



# Evolut Clinical Guideline 2038 for Magnetic Resonance Elastography (MRE)

<b>Guideline Number:</b> Evolut_CG_2038	<b><u>Applicable Codes</u></b>	
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## STATEMENT

### General Information

- *It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.*
- *Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.*
- *The guideline criteria in the following sections were developed utilizing evidence-based and peer-reviewed resources from medical publications and societal organization guidelines as well as from widely accepted standard of care, best practice recommendations.*

### Purpose

Magnetic resonance elastography (MRE) combines magnetic resonance imaging (MRI) with low-frequency vibrations to map the stiffness of tissue (elastogram).

## INDICATIONS FOR ABDOMEN MR ELASTOGRAPHY

### Evaluation of Hepatic Fibrosis <sup>(1-3)</sup>

- Indicated after intermediate findings (between 8-12.5 pKa) on ultrasound elastography (such as Vibration-controlled transient elastography (VTCE) or point shear wave elastography (pSWE) testing )
- Indicated in an individual with known (Non-Alcoholic Fatty Liver Disease) NAFLD <sup>(4)</sup> and any **ONE** or more of the following:
  - Central obesity (BMI > 35 **OR** BMI ≥ 25 + waist circumference ≥ 90 cm in men or 80 cm in women <sup>(5)</sup>)
  - Diabetes Mellitus
  - Elevated liver enzymes
  - Fibrosis-4 index (FIB-4) score ≥ 2.67 (when provided or calculated, see **Background**) <sup>(6,7)</sup>
  - Non-alcoholic fatty liver disease (NAFLD) Fibrosis Score (NFS) ≥ 0.676 (when provided or calculated, see **Background**) <sup>(7)</sup>
  - ELF (Enhanced Liver Fibrosis) test ≥ 9.8 (when provided, see **Background**) <sup>(8)</sup>

## IMAGING IN KNOWN GENETIC CONDITIONS

- Alpha-1 Anti-Trypsin Deficiency (AATD): every 6 months <sup>(9)</sup>
- Hemochromatosis: at diagnosis <sup>(10)</sup>

### Combination Studies for known genetic conditions

**NOTE:** When medical necessity is met for an individual study **AND** conscious sedation is required (such as for young pediatric patients or patients with significant developmental delay), the entire combination is indicated)

#### *Abdomen MRI and MR Elastography*

- Alpha-1 Anti-Trypsin Deficiency (AATD): every 6 months <sup>(9)</sup>
- Hemochromatosis: at diagnosis <sup>(10)</sup>

## OTHER COMBINATION STUDIES WITH MRE

**NOTE:** When medical necessity is met for an individual study **AND** conscious sedation is required (such as for young pediatric patients or patients with significant developmental delay), the entire combination is indicated)

### MR Elastography and Abdomen MRI

- MRI Abdomen can be used for HCC screening and MR Elastography can be used to stage hepatic fibrosis. When each indication requires an insufficient ultrasound, that ultrasound needs to be insufficient for only one of the two indications to meet medical necessity for both studies.

## CODING AND STANDARDS

### Codes

76391

### Applicable Lines of Business

☒	CHIP (Children’s Health Insurance Program)
☒	Commercial
☒	Exchange/Marketplace

☒	Medicaid
☒	Medicare Advantage

## BACKGROUND

### Liver Elastography

Patients with an increased risk for development of hepatic fibrosis (such as individuals with hepatic steatosis) are typically first assessed with non-invasive liver disease assessment (NILDA) tools which include blood work and imaging studies.

The FIB-4 score, NAFLD Fibrosis Score (NFS), and ELF score are clinical indices that measure metabolic abnormalities that may be associated with development of liver fibrosis. <sup>(8,11,12)</sup>

In most types of liver disease, non-advanced imaging elastography techniques such as vibration-controlled transient elastography (VCTE), point shear wave elastography (pSWE) and 2-dimensional shear wave elastography (2DSWE) are the starting point for diagnosis after risk assessment. If the VCTE is < 8, there is low risk for development of fibrosis and that individual would have continued monitoring with risk tools such as the FIB-4 score. When the VTCE is > 12.5, <sup>(1,2,13)</sup> the diagnosis of cirrhosis/fibrosis can be made. Magnetic resonance elastography (MR Elastography) is indicated when the VTCE (or similar tool) shows an indeterminant value (between 8-12.5).

NAFLD refers to hepatic steatosis on imaging in an individual who drinks little to no alcohol. When there is metabolic dysfunction present (such as obesity, diabetes and/or elevated LFTs) this may be referred to as MAFLD (metabolic associated fatty liver disease) or MASH (metabolic dysfunction associated steatohepatitis). When provided, an elevated FIB-4 ( $\geq 2.67$ ) or NFS ( $\geq 0.676$ ) can be used to determine if the patient has MAFLD rather than NAFLD. <sup>(6)</sup>

## SUMMARY OF EVIDENCE

### American Gastroenterological Association Institute Guideline on the Role of Elastography in the Evaluation of Liver Fibrosis <sup>(1)</sup>

**Study Design:** This is a guideline from the American Gastroenterological Association (AGA) on the role of elastography in the evaluation of liver fibrosis.

**Target Population:** The guideline is aimed at healthcare providers managing patients with chronic liver diseases, including hepatitis C, hepatitis B, NAFLD, and chronic alcoholic liver disease.

**Key Factors:** The guideline evaluates the use of vibration-controlled transient elastography (VCTE) and magnetic resonance elastography (MRE) for diagnosing liver fibrosis and cirrhosis. It provides recommendations on liver stiffness cutoffs for diagnosing cirrhosis and advanced fibrosis and discusses the limitations and diagnostic performance of VCTE and MRE. The guideline emphasizes the importance of considering clinical context and other available information when interpreting elastography results.

## **AASLD Practice Guideline on imaging-based noninvasive liver disease assessment of hepatic fibrosis and steatosis** <sup>(2)</sup>

**Study Design:** This document is a practice guideline developed by the American Association for the Study of Liver Diseases (AASLD) on imaging-based noninvasive liver disease assessment of hepatic fibrosis and steatosis.

**Target Population:** The guidelines are intended for healthcare providers who manage patients with chronic liver disease (CLD), including adults and children with conditions such as hepatitis B, hepatitis C, NAFLD, alcohol-associated liver disease (ALD), primary sclerosing cholangitis (PSC), and primary biliary cholangitis (PBC).

**Key Factors:** The guidelines provide recommendations on the use of various imaging-based noninvasive liver disease assessments (NILDA), such as transient elastography (TE), acoustic radiation force impulse (ARFI), and magnetic resonance elastography (MRE). The document discusses the diagnostic performance of these techniques, their accuracy in staging liver fibrosis, and their use in combination with blood-based NILDA. The guidelines also address the role of NILDA in predicting fibrosis progression or regression and provide specific recommendations for different liver diseases.

## **Magnetic resonance elastography of liver current update** <sup>(3)</sup>

**Study Design:** This is a review article that discusses the current state and advancements in Magnetic Resonance Elastography (MRE) for evaluating liver stiffness and fibrosis.

**Target Population:** The review focuses on patients with chronic liver disease (CLD), including those with conditions such as hepatitis B, hepatitis C, nonalcoholic fatty liver disease (NAFLD), and other liver diseases.

**Key Factors:** The article highlights the robustness of MRE as a non-invasive imaging technique for assessing liver stiffness and fibrosis. It discusses the principles and techniques of MRE, including the use of spin echo MRE and three-dimensional MRE to reduce technical limitations. The review also covers the clinical applications of MRE, such as its use in detecting and staging liver fibrosis, evaluating treatment response, and assessing liver stiffness in various liver diseases.

# **ANALYSIS OF EVIDENCE**

## **Analysis** <sup>(1–3)</sup>:

In summary, MRE is a highly accurate and reliable tool for assessing liver fibrosis, with broad clinical applications and advantages over other non-invasive methods. However, technical limitations and the need for standardized protocols and further research are important considerations for its use in clinical practice.

## **Shared Conclusions:**

- **Accuracy and Reliability of MRE:** All three articles agree that Magnetic Resonance Elastography (MRE) is a highly accurate and reliable non-invasive imaging technique for

assessing liver fibrosis. MRE is praised for its ability to provide detailed stiffness maps of the liver, which correlate well with histological findings of fibrosis.

- **Advantages Over Other Methods:** MRE is consistently highlighted as superior to other non-invasive methods like transient elastography (TE) and serum biomarkers. It is noted for its ability to assess a larger portion of the liver and provide more comprehensive data.
- **Clinical Applications:** The articles emphasize the clinical utility of MRE in diagnosing and staging liver fibrosis in various chronic liver diseases, including hepatitis B, hepatitis C, non-alcoholic fatty liver disease (NAFLD), and alcoholic liver disease.

## POLICY HISTORY

Date	Summary
July 2025	<ul style="list-style-type: none"> <li>● Added a Summary of Evidence and Analysis of Evidence</li> </ul>
June 2025	<ul style="list-style-type: none"> <li>● Added in general information statement regarding guideline criteria development by reputable sources, standard of care, and best practices</li> <li>● Segment added to combinations studies about if the required use of conscious sedation is needed the entire combination is indicated</li> <li>● Defined BMI parameters</li> <li>● Added ELF test</li> </ul>
October 2024	<ul style="list-style-type: none"> <li>● New Evolent Clinical guideline</li> </ul>

## LEGAL AND COMPLIANCE

### Guideline Approval

#### **Committee**

**Reviewed / Approved by Evolent Specialty Services Clinical Guideline Review Committee**

#### **Disclaimer**

*Evolent Clinical Guidelines do not constitute medical advice. Treating health care professionals are solely responsible for diagnosis, treatment, and medical advice. Evolent uses Clinical Guidelines in accordance with its contractual obligations to provide utilization management. Coverage for services varies for individual members according to the terms of their health care coverage or government program. Individual members' health care coverage*



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*Evolent Clinical Guidelines are comprehensive and inclusive of various procedural applications for each service type. Our guidelines may be used to supplement Medicare criteria when such criteria is not fully established. When Medicare criteria is determined to not be fully established, we only reference the relevant portion of the corresponding Evolent Clinical Guideline that is applicable to the specific service or item requested in order to determine medical necessity.*

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