

***Effective November 1, 2023, refer to CMS Manual 100-02, Chapter 16-General Exclusions from Coverage for services included in this policy.***



**BlueCross BlueShield  
of Alabama**

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**Name of Blue Advantage Policy:**  
**Magnetic Resonance Neurography**

Policy #: 177

Latest Review Date: October 2022

Category: Radiology

**ARCHIVED EFFECTIVE 11/1/2023**

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**BACKGROUND:**

*Blue Advantage medical policy does not conflict with Local Coverage Determinations (LCDs), Local Medical Review Policies (LMRPs) or National Coverage Determinations (NCDs) or with coverage provisions in Medicare manuals, instructions or operational policy letters. In order to be covered by Blue Advantage the service shall be reasonable and necessary under Title XVIII of the Social Security Act, Section 1862(a)(1)(A). The service is considered reasonable and necessary if it is determined that the service is:*

- 1. Safe and effective;*
- 2. Not experimental or investigational\*;*
- 3. Appropriate, including duration and frequency that is considered appropriate for the service, in terms of whether it is:*
  - Furnished in accordance with accepted standards of medical practice for the diagnosis or treatment of the patient's condition or to improve the function of a malformed body member;*
  - Furnished in a setting appropriate to the patient's medical needs and condition;*
  - Ordered and furnished by qualified personnel;*
  - One that meets, but does not exceed, the patient's medical need; and*
  - At least as beneficial as an existing and available medically appropriate alternative.*

*\*Routine costs of qualifying clinical trial services with dates of service on or after September 19, 2000 which meet the requirements of the Clinical Trials NCD are considered reasonable and necessary by Medicare. Providers should bill **Original Medicare** for covered services that are related to **clinical trials** that meet Medicare requirements (Refer to Medicare National Coverage Determinations Manual, Chapter 1, Section 310 and Medicare Claims Processing Manual Chapter 32, Sections 69.0-69.11).*

## **POLICY:**

**Blue Advantage** will treat **magnetic resonance neurography** as a **non-covered** benefit and as **investigational**.

*Blue Advantage does not approve or deny procedures, services, testing, or equipment for our members. Our decisions concern coverage only. The decision of whether or not to have a certain test, treatment or procedure is one made between the physician and his/her patient. Blue Advantage administers benefits based on the members' contract and medical policies. Physicians should always exercise their best medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.*

## **DESCRIPTION OF PROCEDURE OR SERVICE:**

Magnetic resonance neurography (MRN) is a novel imaging technique recently developed for direct imaging of spinal and peripheral nerves. Modifications are made to standard MRI technology using special software and hardware upgrades that enable direct high-resolution longitudinal and cross-sectional images of peripheral nerves such that the morphology of the nerve can be visualized. MRN has been studied to supplement diagnostic evaluations by electromyography (EMG) and nerve conduction studies (NCS) in patients with suspected peripheral nerve tumors, traumatic injury, post-irradiation neuritis, chronic compression, and pain syndromes where an anatomic lesion is suspected.

## **KEY POINTS:**

The most recent literature review was performed through October 11, 2022.

### **Summary of Evidence**

At this time there is inadequate data regarding the diagnostic performance of magnetic resonance neurography, in terms of defining the normal range of morphologies, the sensitivity and specificity of identification of abnormalities in comparison to other diagnostic tests, and the impact on net health outcomes. Much of the current literature is limited to retrospective reviews and studies with small participant numbers.

Although current evidence supports MRN as a promising technique, the outcome data which would determine the efficacy of this technology is limited to studies involving a small number of patients, making it premature to offer conclusions regarding its effectiveness for the general population. Additionally, large-scale, well-conducted, controlled studies with this approach are warranted to determine its efficacy in imaging neurofibromas and distinguishing benign from malignant lesions.

The sensitivity, specificity, as well as positive predictive value (PPV) and negative predictive value (NPV) of MRN in the diagnosis and management of patients with peripheral nerve

disorders remain unclear. Thus, the accuracy and clinical value of magnetic resonance neurography has yet to be established.

**KEY WORDS:**

Magnetic resonance neurography, MRN, Magnetic resonance neurogram, MR Neurography, MR Imaging of Peripheral Nerves, PNI, peripheral nerve imaging, nerve evaluation, peripheral nerve injury

**APPROVED BY GOVERNING BODIES:**

Not applicable

**BENEFIT APPLICATION:**

Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.

**CURRENT CODING:**

There are no specific codes for magnetic resonance neurography.

**CPT Codes:**

76498	Unlisted magnetic resonance procedure (e.g., diagnostic, interventional)
64999	Unlisted Procedure, Nervous System

**REFERENCES:**

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13. Zhang Z, Song L, Meng Q, et al. Morphological analysis in patients with sciatica: A magnetic resonance imaging study using three-dimensional high-resolution diffusion-weighted magnetic resonance neurography techniques. *Spine.* 2009; 34(7):E245-E250.

## POLICY HISTORY:

Adopted for Blue Advantage, June 2011

Available for comment July 6 through August 22, 2011

Medical Policy Group, July 2015

Medical Policy Group, September 2018 **(3)** Updates to Key Points and References. No changes to policy statement or intent.

Medical Policy Group, November 2019

Medical Policy Group, November 2021

Medical Policy Group, October 2022: Reviewed by consensus. No new published peer-reviewed literature available that would alter the coverage statement in this policy.

Medical Policy Group, November 2023: Archived effective 11/1/2023.

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*This medical policy is not an authorization, certification, explanation of benefits, or a contract. Eligibility and benefits are determined on a case-by-case basis according to the terms of the member's plan in effect as of the date services are rendered. All medical policies are based on (i) research of current medical literature and (ii) review of common medical practices in the treatment and diagnosis of disease as of the date hereof. Physicians and other*

*providers are solely responsible for all aspects of medical care and treatment, including the type, quality, and levels of care and treatment.*

*This policy is intended to be used for adjudication of claims (including pre-admission certification, pre-determinations, and pre-procedure review) in Blue Cross and Blue Shield's administration of plan contracts.*