

# Fibrosis-4: A primary risk assessment for fibrosis in patients at risk for MASH



Fibrosis-4 (FIB-4) is a simple non-invasive scoring test for identification and risk stratification of fibrosis

FIB-4 is a **first-line screening tool** that can be easily implemented in primary care and other clinical settings to **detect advanced liver fibrosis** in patients at risk for MASH<sup>1-3</sup>





**Non-invasive**<sup>1-3</sup>



**Low cost**<sup>1</sup>





**Accessible**<sup>1</sup>





**Validated**<sup>1-3</sup>

FIB-4 is a simple algorithm based on **routine blood test results** and patient demographics, specifically:

 Alanine aminotransferase (ALT)

 Platelet count

 Aspartate aminotransferase (AST)

 Age

FIB-4 risk stratification can help identify people at risk for advanced fibrosis

FIB-4 scores can be derived using manual calculation or using free online calculators<sup>1,4</sup>:

$$FIB-4 = \frac{Age\ (years) \times AST\ level\ (U/L)}{Platelet\ count\ (10^9/L) \times \sqrt{ALT\ level\ (U/L)}}$$

FIB-4 score	Risk stratification for advanced fibrosis	Clinical interpretation
<1.3	Low risk	Manage in primary care, repeat screening in 1–3 years
1.3–2.67	Intermediate risk	Further evaluation with secondary risk assessment or referral to specialist
>2.67	High risk	Referral to specialist

In patients older than **65 years**, a **FIB-4 cutoff of >2.0** should be used<sup>1</sup>

A primary risk assessment employing FIB-4 may **identify** patients who are unlikely to have advanced fibrosis vs those at **high risk** that may benefit from referral to a liver specialist<sup>1</sup>



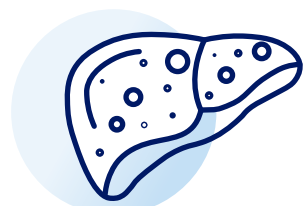
Patients without prediabetes/T2D and 1–2 risk factors\*      Reassess with FIB-4 every 2–3 years




Patients with prediabetes/T2D or ≥2 risk factors\*      Reassess with FIB-4 every 1–2 years

Populations for FIB-4 testing


FIB-4 should be used to screen for **patients at risk for MASH**, such as those with<sup>1-3,5-7</sup>:




**Hepatic steatosis**




**Obesity**



**Type 2 diabetes**



**Hypertension**



**Dyslipidemia**  
Hypertriglyceridemia and/or low HDL



**FIB-4 is less accurate in:**

 Individuals aged <35 years with increased metabolic risk or elevated liver chemistries<sup>†</sup>

 Acutely ill patients



**Regular risk assessment with FIB-4 may allow for timely and accurate diagnosis of patients at risk for MASH and mitigate risk for the development of MASH with advanced fibrosis.**

\* Risk factors include obesity (BMI ≥25 kg/m<sup>2</sup>, ≥23 kg/m<sup>2</sup> for individuals of Asian ethnicity), elevated waist circumference (>37 inches in men, >31.5 inches in women), elevated HbA<sub>1c</sub> levels (≥100 mg/dL [5.7%]) or fasting plasma glucose (≥100 mg/dL [5.6 mmol/L]), high blood pressure (≥130/85 mmHg), elevated plasma triglycerides (≥150 mg/dL [1.70 mmol/L]) and elevated plasma HDL (≤40 mg/dL (1.0 mmol/L) in males and ≤50 mg/dL (1.3 mmol/L) in females).  
† Consider secondary assessments in individuals aged <35 years with increased metabolic risk or elevated liver chemistries.  
ALT, alanine aminotransferase; AST, aspartate aminotransferase; F, fibrosis; FIB-4, fibrosis-4; HDL, high-density lipoprotein; MASH, metabolic dysfunction-associated steatohepatitis; T2D, type 2 diabetes.  
1. Rinella ME et al. Hepatology. 2023;77:1797–835; 2. American Diabetes Association Professional Practice Committee. Diabetes Care. 2023;46:S49–S67; 3. Cusi et al. Endocr Pract. 2022;28:S28–S62; 4. Li Y et al. PLoS One. 2014;9:e105728; 5. Srivastava A et al. J Hepatol. 2019;71:371–378; 6. Kanwal F et al. Gastroenterol. 2021;161:1657–1669; 7. Berzigotti A et al. J Hepatol. 2021;75:659–689.