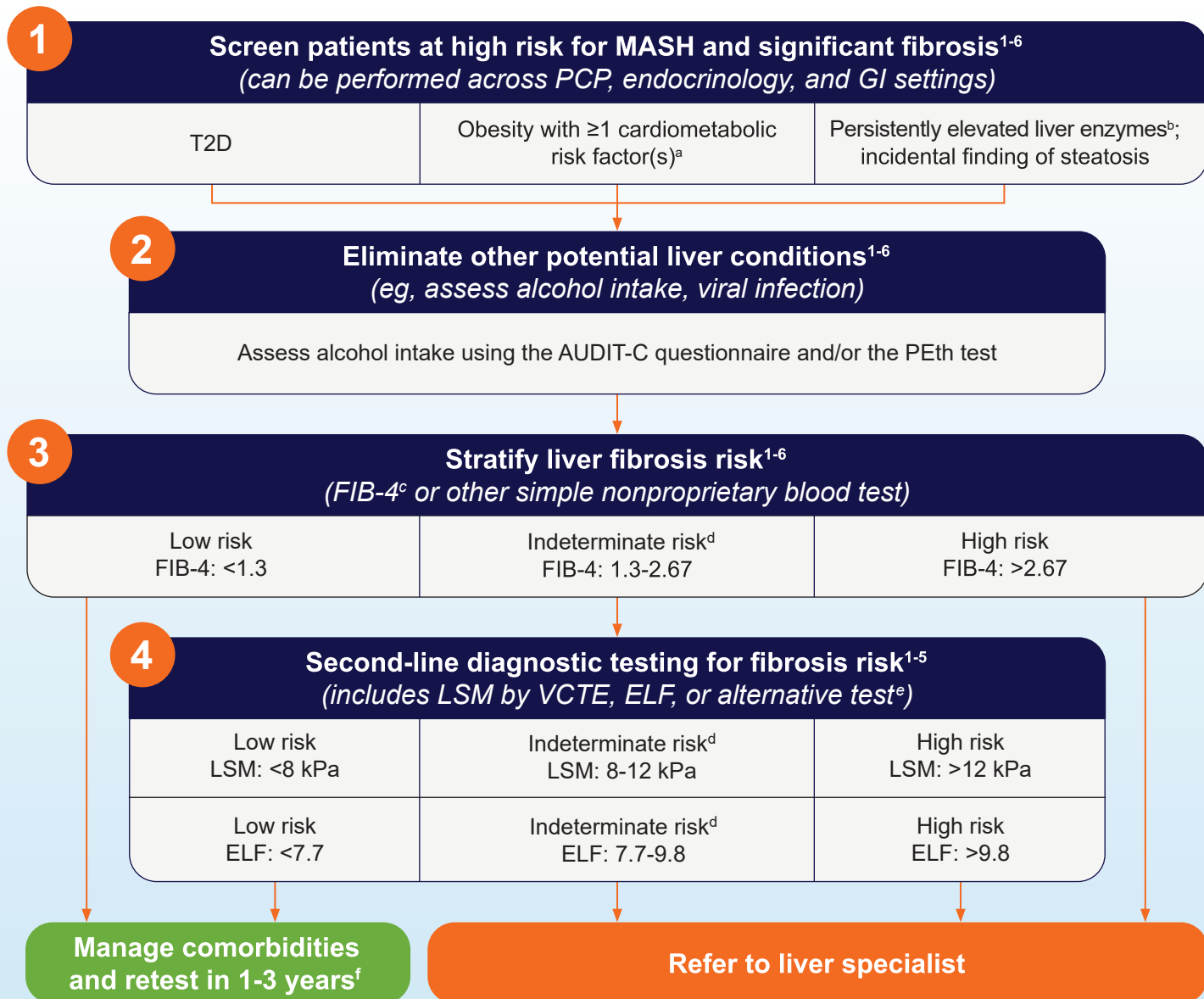


Integrated Algorithm for Noninvasive Risk Stratification of Advanced Liver Fibrosis* and Liver-Related Outcomes in MASLD

Adapted from AACE, AASLD, ADA, AGA, APP, and EASL-EASD-EASO guidance documents



To learn more about MASH, sign up to Madrigal Connect
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*Advanced liver fibrosis is a severe stage of liver scarring (typically stage F3 and F4), inclusive of cirrhosis.

^aExamples: obesity, high triglycerides, low HDL cholesterol, hypertension, insulin resistance.

^bElevated liver enzymes alone do not indicate presence of MASH, as patients with MASH may present without elevated liver enzymes; conversely, the absence of elevated liver enzymes does not indicate absence of MASH.

^cFIB-4 thresholds valid for age ≤ 65 years (for age >65 years: lower FIB-4 cutoff is 2.0).

^dFIB-4 is a rule-out test; "indeterminate" is used in this intermediate group as the risk is not yet known and a second non-invasive test is required to guide next steps.

^eEg, MRE, SWE, ELF, with adapted thresholds.

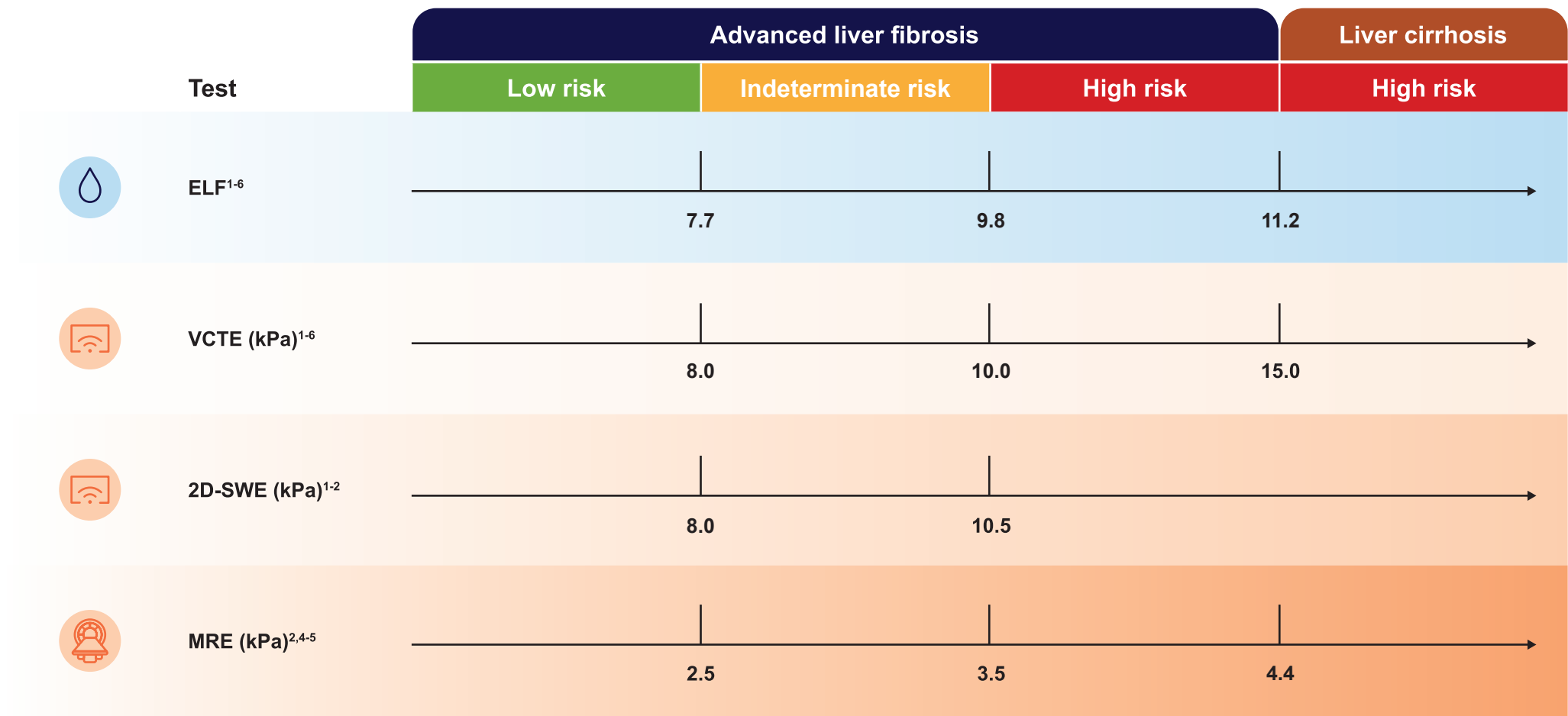
^fEASL-EASD-EASO, AACE/AASLD, AGA, and APP guidance documents provide 1- to 3-year retesting timeline.

AACE, American Association of Clinical Endocrinology; AASLD, American Association for the Study of Liver Diseases; ADA, American Diabetes Association; AGA, American Gastroenterological Association; APP, advanced practice provider; AUDIT-C, Alcohol Use Disorder Identification Test-Concise; EASD, European Association for the Study of Diabetes; EASL, European Association for the Study of the Liver; EASO, European Association for the Study of Obesity; ELF, enhanced liver fibrosis test; F, fibrosis score; FIB-4, fibrosis-4 index; GI, gastrointestinal; HDL, high-density lipoprotein; kPa, kilopascals; LSM, liver stiffness measurement; MASH, metabolic dysfunction-associated steatohepatitis; MASLD, metabolic dysfunction-associated steatotic liver disease; MRE, magnetic resonance elastography; PCP, primary care physician; PEth, phosphatidylethanol; SWE, shear wave elastography; T2D, type 2 diabetes; VCTE, vibration-controlled transient elastography.

1. EASL-EASD-EASO. *J Hepatol*. 2024;81(3):492-542. 2. Rinella ME, et al. *Hepatology*. 2023;77(5):1797-1835.
3. Cusi K, et al. *Endocr Pract*. 2022;28(5):528-562. 4. Wattacheril JJ, et al. *Gastroenterology*. 2023;165(4):1080-1088.
5. Cusi K, et al. *Diabetes Care*. 2025;48:1057-1082. 6. Lam BP, et al. *J Clin Gastroenterol*. 2025;59(4):298-309.

Summary of Second- and Third-Line Noninvasive Test Cutoffs Used to Assess the Risk for Advanced Liver Fibrosis and Cirrhosis in MASLD

Adapted from AACE, AASLD, ADA, AGA, APP, and EASL-EASD-EASO guidance documents



When ranges are reported across guidelines, values shown correspond to the lower bound of those ranges.
AACE, American Association of Clinical Endocrinology; AASLD, American Association for the Study of Liver Diseases; ADA, American Diabetes Association; AGA, American Gastroenterological Association; APP, advanced practice provider; EASD, European Association for the Study of Diabetes; EASL, European Association for the Study of the Liver; EASO, European Association for the Study of Obesity; ELF, enhanced liver fibrosis test; kPa, kilopascals; MASLD, metabolic dysfunction-associated steatotic liver disease; MRE, magnetic resonance elastography; SWE, shear wave elastography; VCTE, vibration-controlled transient elastography.

1. EASL-EASD-EASO. *J Hepatol.* 2024;81(3):492–542. 2. Rinella ME, et al. *Hepatology.* 2023;77(5):1797–1835. 3. Cusi K, et al. *Endocr Pract.* 2022;28(5):528–562. 4. Wattacheril JJ, et al. *Gastroenterology.* 2023;165(4):1080–1088. 5. Cusi K, et al. *Diabetes Care.* 2025;48:1057–1082. 6. Lam BP, et al. *J Clin Gastroenterol.* 2025;59(4):298–309.

