Highlight of FibroScan®
in Malaysian Guidelines and Consensus

Malaysian Society of Gastroenterology and Hepatology

Consensus Statement

Metabolic dysfunction-associated fatty liver disease

Update 2022

MOH/P/PAK/447.20(GU)-e

Clinical Practice Guidelines

Management of Type 2 Diabetes Mellitus (6th Edition)

December 2020

Recommendations related to

FibroScan® by echosens

FibroScan® by echosens

Malaysian Society of Gastroenterology and Hepatology • Consensus Statement • Update 2022

Metabolic dysfunction- associated fatty liver disease

Statement 7

MAFLD patients should have liver fibrosis assessment using FIB-4 and stratified as having low risk of advanced liver fibrosis if **FIB-4 is < 1.3**.

MAFLD patients with **FIB-4 ≥ 1.3** have increased risk of advanced liver fibrosis and should undergo further assessment by liver stiffness measurement.

Level of evidence: I
Strength of recommendation: A

Statement 9

Patients with T2DM are an important target group to screen for more severe MAFLD. The FIB-4 can be used as a screening tool. Patients with **intermediate or high FIB-4** score may have advanced liver fibrosis and should be considered for liver stiffness measurement.

Level of evidence: III
Strength of recommendation: A

Statement 10

MAFLD patients with **liver stiffness ≥ 10 kPa** may have advanced liver fibrosis and should be considered for referral to gastroenterology/hepatology.

MAFLD patients with **liver stiffness ≥ 15 kPa** should be considered for HCC screening.

MAFLD patients with **liver stiffness ≥ 20–25 kPa** are likely to have clinically significant portal hypertension and should be referred to gastroenterology/ hepatology and be considered for variceal screening.

Level of evidence: III
Strength of recommendation: A

FIGURE 1 **Algorithm for screening for more severe metabolic dysfunction-associated fatty liver disease among patients with type 2 diabetes mellitus**

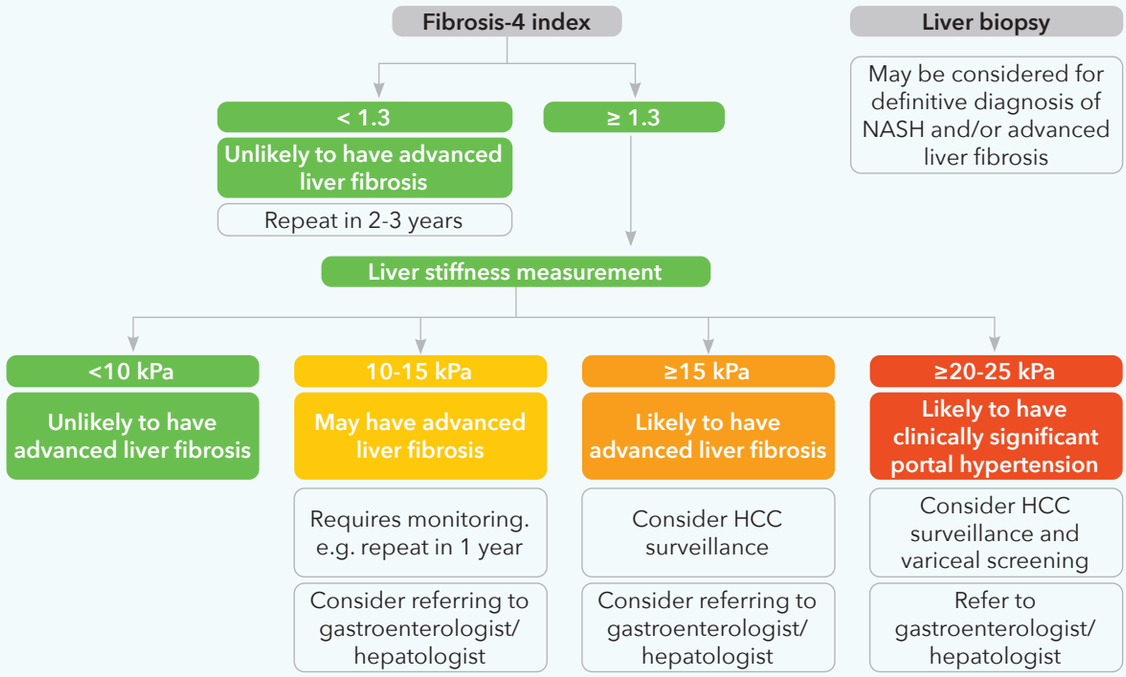
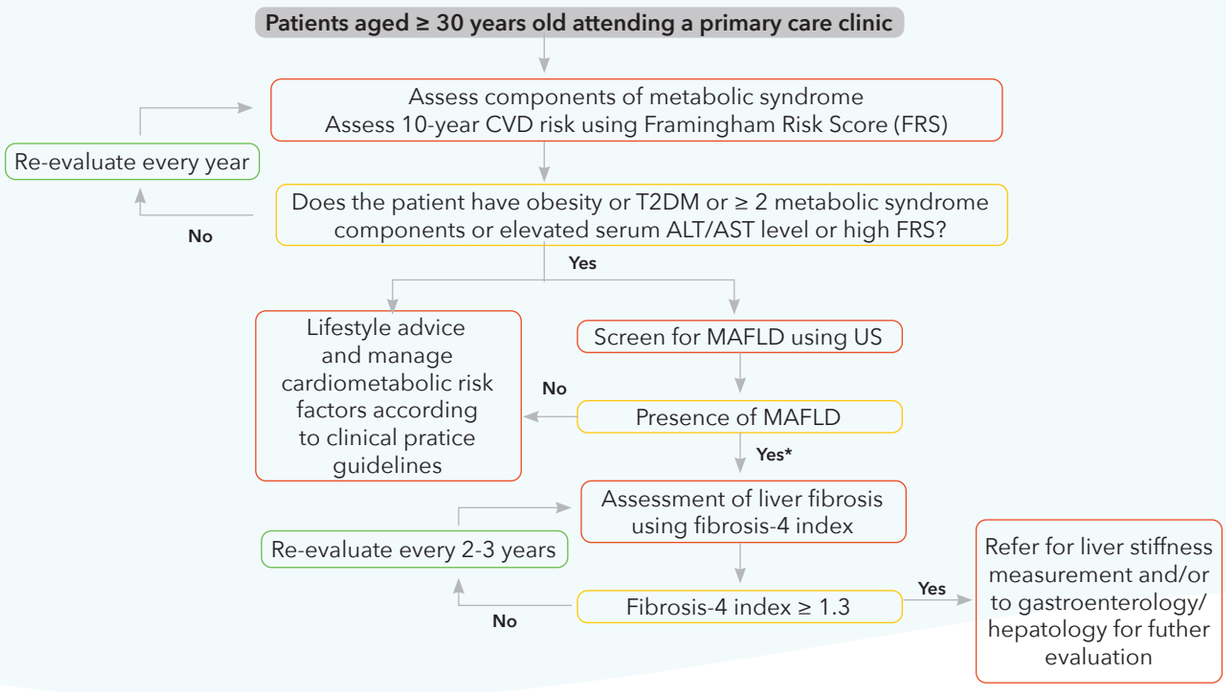


FIGURE 2 **Algorithm for screening for metabolic dysfunction-associated fatty liver disease (MAFLD) among adults ≥ 30 years old in primary care**



**Refer to relevant sections of the text, including "Lifestyle intervention is the cornerstone of management of metabolic dysfunction-associated fatty liver disease," "Management of metabolic risk factors to reduce cardiovascular disease risk," and "Pharmacological treatment for metabolic dysfunction-associated fatty liver disease" for details on the management of patients diagnosed with MAFLD.*

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- T2DM is a risk factor for NASH and advanced liver fibrosis,[1 (Level II-2)] which is one of the leading causes of liver transplantation for cirrhosis and for HCC.2,[3 (Level II-2)]
- In Malaysia, the prevalence of NAFLD among patients with T2DM has been estimated to be 49.6% based on ultrasonography and 72.4% based on controlled attenuation parameter.[4 (Level II-2)]
- A study using liver stiffness measurement (measured using transient elastography e.g. FibroScan®; a non-invasive procedure) estimated the prevalence of advanced liver fibrosis among patients with diabetes mellitus to be 21.0%.[5 (Level II-2)]
- The same study using **liver stiffness measurement ≥8 kPa** to identify patients with diabetes mellitus for liver biopsy found that the majority of the patients had NASH (83.1%) and some degree of liver fibrosis (87.1%), while advanced liver fibrosis was diagnosed in 36.6%.[5 (Level II-2)]

TABLE 1 **Interpretation of liver stiffness measurement and recommended action**

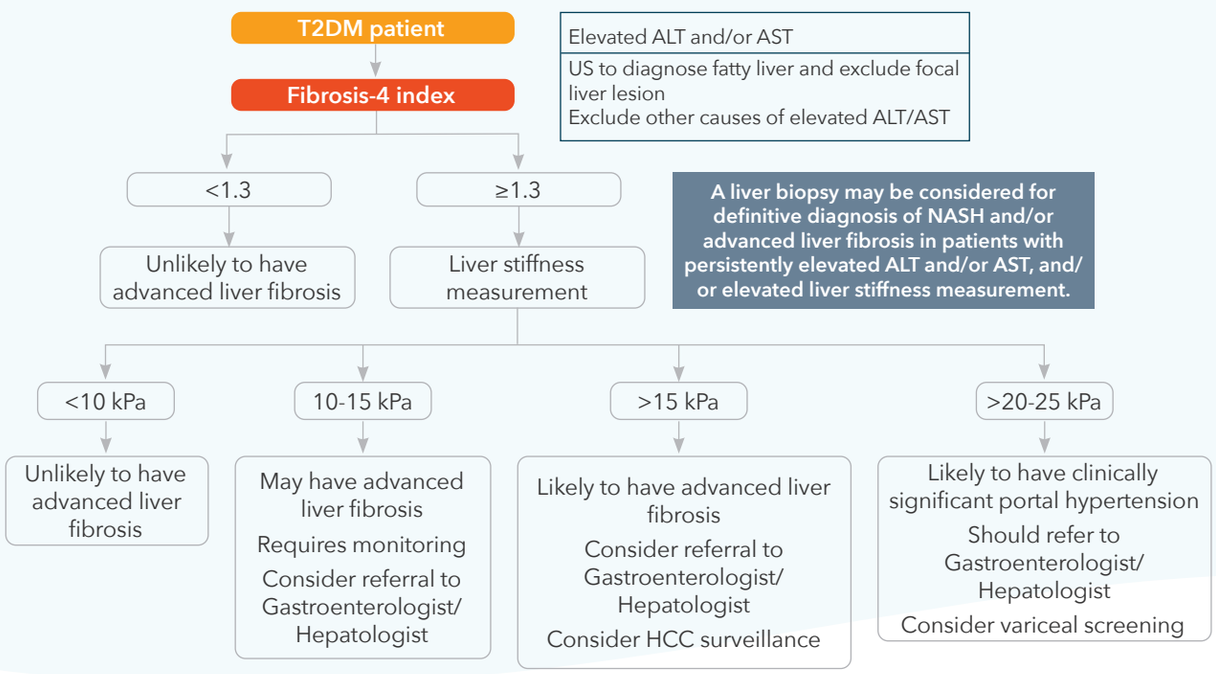
Liver stiffness measurement (kPa)*	Interpretation	Action
<10	Unlikely to have advanced liver fibrosis	
10-15	May have advanced liver fibrosis	• Requires monitoring e.g. repeat in 1 year • Consider referring to Gastroenterologist/Hepatologist
>15	Likely to have advanced liver fibrosis	• Should be considered for HCC surveillance • Consider referring to Gastroenterologist/Hepatologist
>20-25 (and/or presence of thrombocytopaenia	Likely to have clinically significant portal hypertension	• Should be considered for HCC surveillance and variceal screening • Requires referral to Gastroenterologist/Hepatologist

**Values obtained by transient elastography. Adapted from Wong VW. et. Al. 2019.*[(Level II-)]

TABLE 2 **Recommendations: Assessment of NAFLD**

Recommendations Assessment of NAFLD	
1. Patients with T2DM should have platelet count, and serum ALT and AST levels performed for assessment for NASH and advanced liver fibrosis. This may be repeated annually or more frequently, as indicated. **Grade A**	4. Patients with indeterminate or high serum biomarkers of fibrosis should be referred for liver stiffness measurement. **Grade A**
2. US examination of the liver should be performed in patients with T2DM and elevated serum ALT and/or AST to diagnose fatty liver and to exclude focal liver lesion. **Grade A**	5. Patients with persistently elevated serum ALT and/or AST level or elevated liver stifness measurement should be considered for referral to Gastrenterologist/Hepatologist for futher evaluation and management. **Grade A**
3. Patients with persistently elevated serum ALT and/or AST level should be investigated to exclude other causes of chronic liver disease. **Grade A**	6. A liver biopsy may be considered for definitive diagnosis of NASH and/or advanced liver fibrosis. **Grade A**

FIGURE 3 **Use of Fibrosis-4 index in assessment of NAFLD (appendix 9)**



Acronyms

- ALT: alanine aminotransferase
- AST: aspartate aminotransferase
- CVD: cardiovascular disease
- FIB4: Fibrosis-4 score
- HCC: hepatocellular carcinoma
- kPa: kilopascals
- MAFLD: Metabolic dysfunction-associated fatty liver disease
- NASH : non-alcoholic steatohepatitis
- T2DM: Type 2 diabetes mellitus
- US: ultrasound

References

1. Chan WK, Treeprasertsuk S, Imajo K, et al. Clinical features and treatment of nonalcoholic fatty liver disease across the Asia Pacific region-the GO ASIA initiative. Aliment Pharmacol Ther. 2018;47(6):816-825.
2. Wong RJ, Cheung R, Ahmed A. Nonalcoholic steatohepatitis is the most rapidly growing indication for liver transplantation in patients with hepatocellular carcinoma in the U.S. Hepatology. 2014;59(6):2188-2195.
3. Wong RJ, Aguilar M, Cheung R, et al. Nonalcoholic steatohepatitis is the second leading etiology of liver disease among adults awaiting liver transplantation in the United States. Gastroenterology. 2015;148(3):547-555.
4. Chan WK, Tan AT, Vethakkan SR, Tah PC, Vijayananthan A, Goh KL. Non-alcoholic fatty liver disease in diabetics--prevalence and predictive factors in a multiracial hospital clinic population in Malaysia. J Gastroenterol Hepatol. 2013;28(8):1375-1383.
5. Lai LL, Wan Yusoff WNI, Vethakkan SR, Nik Mustapha NR, Mahadeva S, Chan WK. Screening for non-alcoholic fatty liver disease in patients with type 2 diabetes mellitus using transient elastography. J Gastroenterol Hepatol. 2019;34(8):1396-1403.

because liver health matters