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# 2025 Magnetic Resonance (MR) Elastography Publication

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## *Diagnostic Imaging*

MR-Elastography-HH

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## Magnetic Resonance Elastography (MRE)

### MRI General Contraindications

MRI is contraindicated for **ANY** of the following: [5] [2] [4]

- Safety, related to clinical status (body mass index exceeds MRI capability, intravascular stents within recent 6 weeks)
- Safety, related to implanted devices (aneurysm clips, cochlear implant, implantable cardio-defibrillators, insulin pump, permanent pace maker, spinal cord stimulator)<sup>1</sup>

### Preamble: Pediatric Diagnostic Imaging

HealthHelp's clinical guidelines for the Diagnostic Imaging program, are intended to apply to both adults and pediatrics (21 years of age or younger), unless otherwise specified within the criteria.

### MRE Guideline

Magnetic resonance elastography (MRI is considered medically appropriate, for initial staging, when the documentation demonstrates **ALL** of the following:

1. Chronic liver disease (eg, alcohol-related liver disease, Hepatitis B, Hepatitis C, non-alcoholic fatty liver disease [NAFLD]) is present (eg, abnormal liver function tests).  
**References:** [6] [3] [1]
2. Prior ultrasound (elastography) is non-diagnostic or indeterminate **OR contraindicated or unavailable**.  
**References:** [6] [3] [1]

### MR Elastography Summary of Changes

MR Elastography had the following version changes from 2024 to 2025:

- Citations updated per the evidence
- Added new "Prior ultrasound (elastography) is non-diagnostic or indeterminate **OR contraindicated or unavailable**" indication to keep in line with current evidence.

<sup>1</sup>Some implanted devices that were once absolute contraindications to a MRI may now be accepted, including if the specific MRI is able to accommodate the device or the device itself is deemed safe for MRI.

## MR Elastography Procedure Codes

**Table 1. Magnetic Resonance Elastography Associated Procedure Codes**

CODE	DESCRIPTION
76391	Magnetic resonance (eg, vibration) elastography

## MR Elastography Definitions

**Elastography** is an imaging technique used to measure the stiffness of tissues, often to detect fibrosis or other pathological changes.

**Fibrosis** is the pathological replacement of normal tissue architecture with rigid, collagen-rich connective tissue, leading to organ dysfunction.

**Hepatitis** inflammation of the liver tissue, which can be caused by various factors including viral infections, alcohol consumption, certain drugs, autoimmune diseases, and fatty liver disease.

**Magnetic resonance imaging (MRI)** is a non-invasive diagnostic technique that produces computerized images of internal body tissues and is based on nuclear magnetic resonance of atoms within the body induced by the application of radio waves.

**Pediatric approximate ages** are defined by the US Department of Health (USDH), the Food and Drug Administration (FDA), and the American Academy of Pediatrics (AAP) as the following:

- Infancy, between birth and 2 years of age
- Childhood, from 2 to 12 years of age
- Adolescence, from 12 to 21 years of age, further defined by the AAP into:
  1. Early (ages 11–14 years)
  2. Middle (ages 15–17 years),
  3. Late (ages 18–21 years)
  4. Older ages may be appropriate for children with special healthcare needs.

## MR Elastography Reference

- [1] Bashir, M.R., Horowitz, J.M., . . . Carucci, L.R. (2020). ACR Appropriateness Criteria Chronic Liver Disease. *Journal of the American College of Radiology*, 17(5S), S70-S80.
- [2] Carpenter, J.P., Litt, H. & Gowda, M. (2023). Magnetic Resonance Imaging and Arteriography. A.N. Sidawy (Eds.). *Rutherford's Vascular Surgery and Endovascular Therapy* (30). (pp. 336-394.e4). Philadelphia, PA: Elsevier.
- [3] Ehman, R.L. (2022). Magnetic resonance elastography: from invention to standard of care. *Abdominal Radiology*, 47(9), 3028-3036.

- [4] Gupta, S.K., Ya'qoub, L., . . . Saeed, I.M. (2020). Safety and Clinical Impact of MRI in Patients with Non-MRI-conditional Cardiac Devices. *Radiology: Cardiothoracic Imaging*, 2(5), e200086.
- [5] Maralani, P.J., Schieda, N., . . . Weinreb, J. (2020). MRI safety and devices: An update and expert consensus. *Journal of Magnetic Resonance Imaging*, 51(3), 657-674.
- [6] Pepin, K.M., Welle, C.L., . . . Venkatesh, S.K. (2022). Magnetic resonance elastography of the liver: everything you need to know to get started. *Abdominal Radiology*, 47(1), 91-114.

## Disclaimer section

### Purpose

The purpose of the HealthHelp's clinical guidelines is to assist healthcare professionals in selecting the medical service that may be appropriate and supported by evidence to safely improve outcomes. Medical information is constantly evolving, and HealthHelp reserves the right to review and update these clinical guidelines periodically. HealthHelp reserves the right to include in these guidelines the clinical indications as appropriate for the organization's program objectives. Therefore the guidelines are not a list of all the clinical indications for a stated procedure, and associated Procedure Code Tables may not represent all codes available for that state procedure or that are managed by a specific client-organization.

### Clinician Review

These clinical guidelines neither preempt clinical judgment of trained professionals nor advise anyone on how to practice medicine. Healthcare professionals using these clinical guidelines are responsible for all clinical decisions based on their assessment. All Clinical Reviewers are instructed to apply clinical indications based on individual patient assessment and documentation, within the scope of their clinical license.

### Payment

The use of these clinical guidelines does not provide authorization, certification, explanation of benefits, or guarantee of payment; nor do the guidelines substitute for, or constitute, medical advice. Federal and State law, as well as member benefit contract language (including definitions and specific contract provisions/exclusions) take precedence over clinical guidelines and must be considered first when determining eligibility for coverage. All final determinations on coverage and payment are the responsibility of the health plan. Nothing contained within this document can be interpreted to mean otherwise.



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## National and Local Coverage Determination (NCD and LCD)



### NOTICE

To ensure appropriate review occurs to the most current NCD and/or LCD, always defer to <https://www.cms.gov/medicare-coverage-database/search.aspx>.

## Background

National Coverage Determinations (NCD) and Local Coverage Determinations (LCD) are payment policy documents outlined by the Centers for Medicare and Medicaid Services (CMS) and the government's delegated Medicare Audit Contractors (MACs) that operate regionally in jurisdictions.

CMS introduced variation between different jurisdictions/Medicare Audit Contractors (MACs) and their associated covered code lists with the transition to ICD 10. The variation resulted in jurisdictions independently defining how codes are applied for exclusions, limitations, groupings, ranges, etc. for the medical necessity indications outlined in the NCD and LCD. Due to this variation, there is an inconsistent use/application of codes and coverage determinations across the United States between the different MACs.

In addition, **WITHOUT** notice, CMS can change the codes that indicate medical necessity and the format of the coverage determinations/associated documents (eg, Articles). This is an additional challenge for organizations to keep up with ongoing, unplanned changes in covered codes and medical necessity indications.

## Medical Necessity Codes

Due to the variation in code application between jurisdictions/MACs and that updates can happen without notification, HealthHelp is not able to guarantee full accuracy of the codes listed for any Coverage Determination, and advises that prior to use, the associated Coverage Determination Articles are reviewed to ensure applicability to HealthHelp's programs and any associated NCDs and LCDs.



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