MEDICAL POLICY STATEMENT
Michigan Medicaid

Policy Name & Number	Date Effective
Low-Field Magnetic Resonance Imaging (MRI)-MI MCD-MM-1541	06/01/2024-02/28/2025
Policy Type	
MEDICAL	

Medical Policy Statement prepared by CareSource and its affiliates are derived from literature based on and supported by clinical guidelines, nationally recognized utilization and technology assessment guidelines, other medical management industry standards, and published MCO clinical policy guidelines. Medically necessary services include, but are not limited to, those health care services or supplies that are proper and necessary for the diagnosis or treatment of disease, illness, or injury and without which the patient can be expected to suffer prolonged, increased or new morbidity, impairment of function, dysfunction of a body organ or part, or significant pain and discomfort. These services meet the standards of good medical practice in the local area, are the lowest cost alternative, and are not provided mainly for the convenience of the member or provider. Medically necessary services also include those services defined in any Evidence of Coverage documents, Medical Policy Statements, Provider Manuals, Member Handbooks, and/or other policies and procedures.

Medical Policy Statements prepared by CareSource and its affiliates do not ensure an authorization or payment of services. Please refer to the plan contract (often referred to as the Evidence of Coverage) for the service(s) referenced in the Medical Policy Statement. If there is a conflict between the Medical Policy Statement and the plan contract (i.e., Evidence of Coverage), then the plan contract (i.e., Evidence of Coverage) will be the controlling document used to make the determination. According to the rules of Mental Health Parity Addiction Equity Act (MHPAEA), coverage for the diagnosis and treatment of a behavioral health disorder will not be subject to any limitations that are less favorable than the limitations that apply to medical conditions as covered under this policy.

Table of Contents

A. Subject

Low-Field Magnetic Resonance Imaging (MRI)

B. Background

Magnetic resonance imaging (MRI) is a non-invasive technology that produces three-dimensional, anatomical images of the human body used for disease detection, diagnosis, and treatment monitoring. MRI scanners, typically high-field, whole-body, tunnel-shaped systems, are based on the use of magnets that excite and detect changes in the direction of the rotational axis of protons found in the water that make up living tissues. Magnetic field strength is measured by the unit Tesla (T). Most commercial MRI scanners range in strength from 0.2 T to 7 T, while scanners used for research purposes can exhibit much higher than 7 T.

Low-field MRI systems typically range from 0.25 T to 1 T. Advantages to these systems include a smaller sized device, a lower purchase price, reduced maintenance costs, more convenient installation, and greater patient comfort and safety in both adult and pediatric patients who may otherwise require sedation. Disadvantages include a smaller field of view, reduced number of imaging techniques, lower signal-to-noise ratio, limited anatomic coverage, and longer acquisition times. Low-field MRI systems have traditionally been viewed as poorly performing systems, because the older types of low-field MRI systems often had limited spatial resolution associated with poor image quality, limited available receiver coils, limited kinds of image sequences and parameters, and inefficient temporal resolution associated with low signal-to-noise ratio (SNR).

C. Definitions

- **Tesla** – A unit of magnetic flux density in the International System of Units (SI) equal to one weber per square meter.

D. Policy

I. Low-field magnetic resonance imaging is considered experimental and investigational.

II. Any drug, biologic, device, diagnostic, product, equipment, procedure, treatment, service, or supply used in or directly related to the diagnosis, evaluation, or treatment of a disease, injury, illness, or other health condition which CareSource determines in its sole discretion to be experimental or investigational is not covered by CareSource.

E. Conditions of Coverage

NA

F. Related Policies/Rules

Experimental and Investigational Item and Service
Medical Necessity Determinations

G. Review/Revision History

	DATE	ACTION
Date Issued	09/13/2023	New policy. Approved at Committee.
Date Revised	03/13/2024	Annual review. Updated references. Approved at Committee.
Date Effective	06/01/2024	
Date Archived	02/28/2025	This Policy is no longer active and has been archived. Please note that there could be other Policies that may have some of the same rules incorporated and CareSource reserves the right to follow CMS/State/NCCI guidelines without a formal documented Policy.

H. References

1. Arnold T, Freeman C, Litt B, et al. Low-field MRI: clinical promise and challenges. *J Magn Reson Imaging.* 2023;57(1):25-44. doi.org/10.1002/jmri.28408
2. Heiss R, Nagel AM, Laun FB, et al. Low-field magnetic resonance imaging: a new generation of breakthrough technology in clinical imaging. *Invest Radiol*. 2021;56(11):726-733. doi:10.1097/RLI.0000000000000805
3. Hori M, Hagiwara A, Goto M, et al. Low-field magnetic resonance imaging: its history and renaissance. *Invest Radiol*. 2021;56(11):669-679. doi:10.1097/RLI.00000000810
4. Marques J, Simonis F, Webb A. Low-field MRI: an MR physics perspective. *J Magn Reson Imaging*. 2019;49(6):1528-1542. doi:10.1002/jmri.26637
5. US Department of Health and Human Services. Magnetic Resonance Imaging (MRI). National Institute of Biomedical Imaging and Bioengineering. Accessed February 27, 2024. www.nibib.nih.gov