04-70540-07 Original Effective Date: 08/15/01 Reviewed: 04/24/25 Revised: 05/15/25

Subject: Magnetic Resonance Spectroscopy (MRS)

THIS MEDICAL COVERAGE GUIDELINE IS NOT AN AUTHORIZATION, CERTIFICATION, EXPLANATION OF BENEFITS, OR A GUARANTEE OF PAYMENT, NOR DOES IT SUBSTITUTE FOR OR CONSTITUTE MEDICAL ADVICE. ALL MEDICAL DECISIONS ARE SOLELY THE RESPONSIBILITY OF THE PATIENT AND PHYSICIAN. BENEFITS ARE DETERMINED BY THE GROUP CONTRACT, MEMBER BENEFIT BOOKLET, AND/OR INDIVIDUAL SUBSCRIBER CERTIFICATE IN EFFECT AT THE TIME SERVICES WERE RENDERED. THIS MEDICAL COVERAGE GUIDELINE APPLIES TO ALL LINES OF BUSINESS UNLESS OTHERWISE NOTED IN THE PROGRAM EXCEPTIONS SECTION.

Position Statement	Billing/Coding	<u>Reimbursement</u>	Program Exceptions	Definitions	<u>Related</u> <u>Guidelines</u>
Other	<u>References</u>	<u>Updates</u>			

DESCRIPTION:

Magnetic resonance spectroscopy (MRS) is a noninvasive technique that can be used to measure the concentrations of different chemical components within tissues. The technique is based on the same physical principles as magnetic resonance imaging (MRI) and the detection of energy exchange between external magnetic fields and specific nuclei within atoms. The information produced by MRS is displayed graphically as a spectrum with peaks consistent with the various chemicals detected. MRS may be performed as an adjunct to MRI. An MRI image is first generated, and then MRS spectra are developed at the site of interest, termed the voxel. While an MRI provides an anatomic image of the brain, MRS provides a functional image related to underlying dynamic physiology. The information produced by MRS is used to assist in planning a course of treatment. MRS can be performed with existing MRI equipment, modified with additional software and hardware. Multiple software packages for performing proton MRS have received clearance by the U.S. Food and Drug Administration (FDA) through the 510(k) process.

Summary and Analysis of Evidence: Magnetic resonance spectroscopy (MRS) is a proven and useful method for the evaluation, assessment of severity, therapeutic planning, post-therapeutic monitoring, and follow-up of diseases of the brain and other regions of the body. (ACR, 2019) MR spectroscopy and MR perfusion using choline/N-acetyl aspartate (Cho/NAA) and choline/creatine (Cho/Cr) ratios and relative cerebral blood volume (rCBV) may increase the accuracy of differentiating necrosis from recurrent tumor in patients with primary brain tumors or metastases (Chuang, 2016).

POSITION STATEMENT:

Magnetic resonance spectroscopy (MRS) **meets the definition of medical necessity** for the following indications:

• Evaluation of recurrent or residual brain tumor from post-therapy changes

• For further evaluation of a brain lesion to differentiate brain tumor from other non-tumor diagnoses.

BILLING/CODING INFORMATION:

CPT Coding:

76390	Magnetic resonance spectroscopy

REIMBURSEMENT INFORMATION:

Refer to section entitled **POSITION STATEMENT**.

Re-imaging or additional imaging due to poor contrast enhanced exam or technically limited exam is the responsibility of the imaging provider.

PROGRAM EXCEPTIONS:

Federal Employee Plan (FEP): Follow FEP guidelines.

Medicare Advantage products: No National Coverage Determination (NCD) and/or Local Coverage Determination (LCD) were found at the time of the last guideline reviewed date.

If this Medical Coverage Guideline contains a step therapy requirement, in compliance with Florida law 627.42393, members or providers may request a step therapy protocol exemption to this requirement if based on medical necessity. The process for requesting a protocol exemption can be found at <u>Coverage</u> <u>Protocol Exemption Request</u>.

DEFINITIONS:

No guideline specific definitions apply.

RELATED GUIDELINES:

None applicable.

OTHER:

Other names used to report magnetic resonance spectroscopy:

Magnetic resonance spectroscopy imaging (MRSI) NMR (nuclear magnetic resonance) spectroscopy Proton magnetic resonance spectroscopy (1H-MRS) Proton spectroscopy

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COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 04/24/25.

GUIDELINE UPDATE INFORMATION:

07/26/01	New Medical Coverage Guideline.
08/15/01	Annual review of Investigational status – no changes.
08/15/02	Reviewed. Revised to include National Medicare coverage change to non-covered
	(investigational). Added references.
09/15/03	Annual review. Maintain investigational status.
10/15/05	Annual review. Revised Medical Coverage Guideline from investigational to medically
	necessary when used to differentiate residual brain tumor from post-therapy changes
	(e.g., delayed radiation necrosis); or differentiate brain tumor from other non-tumor
	diagnoses (e.g., abscesses or other infectious or inflammatory processes). Revised
	description. Updated other section, added other names used to report MRS. Updated
	references.
07/15/06	Scheduled Review. Added investigational statement for non-covered conditions:
	epilepsy, Alzheimer's disease, Parkinson' disease, multiple sclerosis, bipolar disorder,
	prostate cancer, diagnosing unexplained chest pain, detection and monitoring of
	neurometabolic diseases, disorders of muscle, and breast lesions. Deleted Medicare
	Advantage products program exception. Updated references.
07/01/07	Updated Program Exception section.
08/15/07	Review, coverage statements maintained, guideline reformatted, references updated.
01/21/08	Updated Program Exceptions.
07/15/08	Scheduled reviewed. No change in position statements. Added magnetic resonance
	spectroscopy imaging (MRSI) to the other section. Updated references.
07/01/09	Updated BCBSF Radiology Management program exception; removed Federal Employee
	Plan (FEP) from BCBSF Radiology Management program exception statement, added FEP
	program exception statement: FEP is excluded from the National Imaging Associates
	(NIA) review; follow FEP guidelines and added BlueSelect.

09/15/09	Annual review. Maintain position statements. Added Medicare program exception.
	Updated references.
08/15/11	Updated BCBSF Radiology Management Program exception.
09/15/11	Annual review. Updated description section; deleted information regarding the study of
	MRS. Maintain position statements. Updated references.
12/15/13	Annual review. Maintain position statements. Added FEP and Medicare program
	exception. Updated references.
01/01/15	Scheduled review; maintain position statement. Updated references.
06/15/18	Revision; revised position statement. Updated references.
03/15/20	Review/Revision. Revised medical necessity criteria. Deleted experimental or
	investigational position statement. Updated references.
05/15/22	Review/update. No change in position statement. Updated references.
07/01/22	Revision to Program Exceptions section.
09/30/23	Review: position statements and references updated.
05/15/24	Review; no change in position statement. Updated references.
05/15/25	Review; no change in position statement. Updated references.