



**Cohere Medical Policy -
Magnetic Resonance Imaging (MRI), Bone Marrow**
Clinical Policy for Medical Necessity Review

Version: 5

Cohere Health UMC Approval Date: August 28, 2025

Last Annual Review: August 28, 2025

Revision: Not Applicable

Next Annual Review: August 28, 2026

Important Notices

Notices & Disclaimers:

GUIDELINES ARE SOLELY FOR COHERE'S USE IN PERFORMING MEDICAL NECESSITY REVIEWS AND ARE NOT INTENDED TO INFORM OR ALTER CLINICAL DECISION-MAKING OF END USERS.

Cohere Health, Inc. ("**Cohere**") has published these clinical guidelines to determine the medical necessity of services (the "**Guidelines**") for informational purposes only, and solely for use by Cohere's authorized "**End Users**". These Guidelines (and any attachments or linked third-party content) are not intended to be a substitute for medical advice, diagnosis, or treatment directed by an appropriately licensed healthcare professional. These Guidelines are not in any way intended to support clinical decision-making of any kind; their sole purpose and intended use is to summarize certain criteria Cohere may use when reviewing the medical necessity of any service requests submitted to Cohere by End Users. Always seek the advice of a qualified healthcare professional regarding any medical questions, treatment decisions, or other clinical guidance. The Guidelines, including any attachments or linked content, are subject to change at any time without notice.

© 2025 Cohere Health, Inc. All Rights Reserved.

Other Notices:

HCPCS® and CPT® copyright 2025 American Medical Association. All rights reserved.

Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein.

HCPCS and CPT are registered trademarks of the American Medical Association.

Policy Information:

Specialty Area: Diagnostic Imaging

Policy Name: Cohere Medical Policy - Magnetic Resonance Imaging (MRI), Bone Marrow

Type: Adult (18+ yo) | Pediatric (0-17 yo)

Table of Contents

Important Notices	2
Medical Necessity Criteria	4
Service: Magnetic Resonance Imaging (MRI), Bone Marrow	4
Description	5
Medical Necessity Criteria	5
Indications	5
Non-Indications	6
Level of Care Criteria	6
Procedure Codes (CPT/HCPCS)	6
Medical Evidence	7
References	8
Policy Revision History/Information	9

Medical Necessity Criteria

Service: Magnetic Resonance Imaging (MRI), Bone Marrow

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity.

Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include a referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- Repeat diagnostic testing due to technical issues—such as patient motion, incomplete exams, or incorrect imaging sequences—may not be considered medically necessary, as it is the responsibility of the imaging center to deliver appropriate, high-quality studies as originally authorized. Similarly, repeat imaging requested at a different facility based solely on provider preference may not be approved for medical necessity.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
 - The medical necessity of each individual request

- Why prior imaging or procedures were inconclusive or why additional/follow-up studies are needed
- How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.
- Cohere Health evaluates imaging exams based on medical necessity, regardless of contrast use. If an initial non-contrast study is completed and the radiologist later determines that contrast is needed to clarify a finding, the original authorization number may be used—provided the contrast-enhanced exam is performed at the same imaging center and within the original request's validity period, unless otherwise directed by the health plan.

Description

Magnetic resonance imaging (MRI) of the bone marrow is a noninvasive diagnostic tool that provides insight into the health of the components of bone marrow. It allows for the early detection of marrow infiltration and can be used as a prognostic tool as part of ongoing surveillance. MRI offers benefits over computed tomography (CT), including greater contrast resolution and the lack of radiation exposure.^{1,2}

Medical Necessity Criteria

Indications

Magnetic resonance imaging (MRI), bone marrow is considered appropriate if **ANY** of the following is **TRUE**¹⁻⁸:

- Multiple myeloma, including **ANY** of the following^{1,2}:
 - Monoclonal gammopathy of uncertain significance (MGUS) (low dose computed tomography [CT], whole body is preferred); **OR**
 - Solitary bone plasmacytoma³; **OR**
 - Systemic multiple myeloma, suspected or confirmed⁴; **OR**
 - Smoldering multiple myeloma, suspected or confirmed⁴; **OR**
- Diagnosis and assessment of treatment response of marrow involvement diseases (e.g., chronic recurrent multifocal osteomyelitis, Gaucher disease); **OR**
- Repeat imaging (defined as a repeat request following recent imaging of

the same anatomic region with the same or similar modality) will be considered reasonable and necessary if **ALL** of the following are **TRUE**:

- There are no established guidelines; **AND**
- **ANY** of the following:
 - There are new or worsening symptoms not addressed in the guidelines, such that repeat imaging would influence treatment; **OR**
 - There is need for a one-time clarifying follow-up of a prior indeterminate finding; **OR**
 - In the absence of change in symptoms, there is an established need for monitoring which would influence management.

Non-Indications

Magnetic resonance imaging (MRI), bone marrow may not be considered appropriate if **ANY** of the following is **TRUE**:

- The patient has undergone advanced imaging of the same body part within 3 months without undergoing treatment or developing new or worsening symptoms.⁹

*NOTE: MRI in patients with claustrophobia should be requested at the discretion of the ordering provider.

**NOTE: MRI in pregnant patients should be requested at the discretion of the ordering provider and obstetric care provider.

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
77084	Magnetic resonance imaging (MRI) (e.g., proton); bone marrow blood supply

Medical Evidence

Karampinos et al. (2018) reviewed quantitative magnetic resonance imaging (MRI) and spectroscopy of bone marrow. Due to its exceptional soft-tissue contrast capability, MRI is the preferred imaging method for tracking certain bone marrow alterations. MRI of the bone marrow is routinely utilized to diagnose and visualize marrow lesions and monitor response to treatment (e.g., plasmacytoma, multiple myeloma). Innovative quantitative MRI techniques and magnetic resonance spectroscopy (MRS) can accurately measure changes in bone marrow composition, including water-fat distribution, cellularity, and perfusion across various pathologies.⁶

Shah et al. (2014) conducted a retrospective cohort study on the evaluation of incidental abnormal bone marrow signals on MRI. Among 49,678 MRI scans conducted, 110 patients over 18 met the inclusion criteria. Of note, 22% underwent additional evaluation, primarily consisting of complete blood counts, serum protein electrophoresis, or bone scans. Over a median follow-up period of 41 months, 6% of patients received diagnoses of malignancies, including multiple myeloma, non-Hodgkin's lymphoma, metastatic non-small cell lung cancer, and metastatic adenocarcinoma. Furthermore, one patient who had not undergone evaluation was diagnosed with breast cancer 24 months after the MRI. Abnormal or heterogeneous bone marrow signals on MRI should not be dismissed, as they often warrant further investigation.⁷

References

1. Stanborough R, Demertzis JL, Wessell DE, et al. Malignant or aggressive primary musculoskeletal tumor—staging and surveillance. ACR appropriateness criteria [Internet] American College of Radiology (ACR). Updated 2022. <http://www.acr.org>
2. Chantry A, Kazmi M, Barrington S, et al. Guidelines for the use of imaging in the management of patients with myeloma. *Br J Haematol* 2017; 178:380–93
3. Dimopoulos MA, Hillengass J, Usmani S, et al. Role of magnetic resonance imaging in the management of patients with multiple myeloma: A consensus statement. *J Clin Oncol*. 2015 Feb 20;33(6):657–64. doi:10.1200/JCO.2014.57.9961
4. Messiou C, Hillengass J, Delorme S, et al. Guidelines for acquisition, interpretation, and reporting of whole-body MRI in myeloma: Myeloma Response Assessment and Diagnosis System (MY-RADS). 2019 Apr;291(1):5–13. doi:10.1148/radiol.2019181949
5. Mulé S, Reizine E, Blanc-Durand P, et al. Whole-body functional MRI and PET/MRI in multiple myeloma. *Cancers*. 2020 Oct 27;12(11):3155
6. Karampinos DC, Ruschke S, Dieckmeyer M, et al. Quantitative MRI and spectroscopy of bone marrow. *J Magn Reson Imaging*. 2018 Feb;47(2):332–353. doi:10.1002/jmri.25769
7. Shah GL, Rosenberg AS, Jarboe J, et al. Incidence and evaluation of incidental abnormal bone marrow signal on magnetic resonance imaging. *Scientific World Journal*. 2014;2014:380814. doi:10.1155/2014/380814
8. Voit AM, Arnoldi AP, Douis H, et al. Whole-body magnetic resonance imaging in chronic recurrent multifocal osteomyelitis: Clinical longterm assessment may underestimate activity. *J Rheumatol*. 2015;42(8):1455–1462. doi:10.3899/jrheum.141026
9. Wasser EJ, Prevedello LM, Sodickson A, Mar W, Khorasani R. Impact of a real-time computerized duplicate alert system on the utilization of computed tomography. *JAMA Intern Med*. 2013;173(11):1024–1026. doi:10.1001/jamainternmed.2013.543

Policy Revision History/Information

Original Date: April 1, 2022		
Review History		
Version 2	08/15/2024	Annual review and policy restructure.
Version 3	10/3/2024	Updated Medical Evidence section and reference list.
Version 4	10/30/2024	Edited repeat imaging criteria language.
Version 5	08/28/2025	Annual review Updated content layout to align with revised template, including repeat imaging criteria Added example for marrow process-chronic recurrent multifocal osteomyelitis Removed outdated references and reordered citations to match order in which they first appear