

MEDICAL POLICY

POLICY TITLE	NON-INVASIVE IMAGING FOR THE EVALUATION AND MONITORING OF PATIENTS WITH CHRONIC LIVER DISEASE
POLICY NUMBER	MP 2.252

CLINICAL BENEFIT	☒ MINIMIZE SAFETY RISK OR CONCERN. ☒ MINIMIZE HARMFUL OR INEFFECTIVE INTERVENTIONS. ☐ ASSURE APPROPRIATE LEVEL OF CARE. ☐ ASSURE APPROPRIATE DURATION OF SERVICE FOR INTERVENTIONS. ☐ ASSURE THAT RECOMMENDED MEDICAL PREREQUISITES HAVE BEEN MET. ☐ ASSURE APPROPRIATE SITE OF TREATMENT OR SERVICE.
Effective date:	10/1/2026

POLICY

Transient elastography (FibroScan) imaging may be considered **medically necessary** for the evaluation of individuals with chronic liver disease.

Transient elastography (FibroScan) is considered **investigational** for monitoring patients with chronic liver disease. There is insufficient evidence to support a general conclusion concerning the health outcomes or benefits associated with this procedure.

The use of other noninvasive imaging, including but not limited to acoustic radiation force impulse imaging (ARFI; e.g., Acuson S2000), or real-time tissue elastography, is considered **investigational** for the evaluation or monitoring of individuals with chronic liver disease. There is insufficient evidence to support a general conclusion concerning the health outcomes or benefits associated with this procedure.

POLICY GUIDELINES

Increased fibrosis stage has important prognostic implications in nonalcoholic fatty liver disease (NAFLD) (now metabolic dysfunction-associated steatotic liver disease, MASLD, see Background).

The American Association for the Study of Liver Diseases (AASLD) has developed an algorithm intended to be used by clinicians in need of a readily available and simple decision support tool for liver disease assessment (see below). The AASLD recommends that fibrosis staging begin with nonproprietary blood-based tests because of their wide availability and performance compared to proprietary tests. Nonproprietary tests include the Fibrosis-4 (FIB-4) Index, and NAFLD/NASH fibrosis score (NFS) which are used as initial blood-based tests to rule-out advanced fibrosis. The fibrosis 4 (FIB-4) Index calculator estimates the likelihood of advanced liver fibrosis (scarring) by combining a patient's age with aspartate aminotransferase (AST), alanine aminotransferase (ALT), and platelet count values. A low FIB-4 score (typically <1.3 or <1.45) suggests a low risk of advanced fibrosis, while a high score (typically >2.67 or >3.25) indicates a high risk and may warrant further assessment, potentially a liver biopsy.

The NFS score is calculated using a formula that considers the following factors: age, body mass index (BMI), diabetes status, and blood test results (AST/ALT ratio, albumin, platelet count). The NFS is interpreted as follows:

- Score <-1.455: Low risk of advanced fibrosis

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- Score between -1.455 and 0.676: Indeterminate risk
- Score >0.676: High risk of advanced fibrosis

The AASLD Practice Guidelines Committee commissioned a diverse group of experts across multiple disciplines in the field of adult and pediatric liver disease to develop guidelines and guidance statements along with a systematic review covering blood-based noninvasive tests to address specific clinically focused questions. Of these tests, FIB-4 was considered to have superior performance, particularly for the identification of F3-4 stages of fibrosis, which is the spectrum of fibrosis for which the tests were designed. NFS was considered an equivalent to FIB-4 in patients with NAFLD in the assessment of advanced fibrosis. FIB-4 thresholds of ≤ 1.30 and ≥ 2.67 , and NFS thresholds of ≤ -1.455 and ≥ 0.676 , have been proposed as having higher predictive values for F3-4 in NAFLD. The AASLD recommends that in the appropriate clinical setting (i.e., low pre-test probability), both tests should suffice to rule out significant/advanced fibrosis.

Confirmatory testing (secondary assessment) such as noninvasive imaging technologies should be performed for patients with values between the lower and upper thresholds of these tests. Patients with FIB-4 scores less than 1.3 are unlikely to have advanced fibrosis. High-risk individuals, such as those with type 2 diabetes, medically complicated obesity, family history of cirrhosis, or more than mild alcohol consumption, should be screened for advanced fibrosis.

The AASLD Practice Guidelines Committee made an ungraded statement that in adults with CLD, either ultrasound-based elastography methods or magnetic resonance elastography (MRE) can be utilized to stage fibrosis. Depending on local availability and expertise, it is reasonable to perform MRE as an investigation when concomitant cross-sectional imaging is needed or for patients in whom the accuracy of US-based elastography might be compromised.

PRODUCT VARIATIONS

This policy is only applicable to certain programs and products administered by Capital Blue Cross and subject to benefit variations. Please see additional information below.

FEP PPO - Refer to FEP Medical Policy Manual. The FEP Medical Policy manual can be found at:

<https://www.fepblue.org/benefit-plans/medical-policies-and-utilization-management-guidelines/medical-policies>

DESCRIPTION/BACKGROUND

Biopsy for Chronic Liver Disease

The diagnosis of non-neoplastic liver disease is often made from needle biopsy samples. In addition to establishing a disease etiology, liver biopsy can determine the degree of inflammation present and can stage the degree of fibrosis. The degree of inflammation and fibrosis may be assessed by different scoring schemes. Most of these scoring schemes grade

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inflammation from 0 to 4 (0 = no or minimal inflammation, 4 = severe) and fibrosis from 0 to 4 (0 = no fibrosis, 4 = cirrhosis). There are several limitations to liver biopsy, including its invasive nature, small tissue sample size, and subjective grading system. Regarding small tissue sample size, liver fibrosis can be patchy and thus missed on a biopsy sample, which includes only 0.002% of the liver tissue. A noninvasive alternative to liver biopsy would be particularly helpful, both to initially assess patients and then as a monitoring tool to assess response to therapy. The implications of using liver biopsy as a reference standard are discussed in the Rationale.

Hepatitis C Virus

Infection with hepatitis C virus (HCV) can lead to permanent liver damage. In a subset of patient with chronic HCV, a liver biopsy may be necessary before the initiation of antiviral therapy. Repeat biopsies used to be performed to monitor fibrosis progression but have not been deemed necessary since the introduction of high-efficiency direct antiviral therapy. Liver biopsies are analyzed according to a histologic scoring system; the most commonly used one for hepatitis C is the Metavir scoring system, which scores the presence and degree of inflammatory activity and fibrosis. The fibrosis is graded from F0 to F4, with a Metavir score of F0 signifying no fibrosis and F4 signifying cirrhosis (which is defined as the presence throughout the liver of fibrous septa that subdivide the liver parenchyma into nodules and represents the final and irreversible form of disease). The stage of fibrosis is the most important single predictor of morbidity and mortality in patients with hepatitis C.

Biopsies for hepatitis C are also evaluated according to the degree of inflammation present, referred to as the grade or activity level. For example, the Metavir system includes scores for necroinflammatory activity ranging from A0 to A3 (A0 = no activity, A1 = minimal activity, A2 = moderate activity, A3 = severe activity).

Hepatitis B Virus

Most people who become infected with hepatitis B virus (HBV) recover fully but a small portion will develop chronic HBV, which cause lead to permanent liver damage. As with HCV, identification of liver fibrosis is needed to determine timing and management of treatment, and liver biopsy is the criterion standard for staging fibrosis. The grading of fibrosis in HBV also uses the Metavir system.

Alcoholic Liver Disease

Alcoholic liver disease (ALD) is the leading cause of liver disease in most Western countries. Histologic features of ALD usually include steatosis, alcoholic steatohepatitis (ASH), hepatocyte necrosis, Mallory bodies (tangled proteins seen in degenerating hepatocytes), a large polymorphonuclear inflammatory infiltrate, and, with continued alcohol abuse, fibrosis and possibly cirrhosis. The grading of fibrosis is similar to the scoring system used in hepatitis C. The commonly used Laënnec scoring system uses grades 0 to 4, with 4 being cirrhosis.

Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) Metabolic dysfunction-associated steatotic liver disease (MASLD), formerly termed nonalcoholic fatty liver disease (NAFLD), is characterized by hepatic steatosis in individuals without significant alcohol consumption or other secondary causes of liver fat accumulation. MASLD is strongly associated

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with metabolic risk factors such as obesity, type 2 diabetes mellitus, dyslipidemia, and hypertension. The condition encompasses a spectrum ranging from simple steatosis—typically considered non-progressive and without significant inflammation—to metabolic dysfunction-associated steatohepatitis (MASH), previously referred to as nonalcoholic steatohepatitis (NASH). MASH is a more severe phenotype marked by hepatocellular injury, ballooning degeneration, lobular inflammation, and varying degrees of fibrosis, which can ultimately progress to cirrhosis and hepatocellular carcinoma. Liver biopsy remains the reference standard for distinguishing MASH from isolated steatosis, although noninvasive biomarkers and imaging modalities are increasingly used to risk-stratify patients. The revised nomenclature and diagnostic criteria, endorsed by multiple international liver societies in 2023, emphasize the central role of metabolic dysfunction in disease pathogenesis. A variety of histologic scoring systems have been used to evaluate NAFLD. The NAFLD activity score (NAS) system for NASH includes scores for steatosis (0-3), lobular inflammation (0-3), and ballooning (0-2). Cases with scores of 5 or greater are considered NASH, while cases with scores of 3 and 4 are considered borderline (probable or possible) NASH. The grading of fibrosis is similar to the scoring system used in hepatitis C. The commonly used Laënnec scoring system uses grades 0 to 4, with 4 being cirrhosis.

NONINVASIVE ALTERNATIVES TO LIVER BIOPSY NONINVASIVE IMAGING TECHNOLOGIES

Noninvasive imaging technologies to detect liver fibrosis or cirrhosis among patients with chronic liver disease are also being evaluated as alternatives to liver biopsy. The noninvasive imaging technologies include transient elastography (e.g., FibroScan), magnetic resonance elastography, acoustic radiation force impulse imaging (ARFI, e.g., Acuson S2000), and real-time tissue elastography (e.g., HI VISION Preirus). Noninvasive imaging tests have been used in combination with multianalyte serum tests such as FibroTest or FibroSURE with FibroScan.

Transient Elastography

Vibration-controlled transient elastography (Fibroscan®) is the most commonly used imaging-based fibrosis assessment method in the United States. It can be performed at bedside in an ambulatory office setting, is rapid to perform, has a wide range of scores (2.5–75 kPa), is associated with acceptable intra-observer and inter-observer reproducibility, and has been validated in large cohorts worldwide in a spectrum of liver diseases, including hepatitis B, hepatitis C, fatty liver disease, and autoimmune liver disorders, among others. FibroScan uses a mechanical vibrator to produce mild amplitude and low-frequency (50 Hz) waves, inducing an elastic shear wave that propagates throughout the liver. Ultrasound (US) tracks the wave, measuring its speed in kilopascals, which correlates with liver stiffness. Increases in liver fibrosis also increase liver stiffness and resistance of liver blood flow. Transient elastography does not perform as well in patients with ascites, higher body mass index, or narrow intercostal margins. Although FibroScan may be used to measure fibrosis (unlike liver biopsy), it does not provide information on necroinflammatory activity and steatosis, nor is it accurate during acute hepatitis or hepatitis exacerbations.

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Acoustic Radiation Force Impulse Imaging

ARFI uses an US probe to produce an acoustic “push” pulse, which generates shear waves that propagate in tissue to assess liver stiffness. ARFI elastography evaluates the wave propagation speed (measured in meters per second) to assess liver stiffness. The faster the shear wave speed, the harder the object. ARFI technologies include Virtual Touch Quantification and Siemens Acuson S2000 system. ARFI elastography can be performed at the same time as a liver sonographic evaluation, even in patients with a significant amount of ascites.

Real-Time Tissue Elastography

Real-time tissue elastography is a type of strain elastography that uses a combined autocorrelation method to measure tissue strain caused by manual compression or a person's heartbeat. The relative tissue strain is displayed on conventional color B mode US images in real time. Hitachi manufactures the real-time tissue elastography devices, including one called HI VISION Preirus. The challenge is to identify a region of interest while avoiding areas likely to introduce artifacts, such as large blood vessels, the area near the ribs, and the surface of the liver. Areas of low strain increase as fibrosis progresses and strain distribution becomes more complex. Various subjective and quantitative methods have been developed to evaluate the results. Real-time tissue elastography can be performed in patients with ascites or inflammation. This technology does not perform as well in severely obese individuals.

REGULATORY STATUS

In November 2008, Acuson S2000™ Virtual Touch (Siemens AG, Erlanger, Germany), which provides acoustic radiation force impulse imaging, was cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process (K072786).

In August 2009, AIXPLORER® Ultrasound System (SuperSonic Imagine, Aix en Provence, France), which provides shear wave elastography, was cleared for marketing by FDA through the 510(k) process (K091970).

In June 2010, Hitachi HI VISION™ Preirus™ Diagnostic Ultrasound Scantier (Hitachi Medical Systems America, Twinsburg, OH), which provides real-time tissue elastography, was cleared for marketing by FDA through the 510(k) process (K093466).

In April 2013, FibroScan® (EchoSens, Paris, France), which uses transient elastography, was cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process (K123806).

In February 2017, ElastQ Imaging shear wave elastography (Royal Phillips, Amsterdam, the Netherlands) was cleared for marketing by FDA through the 510(k) process (K163120).

FDA product code: IYO.

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AMERICAN GASTROENTEROLOGICAL ASSOCIATION ET AL

In 2018, the practice guidelines on the diagnosis and management of nonalcoholic fatty liver disease (NAFLD), developed by the American Gastroenterological Association (AGA), the American Association for the Study of Liver Diseases (AASLD), and the American College of Gastroenterology, stated that “NFS [NAFLD fibrosis score] or FIB-4 [Fibrosis-4] index are clinically useful tools for identifying NAFLD patients with a higher likelihood of having bridging fibrosis (stage 3) or cirrhosis (stage 4). This guideline also cited vibration-controlled transient elastography (VCTE) and magnetic resonance elastography (MRE) as “clinically useful tools for identifying advanced fibrosis in patients with NAFLD.”

A 2022 consensus-based clinical care pathway was published by the AGA on risk stratification and management of NAFLD, including some recommendations regarding the use of non-invasive testing for individuals with chronic liver disease. Among individuals with increased risk of NAFLD or nonalcoholic steatohepatitis (NASH)-related fibrosis (i.e., individuals with type-2 diabetes, ≥ 2 metabolic risk factors, or an incidental finding of hepatic steatosis or elevated aminotransferases), assessment with a nonproprietary fibrosis scoring system such as FIB-4 is recommended, although aspartate transaminase to platelet ratio index can be used in lieu of FIB-4 scoring. Depending on the fibrosis score, imaging-based testing for liver stiffness may be warranted with transient elastography (FibroScan), although bidimensional shear wave elastography or point shear wave elastography are also imaging options included in the clinical care pathway.

In 2023, the AGA published an expert review on the role of noninvasive tests [NITs] in the evaluation and management of NAFLD. The following practice advice statements were made.

- "A Fibrosis 4 Index score [FIB-4] < 1.3 is associated with strong negative predictive value for advanced hepatic fibrosis and may be useful for exclusion of advanced hepatic fibrosis in patients with NAFLD
- A combination of 2 or more NITs combining serum biomarkers and/or imaging-based biomarkers is preferred for staging and risk stratification of patients with NAFLD whose Fibrosis 4 Index score [FIB-4] is > 1.3
- Use of NITs in accordance with manufacturer's specifications can minimize risk of discordant results and adverse events
- NITs should be interpreted with context and consideration of pertinent clinical data...to optimize positive predictive value in the identification of patients with advanced fibrosis
- Liver biopsy should be considered for patients with NIT results that are indeterminate or discordant; conflict with other clinical, laboratory, or radiologic findings; or when alternative etiologies for liver disease are suspected
- Serial longitudinal monitoring using NITs for assessment of disease progression or regression may inform clinical management

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- Patients with NAFLD and NITs results suggestive of advanced fibrosis or cirrhosis should be considered for surveillance of liver complications...Patients with NAFLD and NITs suggestive of advanced hepatic fibrosis should be monitored with serial liver stiffness measurement; vibration controlled transient elastography; or magnetic resonance elastography, given its correlation with clinically significant portal hypertension and clinical decompensation."

AMERICAN ASSOCIATION FOR THE STUDY OF LIVER DISEASES (AASLD)

A 2023 updated practice guidance focused on the clinical assessment and management NAFLD and hepatic steatosis issued by the AASLD included the following guidance statements on the use of noninvasive techniques for diagnosis and management of NAFLD and hepatic steatosis.

- All patients with hepatic steatosis or clinically suspected NAFLD based on the presence of obesity and metabolic risk factors should undergo primary risk assessment with FIB-4
- In patients with pre-DM [diabetes mellitus], T2DM, or 2 or more metabolic risk factors (or imaging evidence of hepatic steatosis), primary risk assessment with FIB-4 should be repeated every 1–2 years
- Although standard ultrasound can detect hepatic steatosis, it is not recommended as a tool to identify hepatic steatosis due to low sensitivity across the NAFLD spectrum
- CAP [controlled attenuation parameter] as a point-of-care technique may be used to identify steatosis. MRI-PDFF [proton density fat fraction] can additionally quantify steatosis
- If FIB-4 is ≥ 1.3 , VCTE, MRE, or ELF [Enhanced Liver Fibrosis] may be used to exclude advanced fibrosis
- Improvement in ALT or reduction in liver fat content by imaging in response to an intervention can be used as a surrogate for histological improvement in disease activity

The 2023 guidance recommend that patients with hepatic steatosis or NAFLD/MASLD based on the presence of obesity and metabolic risk factors should undergo primary risk assessment with FIB-4 index as this is considered the most valid noninvasive test. Patients with FIB-4 scores less than 1.3 are unlikely to have advanced fibrosis. High-risk individuals, such as those with type 2 diabetes, medically complicated obesity, family history of cirrhosis, or more than mild alcohol consumption, should be screened for advanced fibrosis. VCTE or ultrasound-based methods such as ARFI are favored over MRE, as initial secondary assessments due to cost considerations. The ELF test is approved for prognostication when advanced fibrosis is suspected, although it can be ordered for secondary risk assessment, particularly because the availability of elastography may be limited in some settings.

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A 2024 publication from the AASLD describes the impact of new nomenclature on the AASLD practice guidance on NAFLD and hepatic steatosis described above. Briefly, available data suggest a near complete overlap (99%) between the metabolic dysfunction-associated steatotic liver disease (MASLD)-defined population and the historical NAFLD-defined population. Therefore, all recommendations on the clinical assessment and management of NAFLD AND NASH can be applied to patients with MASLD and metabolic-dysfunction associated steatohepatitis (MASH). Additionally, data from biomarker validation studies among patients with NAFLD and NASH are applicable to patients with MASLD and MASH, respectively, until further guidance

A 2022 joint clinical practice guideline issued by the American Association of Clinical Endocrinology and AASLD included the following recommendations on the use of noninvasive techniques for diagnosis of NAFLD with clinically significant fibrosis (stage F2 to F4)

- Clinicians should use liver fibrosis prediction calculations to assess the risk of NAFLD with liver fibrosis. The preferred noninvasive initial test is the FIB-4 (Grade B, Level 2 evidence)
- High-risk individuals with indeterminate or high FIB-4 score for further workup with an transient elastography or enhanced liver fibrosis test, as available (Grade B, Level 2 evidence)
- Clinicians should prefer the use of transient elastography as best validated to identify advanced disease and predict liver-related outcomes. Alternative imaging approaches may be considered, including shear wave elastography (less well validated) and/or magnetic resonance elastography (most accurate but with a high cost and limited availability; best if ordered by liver specialist for selected cases) (Grade B, Level 2 evidence).

RATIONALE

SUMMARY OF EVIDENCE

For individuals who have chronic liver disease who receive transient elastography, the evidence includes many systematic reviews of more than 50 observational studies (>10,000 patients). Relevant outcomes are test accuracy and validity, morbid events, and treatment-related morbidity. Transient elastography (FibroScan) has been studied in populations with viral hepatitis, nonalcoholic fatty liver disease, and alcoholic liver disease. There are varying cutoffs for positivity. Failures of the test are not uncommon, particularly for those with high body mass index, but these failures often went undetected in analyses of the validation studies. Given these limitations and the imperfect reference standard, it can be difficult to interpret performance characteristics. However, for the purposes of deciding whether a patient has severe fibrosis or cirrhosis, the FibroScan results provide data sufficiently useful to determine therapy. In fact, FibroScan has been used as an alternative to biopsy to establish eligibility regarding the presence of fibrosis or cirrhosis in the participants of several RCTs. These RCTs showed the

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efficacy of hepatitis C virus treatments, which in turn demonstrated that the test can identify patients who would benefit from therapy. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have chronic liver disease who receive noninvasive radiologic methods other than transient elastography for liver fibrosis measurement, the evidence includes systematic reviews of observational studies. Relevant outcomes are test accuracy and validity, morbid events, and treatment-related morbidity. Other radiologic methods (e.g., magnetic resonance elastography, real-time transient elastography, acoustic radiation force impulse imaging) may have similar performance for detecting significant fibrosis or cirrhosis. Studies have frequently included varying cutoffs not prespecified or validated. Given these limitations and the imperfect reference standard, it is difficult to interpret performance characteristics. There is no direct evidence that other noninvasive radiologic methods improve health outcomes; further, it is not possible to construct a chain of evidence for clinical utility due to the lack of sufficient evidence on clinical validity. The evidence is insufficient to determine the effects of the technology on health outcomes.

DEFINITIONS

N/A

DISCLAIMER

Capital Blue Cross' medical policies are used to determine coverage for specific medical technologies, procedures, equipment, and services. These medical policies do not constitute medical advice and are subject to change as permitted by law or applicable clinical evidence from independent treatment guidelines. Treating providers are solely responsible for medical advice and treatment of members. These policies are not a guarantee of coverage or payment. Payment of claims is subject to a determination regarding the member's benefit program and eligibility on the date of service, and a determination that the services are medically necessary and appropriate. Final processing of a claim is based upon the terms of contract that applies to the members' benefit program, including benefit limitations and exclusions. If a provider or a member has a question concerning this medical policy, please contact Capital Blue Cross' Provider Services or Member Services.

CODING INFORMATION

Note: This list of codes may not be all-inclusive, and codes are subject to change at any time. The identification of a code in this section does not denote coverage as coverage is determined by the terms of member benefit information. In addition, not all covered services are eligible for separate reimbursement.

Covered when **medically necessary**

Procedure Codes						
76981	76982	76983	91200			

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ICD-10-CM Diagnosis Codes	Description
B18.0	Chronic viral hepatitis B with delta-agent
B18.1	Chronic viral hepatitis B without delta-agent
B18.2	Chronic viral hepatitis C
B18.8	Other chronic viral hepatitis
K70.0	Alcoholic fatty liver
K70.2	Alcoholic fibrosis and sclerosis of liver
K73.0	Chronic persistent hepatitis, not elsewhere classified
K73.1	Chronic lobular hepatitis, not elsewhere classified
K73.2	Chronic active hepatitis, not elsewhere classified
K74.0A	Hepatic fibrosis, moderate fibrosis
K74.0	Hepatic fibrosis
K74.00	Hepatic fibrosis, unspecified
K74.01	Hepatic fibrosis, early fibrosis
K74.02	Hepatic fibrosis, advanced fibrosis
K74.1	Hepatic sclerosis
K74.2	Hepatic fibrosis with hepatic sclerosis
K74.3	Primary biliary cirrhosis
K74.4	Secondary biliary cirrhosis
K74.69	Other cirrhosis of liver
K75.4	Autoimmune hepatitis
K75.81	Nonalcoholic steatohepatitis (NASH)
K76.0	Fatty (change of) liver, not elsewhere classified
K76.82	Hepatic encephalopathy
K76.83	Intestinal failure-associated liver disease

REFERENCES

1. Regev A, Berho M, Jeffers LJ, et al. Sampling error and intraobserver variation in liver biopsy in patients with chronic HCV infection. *Am J Gastroenterol.* Oct 2002; 97(10):2614-2618. PMID 12385448.
2. Rockey DC, Caldwell SH, Goodman ZD, et al. Liver biopsy. *Hepatology.* Mar 2009;49(3):1017-1044. PMID 19243014.
3. Mehta SH, Lau B, Afdhal NH, et al. Exceeding the limits of liver histology markers. *J Hepatol.* Jan 2009; 50(1):36-41. PMID 19012989.

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4. Trikalinos TA, Balion CM. Chapter 9: options for summarizing medical test performance in the absence of a gold standard. *J Gen Intern Med.* Jun 2012; 27(Suppl 1): S67-75. PMID 22648677.
5. Crossan C, Tsochatzis EA, Longworth L, et al. Cost-effectiveness of non-invasive methods for assessment and monitoring of liver fibrosis and cirrhosis in patients with chronic liver disease: systematic review and economic evaluation. *Health Technol Assess.* Jan 2015; 19(9):1-409, v-vi. PMID 25633908.
6. Houot M, Ngo Y, Munteanu M, et al. Systematic review with meta-analysis: direct comparisons of biomarkers for the diagnosis of fibrosis in chronic hepatitis C and B. *Aliment Pharmacol Ther.* Jan 2016; 43(1):16-29. PMID 26516104.
7. Imbert-Bismut F, Ratziu V, Pieroni L, et al. Biochemical markers of liver fibrosis in patients with hepatitis C virus infection: a prospective study. *Lancet.* Apr 7 2001; 357(9262):1069-1075. PMID 11297957.
8. Poynard T, McHutchison J, Manns M, et al. Biochemical surrogate markers of liver fibrosis and activity in a randomized trial of peginterferon alfa-2b and ribavirin. *Hepatology.* Aug 2003; 38(2):481-492. PMID 12883493.
9. Poynard T, Munteanu M, Imbert-Bismut F, et al. Prospective analysis of discordant results between biochemical markers and biopsy in patients with chronic hepatitis C. *Clin Chem.* Aug 2004; 50(8):1344-1355. PMID 15192028.
10. Afdhal NH, Nunes D. Evaluation of liver fibrosis: a concise review. *Am J Gastroenterol.* Jun 2004; 99(6):1160-1174. PMID 15180741.
11. Lichtinghagen R, Bahr MJ. Noninvasive diagnosis of fibrosis in chronic liver disease. *Expert Rev Mol Diagn.* Sep 2004; 4(5):715-726. PMID 15347264.
12. Rossi E, Adams L, Prins A, et al. Validation of the FibroTest biochemical markers score in assessing liver fibrosis in hepatitis C patients. *Clin Chem.* Mar 2003; 49(3):450-454. PMID 12600957.
13. Poynard T, de Ledinghen V, Zarski JP, et al. Relative performances of FibroTest, Fibroscan, and biopsy for the assessment of the stage of liver fibrosis in patients with chronic hepatitis C: a step toward the truth in the absence of a gold standard. *J Hepatol.* Mar 2012; 56(3):541-548. PMID 21889468.
14. Afdhal N, Reddy KR, Nelson DR, et al. Ledipasvir and sofosbuvir for previously treated HCV genotype 1 infection. *N Engl J Med.* Apr 17 2014; 370(16):1483-1493. PMID 24725238.
15. Afdhal N, Zeuzem S, Kwo P, et al. Ledipasvir and sofosbuvir for untreated HCV genotype 1 infection. *N Engl J Med.* May 15 2014; 370(20):1889-1898. PMID 24725239.
16. Curry MP, O'Leary JG, Bzowej N, et al. Sofosbuvir and velpatasvir for HCV in patients with decompensated cirrhosis. *N Engl J Med.* Dec 31 2015; 373(27):2618-2628. PMID 26569658.
17. Foster GR, Afdhal N, Roberts SK, et al. Sofosbuvir and velpatasvir for HCV genotype 2 and 3 infection. *N Engl J Med.* Dec 31 2015; 373(27):2608-2617. PMID 26575258.
18. Kowdley KV, Gordon SC, Reddy KR, et al. Ledipasvir and sofosbuvir for 8 or 12 weeks for chronic HCV without cirrhosis. *N Engl J Med.* May 15 2014; 370(20):1879-1888. PMID 24720702.

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19. Zeuzem S, Dusheiko GM, Salupere R, et al. Sofosbuvir and ribavirin in HCV genotypes 2 and 3. *N Engl J Med*. May 22 2014; 370(21):1993-2001. PMID 24795201.
20. Naveau S, Raynard B, Ratzu V, et al. Biomarkers for the prediction of liver fibrosis in patients with chronic alcoholic liver disease. *Clin Gastroenterol Hepatol*. Feb 2005; 3(2):167-174. PMID 15704051.
21. Ratzu V, Massard J, Charlotte F, et al. Diagnostic value of biochemical markers (FibroTest-FibroSURE) for the prediction of liver fibrosis in patients with non-alcoholic fatty liver disease. *BMC Gastroenterol*. 2006; 6:6. PMID 16503961.
22. Lassailly G, Caiazzo R, Hollebecque A, et al. Validation of noninvasive biomarkers (FibroTest, SteatoTest, and NashTest) for prediction of liver injury in patients with morbid obesity. *Eur J Gastroenterol Hepatol*. Jun 2011; 23(6):499-506. PMID 21499110.
23. Mohamadnejad M, Montazeri G, Fazlollahi A, et al. Noninvasive markers of liver fibrosis and inflammation in chronic hepatitis B-virus related liver disease. *Am J Gastroenterol*. Nov 2006; 101(11):2537-2545. PMID 17029616.
24. Zeng MD, Lu LG, Mao YM, et al. Prediction of significant fibrosis in HBeAg-positive patients with chronic hepatitis B by a noninvasive model. *Hepatology*. Dec 2005; 42(6):1437-1445. PMID 16317674.
25. Park MS, Kim BK, Cheong JY, et al. Discordance between liver biopsy and FibroTest in assessing liver fibrosis in chronic hepatitis B. *PLoS One*. Feb 2013; 8(2): e55759. PMID 23405210.
26. Salkic NN, Jovanovic P, Hauser G, et al. FibroTest/Fibrosure for significant liver fibrosis and cirrhosis in chronic hepatitis B: a meta-analysis. *Am J Gastroenterol*. Jun 2014;109(6):796-809. PMID 24535095.
27. Xu XY, Kong H, Song RX, et al. The effectiveness of noninvasive biomarkers to predict hepatitis B-related significant fibrosis and cirrhosis: a systematic review and meta-analysis of diagnostic test accuracy. *PLoS One*. Jun 25 2014; 9(6): e100182. PMID 24964038.
28. Wai CT, Cheng CL, Wee A, et al. Non-invasive models for predicting histology in patients with chronic hepatitis B. *Liver Int*. Aug 2006;26(6):666-672. PMID 16842322.
29. Patel K, Gordon SC, Jacobson I, et al. Evaluation of a panel of non-invasive serum markers to differentiate mild from moderate-to-advanced liver fibrosis in chronic hepatitis C patients. *J Hepatol*. Dec 2004; 41(6):935-942. PMID 15582126.
30. Christensen C, Bruden D, Livingston S, et al. Diagnostic accuracy of a fibrosis serum panel (FIBROSpect II) compared with Knodell and Ishak liver biopsy scores in chronic hepatitis C patients. *J Viral Hepat*. Oct 2006; 13(10):652-658. PMID 16970596.
31. Mehta P, Ploutz-Snyder R, Nandi J, et al. Diagnostic accuracy of serum hyaluronic acid, FIBROSpect II, and YKL-40 for discriminating fibrosis stages in chronic hepatitis C. *Am J Gastroenterol*. Apr 2008; 103(4):928-936. PMID 18371145.
32. Patel K, Nelson DR, Rockey DC, et al. Correlation of FIBROSpect II with histologic and morphometric evaluation of liver fibrosis in chronic hepatitis C. *Clin Gastroenterol Hepatol*. Feb 2008; 6(2):242-247. PMID 18187364.
33. Snyder N, Nguyen A, Gajula L, et al. The APRI may be enhanced by the use of the FIBROSpect II in the estimation of fibrosis in chronic hepatitis C. *Clin Chim Acta*. Jun 2007; 381(2):119-123. PMID 17442291.

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34. Wai CT, Greenson JK, Fontana RJ, et al. A simple noninvasive index can predict both significant fibrosis and cirrhosis in patients with chronic hepatitis C. *Hepatology*. Aug 2003; 38(2):518-526. PMID 12883497.
35. Giannini EG, Zaman A, Ceppa P, et al. A simple approach to noninvasively identifying significant fibrosis in chronic hepatitis C patients in clinical practice. *J Clin Gastroenterol*. Jul 2006; 40(6):521-527. PMID 16825935.
36. Bourliere M, Penaranda G, Renou C, et al. Validation and comparison of indexes for fibrosis and cirrhosis prediction in chronic hepatitis C patients: proposal for a pragmatic approach classification without liver biopsies. *J Viral Hepat*. Oct 2006; 13(10):659-670. PMID 16970597.
37. Zarski JP, Sturm N, Guechot J, et al. Comparison of nine blood tests and transient elastography for liver fibrosis in chronic hepatitis C: the ANRS HCEP-23 study. *J Hepatol*. Jan 2012; 56(1):55-62. PMID 21781944.
38. Sebastiani G, Halfon P, Castera L, et al. SAFE biopsy: a validated method for large-scale staging of liver fibrosis in chronic hepatitis C. *Hepatology*. Jun 2009; 49(6):1821-1827. PMID 19291784.
39. Boursier J, de Ledinghen V, Zarski JP, et al. Comparison of eight diagnostic algorithms for liver fibrosis in hepatitis C: new algorithms are more precise and entirely noninvasive. *Hepatology*. Jan 2012; 55(1):58-67. PMID 21898504.
40. Rosenberg WM, Voelker M, Thiel R, et al. Serum markers detect the presence of liver fibrosis: a cohort study. *Gastroenterology*. Dec 2004; 127(6):1704-1713. PMID 15578508.
41. Siemens Healthineers. Liver Fibrosis Assays: Enhanced Liver Fibrosis (ELF) Test. 2019.
42. Sterling RK, Lissen E, Clumeck N et al. Development of a simple noninvasive index to predict significant fibrosis in patients with HIV/HCV coinfection. *Hepatology*, 2006 May 27; 43(6). PMID 16729309.
43. Vallet-Pichard A, Mallet V, Nalpas B et al. FIB-4: an inexpensive and accurate marker of fibrosis in HCV infection. comparison with liver biopsy and fibrotest. *Hepatology*, 2007 Jun 15; 46(1). PMID 17567829.
44. Angulo P, Bugianesi E, Bjornsson ES et al. Simple noninvasive systems predict long-term outcomes of patients with nonalcoholic fatty liver disease. *Gastroenterology*, 2013 Jul 19; 145(4). PMID 23860502.
45. Sanyal AJ, Harrison SA, Ratziu V et al. The Natural History of Advanced Fibrosis Due to Nonalcoholic Steatohepatitis: Data From the Simtuzumab Trials. *Hepatology*, 2019 Apr 18. PMID 30993748.
46. National Institute for Health and Care Excellence (NICE). Non-alcoholic fatty liver disease (NAFLD): assessment and management [NG49]. 2016
47. Brener S. Transient elastography for assessment of liver fibrosis and steatosis: an evidence-based analysis. *Ont Health Technol Assess Ser*. Dec 2015; 15(18):1-45. PMID 26664664.
48. Bota S, Herkner H, Sporea I, et al. Meta-analysis: ARFI elastography versus transient elastography for the evaluation of liver fibrosis. *Liver Int*. Sep 2013; 33(8):1138-1147. PMID 23859217.

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49. Chon YE, Choi EH, Song KJ, et al. Performance of transient elastography for the staging of liver fibrosis in patients with chronic hepatitis B: a meta-analysis. *PLoS One*. Oct 2012; 7(9): e44930. PMID 23049764.
50. Friedrich-Rust M, Ong MF, Martens S, et al. Performance of transient elastography for the staging of liver fibrosis: a meta-analysis. *Gastroenterology*. Apr 2008; 134(4):960-974. PMID 18395077.
51. Kwok R, Tse YK, Wong GL, et al. Systematic review with meta-analysis: non-invasive assessment of non-alcoholic fatty liver disease--the role of transient elastography and plasma cytokeratin-18 fragments. *Aliment Pharmacol Ther*. Feb 2014; 39(3):254-269. PMID 24308774.
52. Poynard T, Morra R, Ingiliz P, et al. Assessment of liver fibrosis: noninvasive means. *Saudi J Gastroenterol*. Oct 2008; 14(4):163-173. PMID 19568532.
53. Poynard T, Ngo Y, Munteanu M, et al. Noninvasive markers of hepatic fibrosis in chronic hepatitis B. *Curr Hepat Rep*. Jun 2011;10(2):87-97. PMID 21654911.
54. Shaheen AA, Wan AF, Myers RP. FibroTest and FibroScan for the prediction of hepatitis C-related fibrosis: a systematic review of diagnostic test accuracy. *Am J Gastroenterol*. Nov 2007; 102(11):2589-2600. PMID 17850410.
55. Shi KQ, Tang JZ, Zhu XL, et al. Controlled attenuation parameter for the detection of steatosis severity in chronic liver disease: a meta-analysis of diagnostic accuracy. *J Gastroenterol Hepatol*. Jun 2014; 29(6):1149-1158. PMID 24476011.
56. Steadman R, Myers RP, Leggett L, et al. A health technology assessment of transient elastography in adult liver disease. *Can J Gastroenterol*. Mar 2013; 27(3):149-158. PMID 23516679.
57. Stebbing J, Farouk L, Panos G, et al. A meta-analysis of transient elastography for the detection of hepatic fibrosis. *J Clin Gastroenterol*. Mar 2010; 44(3):214-219. PMID 19745758.
58. Talwalkar JA, Kurtz DM, Schoenleber SJ, et al. Ultrasound-based transient elastography for the detection of hepatic fibrosis: systematic review and meta-analysis. *Clin Gastroenterol Hepatol*. Oct 2007; 5(10):1214-1220. PMID 17916549.
59. Tsochatzis EA, Gurusamy KS, Ntaoula S, et al. Elastography for the diagnosis of severity of fibrosis in chronic liver disease: a meta-analysis of diagnostic accuracy. *J Hepatol*. Apr 2011; 54(4):650-659. PMID 21146892.
60. Tsochatzis EA, Crossan C, Longworth L, et al. Cost-effectiveness of noninvasive liver fibrosis tests for treatment decisions in patients with chronic hepatitis C. *Hepatology*. Sep 2014; 60(3):832-843. PMID 25043847.
61. Friedrich-Rust M, Nierhoff J, Lupsor M, et al. Performance of Acoustic Radiation Force Impulse imaging for the staging of liver fibrosis: a pooled meta-analysis. *J Viral Hepat*. Feb 2012; 19(2):e212-219. PMID 22239521.
62. Geng XX, Huang RG, Lin JM, et al. Transient elastography in clinical detection of liver cirrhosis: A systematic review and meta-analysis. *Saudi J Gastroenterol*. Jul-Aug 2016; 22(4):294-303. PMID 27488324.
63. Jiang W, Huang S, Teng H, et al. Diagnostic accuracy of point shear wave elastography and transient elastography for staging hepatic fibrosis in patients with non-alcoholic fatty liver disease: a meta-analysis. *BMJ Open*. Aug 23 2018; 8(8):e021787. PMID 30139901.

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64. Li Y, Huang YS, Wang ZZ, et al. Systematic review with meta-analysis: the diagnostic accuracy of transient elastography for the staging of liver fibrosis in patients with chronic hepatitis B. *Aliment Pharmacol Ther.* Feb 2016; 43(4):458-469. PMID 26669632.
65. Njei B, McCarty TR, Luk J, et al. Use of transient elastography in patients with HIV-HCV coinfection: A systematic review and meta-analysis. *J Gastroenterol Hepatol.* Oct 2016; 31(10):1684-1693. PMID 26952020.
66. Pavlov CS, Casazza G, Nikolova D, et al. Transient elastography for diagnosis of stages of hepatic fibrosis and cirrhosis in people with alcoholic liver disease. *Cochrane Database Syst Rev.* Jan 22 2015; 1:CD010542. PMID 25612182.
67. Xu X, Su Y, Song R, et al. Performance of transient elastography assessing fibrosis of single hepatitis B virus infection: a systematic review and meta-analysis of a diagnostic test. *Hepatol Int.* Oct 2015; 9(4):558-566. PMID 26187292.
68. Abdel Alem S, Elsharkawy A, El Akel W et al. Liver stiffness measurements and FIB-4 are predictors of response to sofosbuvir-based treatment regimens in 7256 chronic HCV patients. *Expert Rev Gastroenterol Hepatol.* 2019 Aug 17; 1-8:1-8. PMID 31418303.
69. Guo Y, Parthasarathy S, Goyal P, et al. Magnetic resonance elastography and acoustic radiation force impulse for staging hepatic fibrosis: a meta-analysis. *Abdom Imaging.* Apr 2015; 40(4):818-834. PMID 24711064.
70. Hu X, Qiu L, Liu D, et al. Acoustic Radiation Force Impulse (ARFI) Elastography for noninvasive evaluation of hepatic fibrosis in chronic hepatitis B and C patients: a systematic review and meta-analysis. *Med Ultrason.* Jan 31 2017; 19(1):23-31. PMID 28180193.
71. Liu H, Fu J, Hong R, et al. Acoustic radiation force impulse elastography for the non-invasive evaluation of hepatic fibrosis in non-alcoholic fatty liver disease patients: a systematic review & meta-analysis. *PLoS One.* Jul 2015; 10(7): e0127782. PMID 26131717.
72. Nierhoff J, Chavez Ortiz AA, Herrmann E, et al. The efficiency of acoustic radiation force impulse imaging for the staging of liver fibrosis: a meta-analysis. *Eur Radiol.* Nov 2013; 23(11):3040-3053. PMID 23801420.
73. Singh S, Venkatesh SK, Wang Z, et al. Diagnostic performance of magnetic resonance elastography in staging liver fibrosis: a systematic review and meta-analysis of individual participant data. *Clin Gastroenterol Hepatol.* Mar 2015; 13(3):440-451 e446. PMID 25305349.
74. Singh S, Venkatesh SK, Loomba R, et al. Magnetic resonance elastography for staging liver fibrosis in non-alcoholic fatty liver disease: a diagnostic accuracy systematic review and individual participant data pooled analysis. *Eur Radiol.* May 2016; 26(5):1431-1440. PMID 26314479.
75. Xiao G, Zhu S, Xiao X et al. Comparison of laboratory tests, ultrasound, or magnetic resonance elastography to detect fibrosis in patients with nonalcoholic fatty liver disease: A meta-analysis. *Hepatology.* 2017 Jun 7; 66(5). PMID 28586172.
76. Kobayashi K, Nakao H, Nishiyama T, et al. Diagnostic accuracy of real-time tissue elastography for the staging of liver fibrosis: a meta-analysis. *Eur Radiol.* Jan 2015; 25(1):230-238. PMID 25149296.

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77. Hong H, Li J, Jin Y, et al. Performance of real-time elastography for the staging of hepatic fibrosis: a meta-analysis. *PLoS One*. Dec 2014; 9(12):e115702. PMID 25541695.
78. Singh S, Muir AJ, Dieterich DT, et al. American Gastroenterological Association Institute Technical Review on the role of elastography in chronic liver diseases. *Gastroenterology*. May 2017; 152(6):1544-1577. PMID 28442120.
79. National Institute for Health and Care Excellence (NICE). Hepatitis B (chronic): diagnosis and management [CG165]. 2013.
80. American Association for the Study of Liver Diseases, Infectious Diseases Society of America. HCV Guidance: Recommendations for Testing, Managing, and Treating Hepatitis C. Last updated October 24, 2022
81. Horowitz JM, Kamel IR, Arif-Tiwari H, et al. ACR Appropriateness Criteria(R) Chronic Liver Disease. *J Am Coll Radiol*. May 2017; 14(5s):S103-s117. PMID 28473066.
82. European Association for Study of Liver, Asociacion Latinoamericana para el Estudio del Higado. EASL-ALEH Clinical Practice Guidelines: Non-invasive tests for evaluation of liver disease severity and prognosis. *J Hepatol*. Jul 2015; 63(1):237-264. PMID 25911335.
83. Siddiqui MS, Vuppalandhi R, Van Natta ML, et al. Vibration-Controlled Transient Elastography to Assess Fibrosis and Steatosis in Patients With Nonalcoholic Fatty Liver Disease. *Clin Gastroenterol Hepatol*. 2019;17(1):156-163.e2. doi:10.1016/j.cgh.2018.04.043
84. Castera L, Friedrich-Rust M, Loomba R. Noninvasive Assessment of Liver Disease in Patients With Nonalcoholic Fatty Liver Disease. *Gastroenterology*. 2019;156(5):1264-1281.e4. doi:10.1053/j.gastro.2018.12.036
85. Owens DK, Davidson KW, Krist AH, et al. Screening for Hepatitis C Virus Infection in Adolescents and Adults: US Preventive Services Task Force Recommendation Statement. *JAMA*. Mar 10 2020; 323(10): 970-975. PMID 32119076
86. Bashir MR, Horowitz JM, Kamel IR, et al. ACR Appropriateness Criteria® Chronic Liver Disease. *J Am Coll Radiol*. May 2020; 17(5S): S70-S80. PMID 32370979
87. Dietrich, Christoph F. Noninvasive assessment of hepatic fibrosis: Ultrasound-based elastography. In: UpToDate, Waltham MA, Updated April 30, 2024, literature current through Nov 2024
88. Curry, Michael. Noninvasive assessment of hepatic fibrosis: Overview of serological tests and imaging examinations. In: UpToDate, Waltham MA, Updated Jan 12, 2024. Literature review through November 2024.
89. Sterling RK, Patel K, Duarte-Rojo A, et al. AASLD Practice Guideline on blood-based noninvasive liver disease assessment of hepatic fibrosis and steatosis. *Hepatology*. Published online March 15, 2024
90. Sterling RK, Duarte-Rojo A, Patel K, et al. AASLD Practice Guideline on imaging-based noninvasive liver disease assessment of hepatic fibrosis and steatosis. *Hepatology*. Published online March 15, 2024.
91. Wattacheril JJ, Abdelmalek MF, Lim JK, et al. AGA Clinical Practice Update on the Role of Noninvasive Biomarkers in the Evaluation and Management of Nonalcoholic Fatty

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Liver Disease: Expert Review. Gastroenterology. Oct 2023; 165(4): 1080-1088. PMID 37542503

POLICY HISTORY

MP 2.252	01/25/2019 Consensus Review. No change to policy statements. Background and references updated. Rationale condensed.
	02/13/2020 Consensus Review. No change to policy statements. References updated, coding and literature reviewed. New April 2020 Codes 0014M and 0166U added to policy. Effective 04/01/2020
	09/01/2020 Administrative Update. Added ICD-10 K74.00, K 74.01, K74.02
	01/21/2021 Consensus Review. No change to policy statements. Background and rationale reviewed. References reviewed and updated.
	09/12/2022 Administrative Update. Added 0344U Effective 10/01/2022
	12/09/2022 Consensus Review. No change to policy stance, updated background and references.
	12/12/2023 Administrative Update. Code 0014M deleted, added new code 81517. Effective 01/01/2024.
	12/13/2023 Consensus Review. No change to policy stance, updated references.
	06/11/2024 Administrative Update. New code 0468U, effective 07/01/2024
	12/09/2024 Minor Review. Removed list of specific indications for transient elastography. All monitoring is now investigational. Updated background and references.
	05/28/2025 Administrative update. Magnetic resonance elastography no longer mentioned, removed code 76391 for vendor management.
	06/11/2025 Administrative Update. Removing the Benefit Variations Section and updating the Disclaimer.
	09/04/2025 Consensus Review. No change to policy stance.
	02/20/2026 Minor Review. Removed multianalyte assays and associated codes, 0002M, 0003M, 0166U, 81517, 81596, 0468U, 83520, 83883, 0344U. Updated policy guidelines. Policy only speaks to imaging, title update to reflect this change.
	09/11/2026 Administrative Update. New ICD10 added, K74.0A and K76.83 effective 10/01/2026.

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Association. Communications issued by Capital Blue Cross in its capacity as administrator of programs and provider relations for all companies.