI improved 25.9 points (42.8 to 16.9) and mean VAS improved 4.4 points (p<.001). Long-term comparative data are unavailable because of high sham crossover. The authors concluded that the clinical improvements in pain and function following BVNA are durable and sustained through 5 years, supporting BVNA as an effective, lasting treatment for vertebrogenic chronic low back pain.

The INTRACEPT trial (Khalil 2019), an open-label RCT of patients (n=140) with ≥6 months of low back pain and Modic type 1 or 2 changes (L3–S1) randomized to BVN ablation versus standard care (≤4 non-consecutive vertebrae treated). Primary endpoint was ODI change at 3 months. A pre-planned interim analysis (n=104) showed significant improvement across all patient-reported outcomes favoring ablation; the trial was halted and crossover permitted. Limitations included short follow-up, no sham control, and early crossover. The authors concluded that minimally invasive RF ablation of the BVN led to significant improvement of pain and function at 3 months in patients with chronic vertebrogenic-related low back pain, and that BVNA is a safe and effective treatment for this population.

In the INTRACEPT trial 12-month follow-up (Smuck 2021), BVN ablation was superior to standard care at 3 and 6 months for both ODI (p<0.001) and VAS pain (p<0.001). In the ablation arm, improvements were maintained through 12 months (ODI −25.7 points; VAS −3.8 cm; both p<0.001 versus baseline). Among former standard-care patients, 92% elected to cross over to ablation and achieved comparable ODI improvement (−25.9 points) at 6 months post-treatment. At 24 months, Koreckij et al (2021) reported sustained but non-comparative improvements in pain, function, and quality of life. High crossover limits comparative data beyond 6 months. No serious adverse events were reported. Overall, authors concluded that BNVA improvements in pain, function, and quality of life were durable and sustained through 2 years with no serious adverse events.

Truumees et al (2019) conducted a prospective, open-label, single-arm, multicenter effectiveness study (n=28) evaluating BVNA in typical spine-practice settings with inclusion criteria of chronic low back pain ≥6 months, Modic type 1 or 2 changes L3–S1, up to 4 vertebral levels treated; prior surgery and opioid use allowed. The median age was 45 years, with 75% symptomatic ≥5 years, and 25% were active opioid users. At 3 months, significate improvement in ODI (30.1 points) and VAS 3.5 points, both p<0.0001). At total of 93% achieved ≥10-point and 75% ≥20-point ODI improvement. No control group and small sample size limit interpretation. Limitations include the single-arm, open-label design without a control group, a small sample size, and short-term (3-month) primary follow-up. The authors concluded BVNA is effective in real-world patients with vertebrogenic

chronic low back pain.

Mekhail et al (2023) conducted a systematic review and meta-analysis comparing interventions for chronic low back pain. BVN ablation, biological therapy, and multifidus muscle stimulation were the only treatments offering significant, durable improvement in both pain and disability. RF medial branch ablation and facet/medial branch steroid injections provided pain relief not significantly different from BVN ablation through 1 year but significantly less ODI improvement at their longest (6-month) follow-up. Among these therapies, only BVN ablation reported no serious adverse events.

Schnapp et al (2023) conducted the first independently funded US study on BVNA (n=16), reporting 1-, 3-, and 6-month follow-up findings. Eighty-one percent (n = 13) of the patients were male, with an average age of 73.3 (SD = 6.32). Chronic low back pain duration was greater than 12 months for all patients. No adverse events occurred. ODI improved significantly from baseline (−21.1 points at 6 months) as did VAS ($p<0.05$ at 1, 3, and 6 months); however, approximately 25% of patients with low baseline ODI showed no improvement at 6 months. Limitations include small size and absence of a control group. The authors concluded the procedure is feasible in community practice but that better-defined inclusion/exclusion criteria are needed.

McCormick et al (2026) conducted single-arm prospective real-world cohort study (n=60; mean age 57, 45% female) of BVNA in patients with low back pain ≥6 months and Modic type 1 or 2 changes. Mean ODI improved 13.9 and 14.0 points at 3 and 12 months. At 12 months, 52.8% achieved ≥30% ODI improvement and 39.6% achieved ≥15-point improvement; NRS responder rates were 67.9% (≥2-point) and 49.1% (≥50%), and 54.7% reported being "much or very much improved" on the Patient Global Impression of Change. The authors concluded that over half of real-world patients experienced clinically meaningful improvements in pain and function at 12 months. Limitations include the single-arm design without a control group and modest ODI improvement relative to the pivotal RCTs.

PROFESSIONAL GUIDELINE(S)

International Society for the Advancement of Spine Surgery (ISASS)

ISASS (Lorio 2022) published an updated policy statement recognizing intraosseous BVNA as a safe, predictable, and durable treatment for individuals with chronic axial vertebrogenic low back pain for at least 6 months who have failed at least 6 months of non-surgical management and demonstrate MRI-confirmed Modic type 1 and/or type 2 changes at one or more vertebral endplates from L3 to S1. The policy states that the procedure is not indicated in patients with active local or systemic infection, pregnancy, skeletal immaturity, significant spinal instability, cauda equina syndrome, vertebral body compromise related to trauma, tumor, infection, or poor bone quality, co-existing pathology requiring surgical intervention, severe cardiopulmonary compromise, or other conditions that increase the risk of unintended tissue injury..

American Society of Pain and Neuroscience (ASPN)

Sayed et al (2022) published evidence-based guidelines on vertebrogenic pain with BVNA, as well as broader guidelines for interventional treatments of low back pain. Both documents concluded that

moderate-to-high quality evidence supports BVNA, demonstrating clinically meaningful improvements in pain, function, and quality of life with a favorable safety profile in appropriately selected patients with chronic axial low back pain of at least six months' duration that is refractory to non-surgical conservative management and associated with vertebral endplate changes, including Modic type 1 and/or type 2 changes on MRI. The broader guideline further notes that published studies generally enrolled skeletally mature patients with significant pain and functional impairment (ODI ≥30 and VAS ≥4 cm; and commonly excluded individuals with active infection, pregnancy, Modic type 3 changes, vertebral tumors or metastatic disease, osteoporosis, symptomatic spinal stenosis, radicular pain, vertebral compression fracture at the treatment level, or certain bleeding disorders.

North American Spine Society (NASS)

The 2023 (NASS Basivertebral Nerve (BVN) Ablation Coverage Recommendations supports percutaneous interosseous radiofrequency ablation of the BVN for individuals who are:

- Skeletally mature with chronic low back pain for at least 6 months;
- Inadequately improved despite nonsurgical management;
- Have Type 1 or Type 2 Modic changes at endplates between L3 and S1.

NASS notes a growing evidence base that damage to innervated vertebral endplates produces vertebrogenic back pain transmitted via the BVN, with percutaneous intraosseous radiofrequency ablation emerging as an interventional option. NASS does not support transforaminal epiduroscopic BVN laser ablation, citing only a single promising case series and the need for further study.

REGULATORY STATUS

The U.S. Food and Drug Administration (FDA) regulates radiofrequency generators as medical devices. All radiofrequency generators including related components require FDA approval before marketing and use in the United States to ensure they are safe and effective for human use. Refer to the FDA Medical Device website. Available from: https://www.fda.gov/medical-devices [accessed 2026 Sep 12]

The FDA lists the most serious type of medical device recalls as well as early alert communications about corrective actions being taken by companies that the FDA believes are likely to be the most serious type of recalls. Available from: https://www.fda.gov/medical-devices/medical-device safety/medical-device-recalls-and-early-alerts [accessed 2026 Sep 12]

CODE(S)

- Codes may not be covered under all circumstances.
- Code list may not be all inclusive (AMA and CMS code updates may occur more frequently than policy updates).
- (E/I)=Experimental/Investigational
- (NMN)=Not medically necessary/appropriate

CPT Codes

Code	Description
64628	Thermal destruction of intraosseous basivertebral nerve, including all imaging guidance; first 2 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)

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HCPCS Codes

Code	Description
Not Applicable	

ICD10 Codes

Code	Description
M42.16	Adult osteochondrosis of spine, lumbar region
M42.17	Adult osteochondrosis of spine, lumbosacral region
M51.36	Other intervertebral disc degeneration, lumbar region
M51.360	Other intervertebral disc degeneration, lumbar region with discogenic back pain only
M51.37	Other intervertebral disc degeneration, lumbosacral region
M51.370	Other intervertebral disc degeneration, lumbosacral region with discogenic back pain only
M54.50	Low back pain, unspecified
M54.51	Vertebrogenic low back pain
M54.59	Other low back pain

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SEARCH TERMS

Not Applicable

CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

Thermal Destruction of the Intraosseous Basivertebral Nerve (BVN) for Vertebrogenic Lower Back Pain (LCD L40302) [accessed 2026 Sep 12]

PRODUCT DISCLAIMER

- Services are contract dependent; if a product does not cover a service, medical policy criteria do not apply.
- If a commercial product (including an Essential Plan or Child Health Plus product) covers a specific service, medical policy criteria apply to the benefit.
- If a Medicaid product covers a specific service, and there are no New York State Medicaid guidelines (eMedNY) criteria, medical policy criteria apply to the benefit.
- If a Medicare product (including Medicare HMO-Dual Special Needs Program (DSNP) product) covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.
- If a Medicare HMO-Dual Special Needs Program (DSNP) product DOES NOT cover a specific service, please refer to the Medicaid Product coverage line.

POLICY HISTORY/REVISION

Committee Approval Dates	
09/17/26	
Date	**Summary of Changes**
01/01/26	• Original effective date

09/30/26	• Policy edit, intent unchanged with reformatting and language updates.
09/17/26	• New Policy