

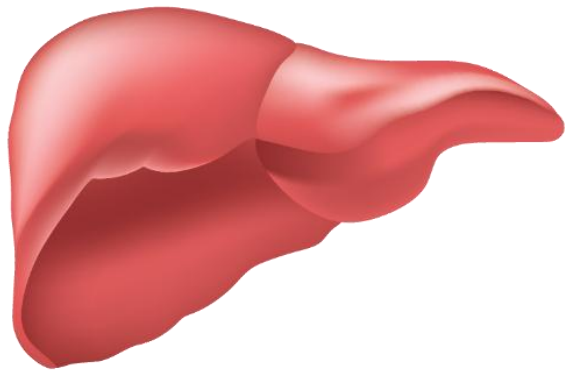
Ficat steatotic asociat sindromului metabolic

Prof. Dr. FLORIA Mariana

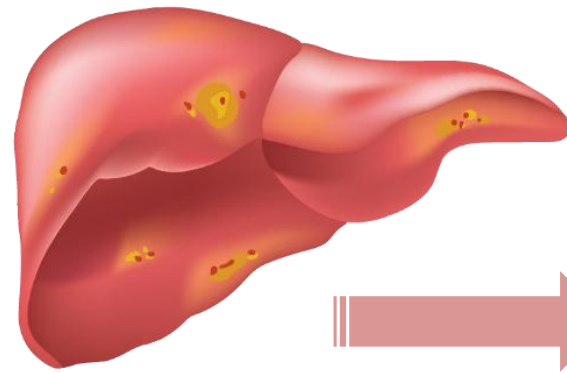


UNIVERSITATEA DE MEDICINĂ ȘI FARMACIE
GRIGORE T. POPA IAȘI

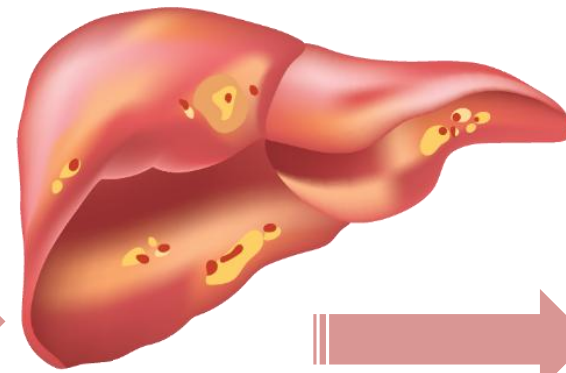
DE CE FICATUL STEATOTIC?



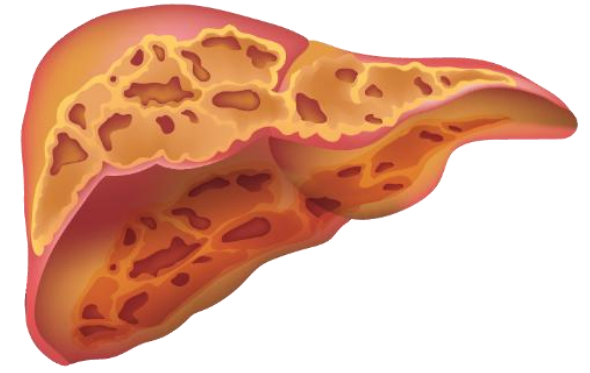
Ficat sănătos



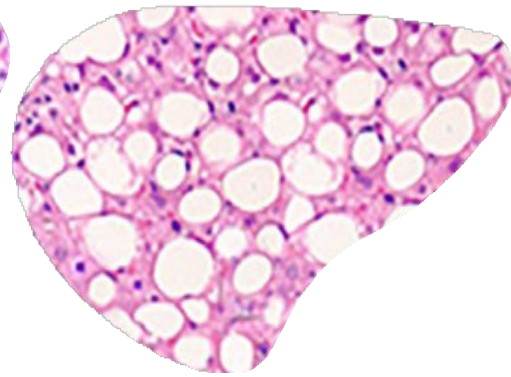
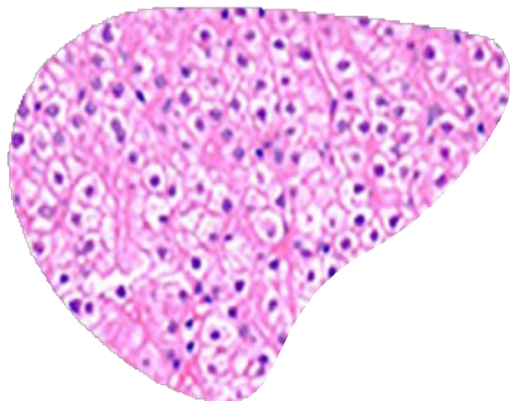
MASLD - Ficat steatotic

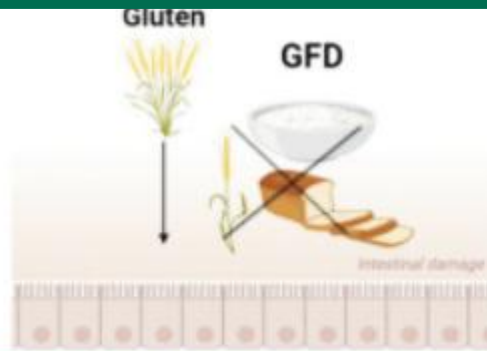


MASH- steatohepatita asociata disfuncției metabolice

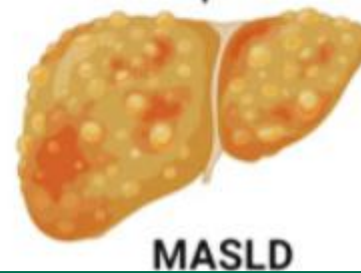
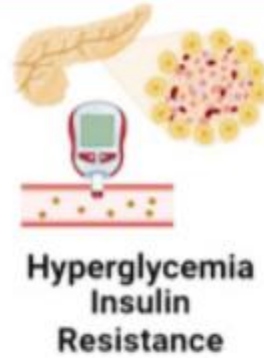
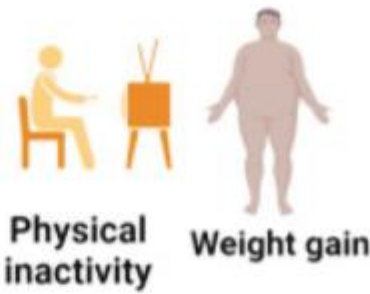
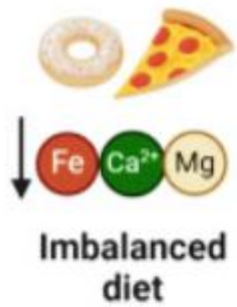


Ciroză





Unhealthy Gluten-Free Diet



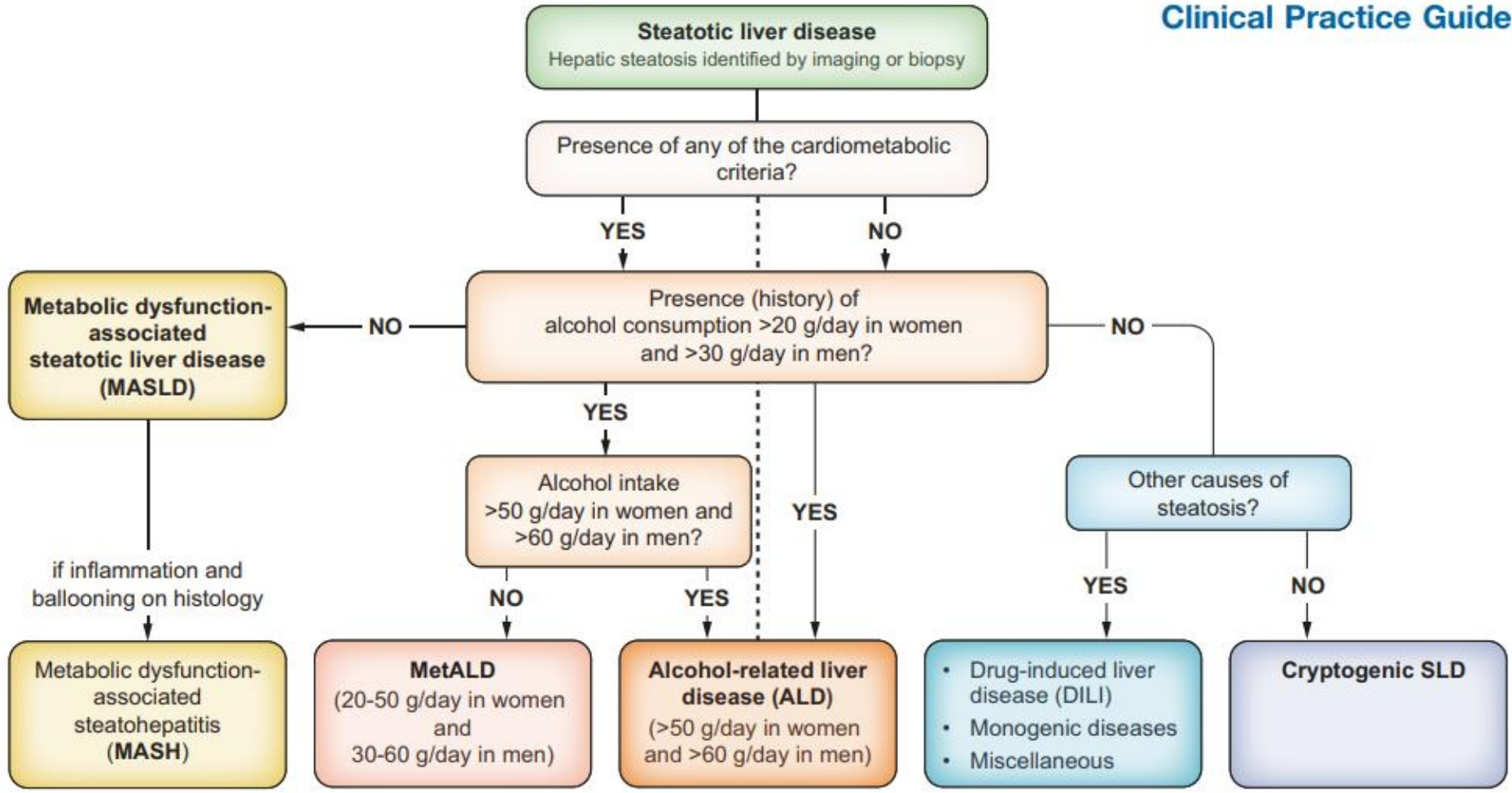


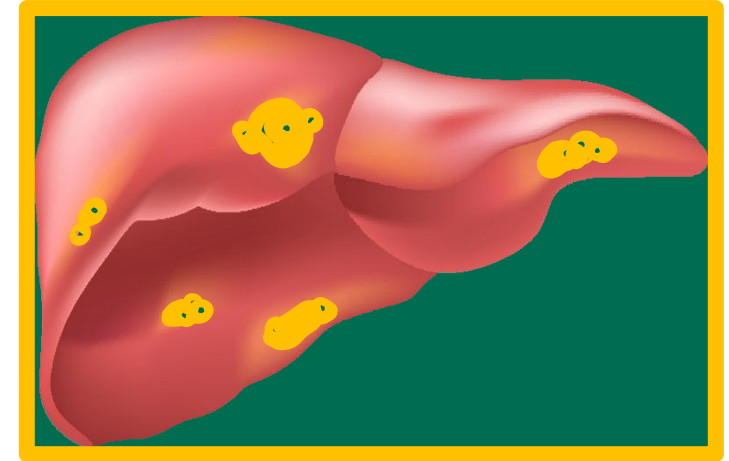
Fig. 1. Flow-chart for SLD and its sub-categories.² SLD, diagnosed histologically or by imaging, has many potential aetiologies. MASLD is defined as the presence of hepatic steatosis in conjunction with (at least) one cardiometabolic risk factor and no other discernible cause. The quantity of alcohol intake, the drinking pattern, and the type of alcohol consumed should be assessed in all individuals with SLD using detailed medical history, psychometric instruments and/or validated biomarkers. ALD, alcohol-related liver disease; DILI, drug-induced liver disease; MASH, metabolic dysfunction-associated steatohepatitis; MASLD, metabolic dysfunction-associated steatotic liver disease; MetALD, MASLD with moderate (increased) alcohol consumption; SLD, steatotic liver disease.

CUM SE POATE RECUNOAȘTE FICATUL STEATOTIC (BOALA HEPATICA STEATOTICA)?

DURERE ÎN
ETAJUL
ABDOMINAL
SUPERIOR

GREAȚĂ

DISCONFORT
ȘI
FLATULENȚĂ



OBOSEALĂ
CRONICĂ

SLĂBICIUNE

IRITABILITATE

TULBURĂRI
DE SOMN



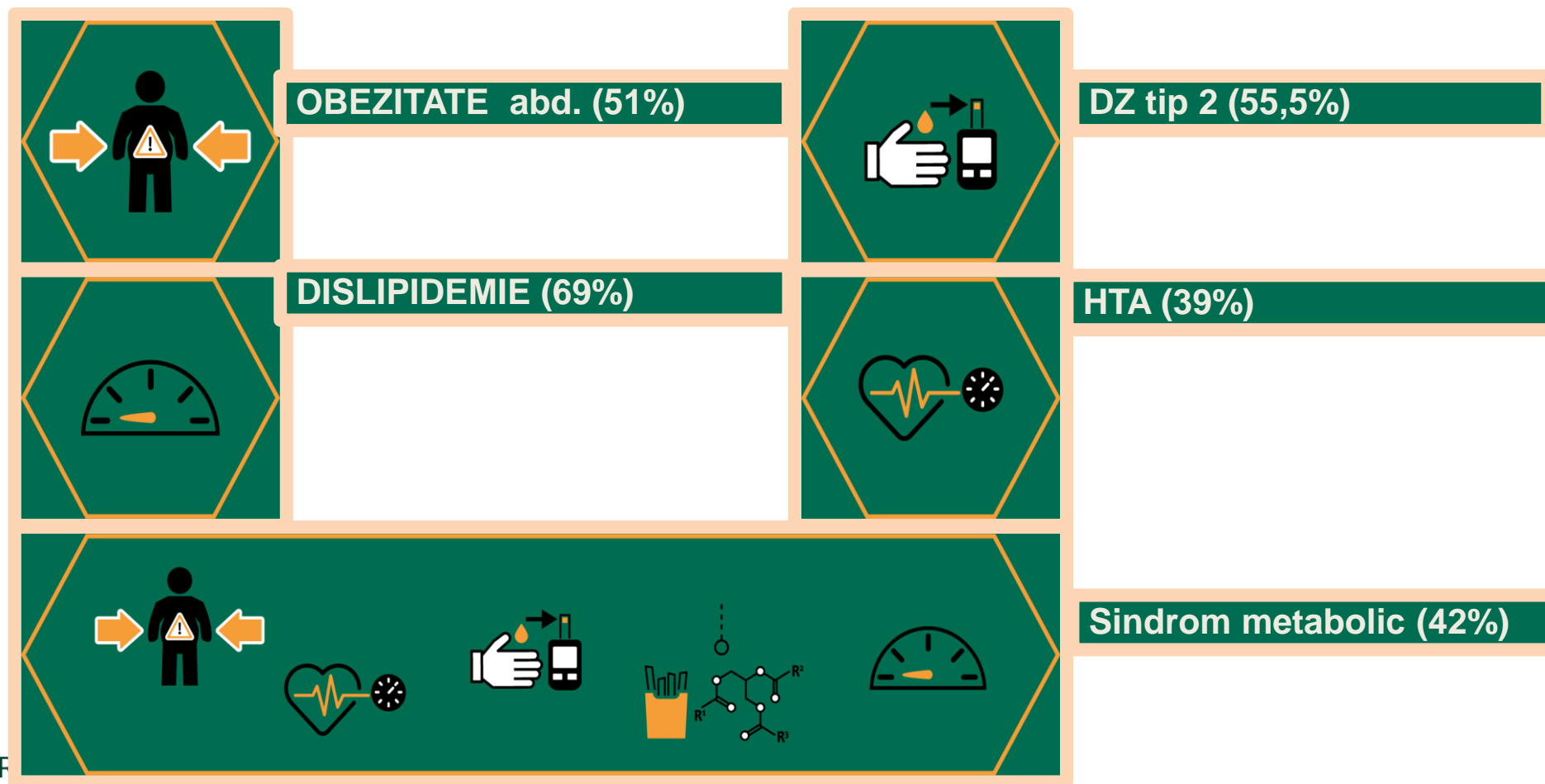
Table 3. Cardiometabolic risk factors in the definition of MASLD.²

Metabolic risk factor	Adult criteria
Overweight or Obesity	Body mass index ≥25 kg/m ² (≥23 kg/m ² in people of Asian ethnicity) Waist circumference <ul style="list-style-type: none">• ≥94 cm in men and ≥80 cm in women (Europeans)• ≥90 cm in men and ≥80 cm in women (South Asians and Chinese)• ≥85 cm in men and ≥90 cm in women (Japanese)
Dysglycaemia or type 2 diabetes	<u>Prediabetes</u> : HbA _{1c} 39-47 mmol/mol (5.7-6.4%) or fasting plasma glucose 5.6-6.9 mmol/L (100-125 mg/dl) or 2-h plasma glucose during OGTT 7.8-11 mmol/L (140-199 mg/dl) <i>or</i> <u>Type 2 diabetes</u> : HbA _{1c} ≥48 mmol/mol (≥6.5%) or fasting plasma glucose ≥7.0 mmol/L (≥126 mg/dl) or 2-h plasma glucose during OGTT ≥11.1 mmol/L (≥200 mg/dl) <i>or</i> <u>Treatment for type 2 diabetes</u>
Plasma triglycerides	≥1.7 mmol/L (≥150 mg/dl) <i>or</i> lipid-lowering treatment
HDL-cholesterol	≤1.0 mmol/L (≤39 mg/dl) in men and ≤1.3 mmol/L (≤50 mg/dl) in women <i>or</i> lipid-lowering treatment
Blood pressure	≥130/85 mmHg <i>or</i> treatment for hypertension

HbA1c, glycated haemoglobin; HDL, high-density lipoprotein; OGTT, oral glucose tolerance test.



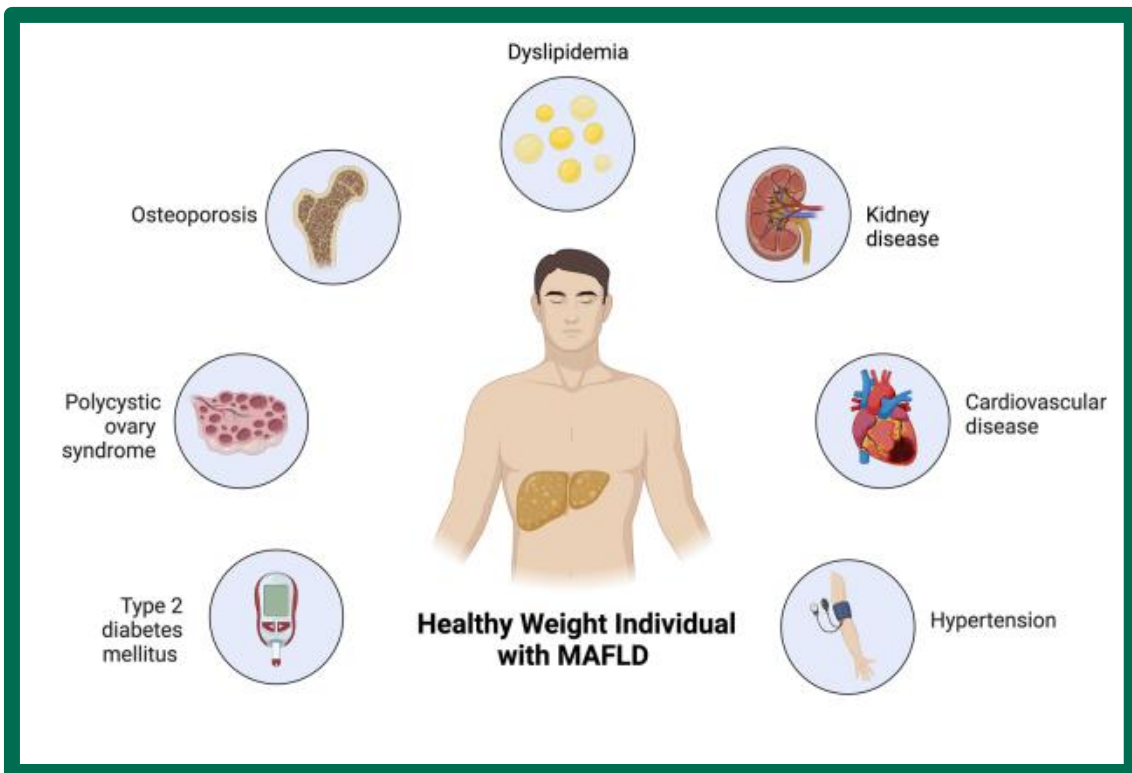
Steatohepatita asociata disfunctiei metabolice (MASH)



Progression in definitions of NAFLD, MAFLD and MASLD

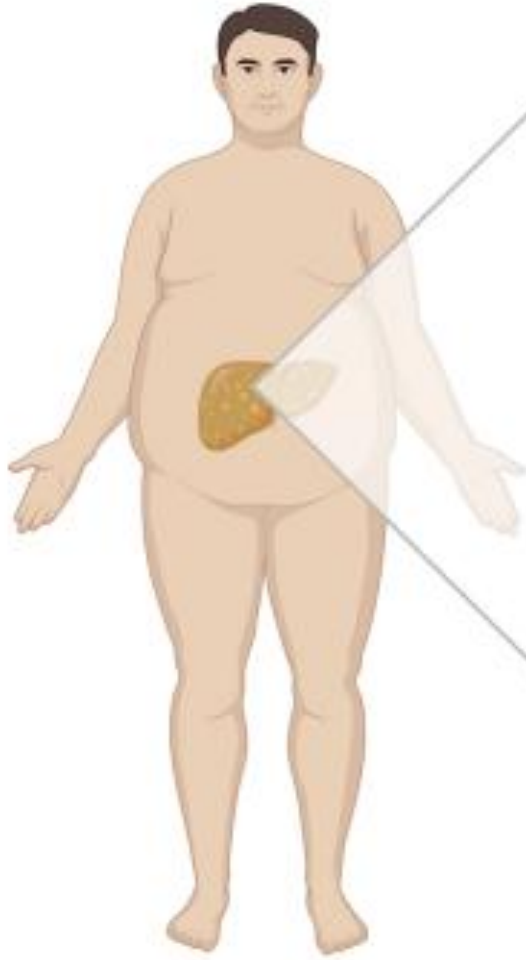
NAFLD	Presence of hepatic steatosis (> 5%) in the absence of other etiologies such as alcohol (ab)use, steatogenic drugs or viral hepatitis
MAFLD	Presence of hepatic steatosis (> 5%) in the context of 1 major metabolic criterium (presence of overweight, diabetes mellitus type 2) or 2 minor criteria (hypertension, increased weight circumference [> 102 cm for males, > 88 cm for females], hypertriglyceridemia, high LDL, low HDL levels, prediabetes, or CRP > 2 mg/L) Alcohol use (any level of consumption) is allowed
MASLD	Presence of hepatic steatosis (> 5%) in the context of 1 metabolic criterium (presence of overweight, diabetes mellitus type 2, hypertension, increased weight circumference [> 94 cm for males, > 80 cm for females], hypertriglyceridemia, high LDL, low HDL levels) Alcohol use is allowed up to 20 g/day for females, and 30 g/day for males





Impactul ficatului steatotic asociat disfuncției metabolice la normoponderali asupra sănătății

Health outcome	Impact of healthy-weight MAFLD
Prevalence of colorectal adenoma	MAFLD in healthy-weight individuals is associated with the presence of colorectal adenoma, emphasizing the importance of considering colonoscopy examination in patients with MAFLD
Development of reflux esophagitis	MAFLD in healthy-weight individuals is an independent risk factor for reflux esophagitis, with visceral adiposity emerging as the predominant metabolic risk factor in MAFLD patients
Recurrence of esophageal squamous cell carcinoma (ESCC)	MAFLD in healthy-weight individuals is independently and directly associated with a higher recurrence rate of ESCC, suggesting MAFLD as a potential marker for identifying individuals at high risk for ESCC recurrence after endoscopic treatment

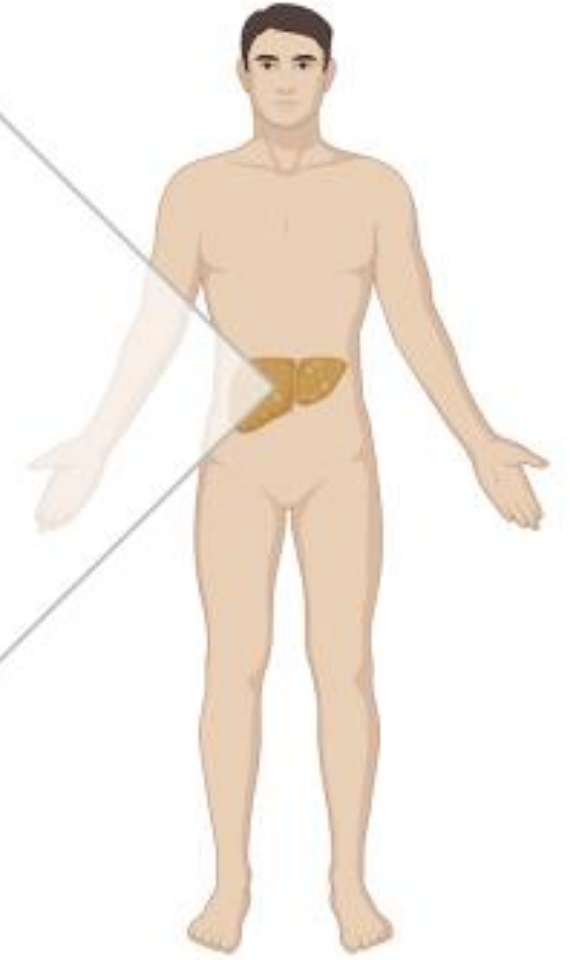


Obese MAFLD

- Commonly associated with higher prevalence due to obesity
- BMI ≥ 25 kg/m²
- ↑ Subcutaneous and visceral fat
- ↑ Cardiovascular mortality
- ↑ Liver-related mortality
- ↑ All-cause mortality
- Multisystemic disease
- Commonly overlooked

Healthy-weight MAFLD

- Prevalence may differ according to many factors
- BMI < 25 kg/m²
- ↑ Visceral fat
- ↑ Cardiovascular mortality
- ↑ Liver-related mortality
- ↑ All-cause mortality
- Multisystemic disease
- Risk of underdiagnosis



Fibrosis-4 (FIB-4) Index for Liver Fibrosis

Noninvasive estimate of liver scarring in HCV and HBV patients, to assess need for biopsy.

When to Use ▾ Pearls/Pitfalls ▾ Why Use ▾

Age
Use with caution in patients <35 or >65 years old, as the score has been shown to be less reliable in these patients

57 years

AST
Aspartate aminotransferase

32 U/L

ALT
Alanine aminotransferase

38 U/L

Platelet count

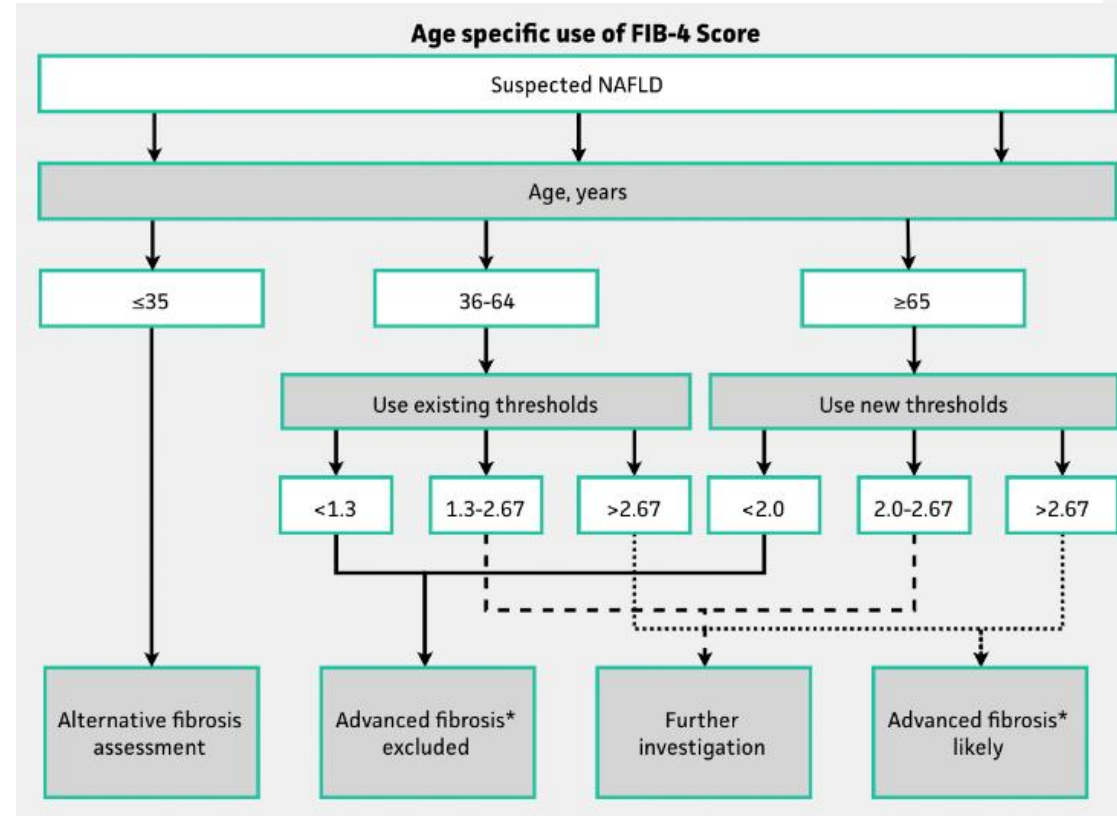
175 $\times 10^3/\mu\text{L}$ ↵

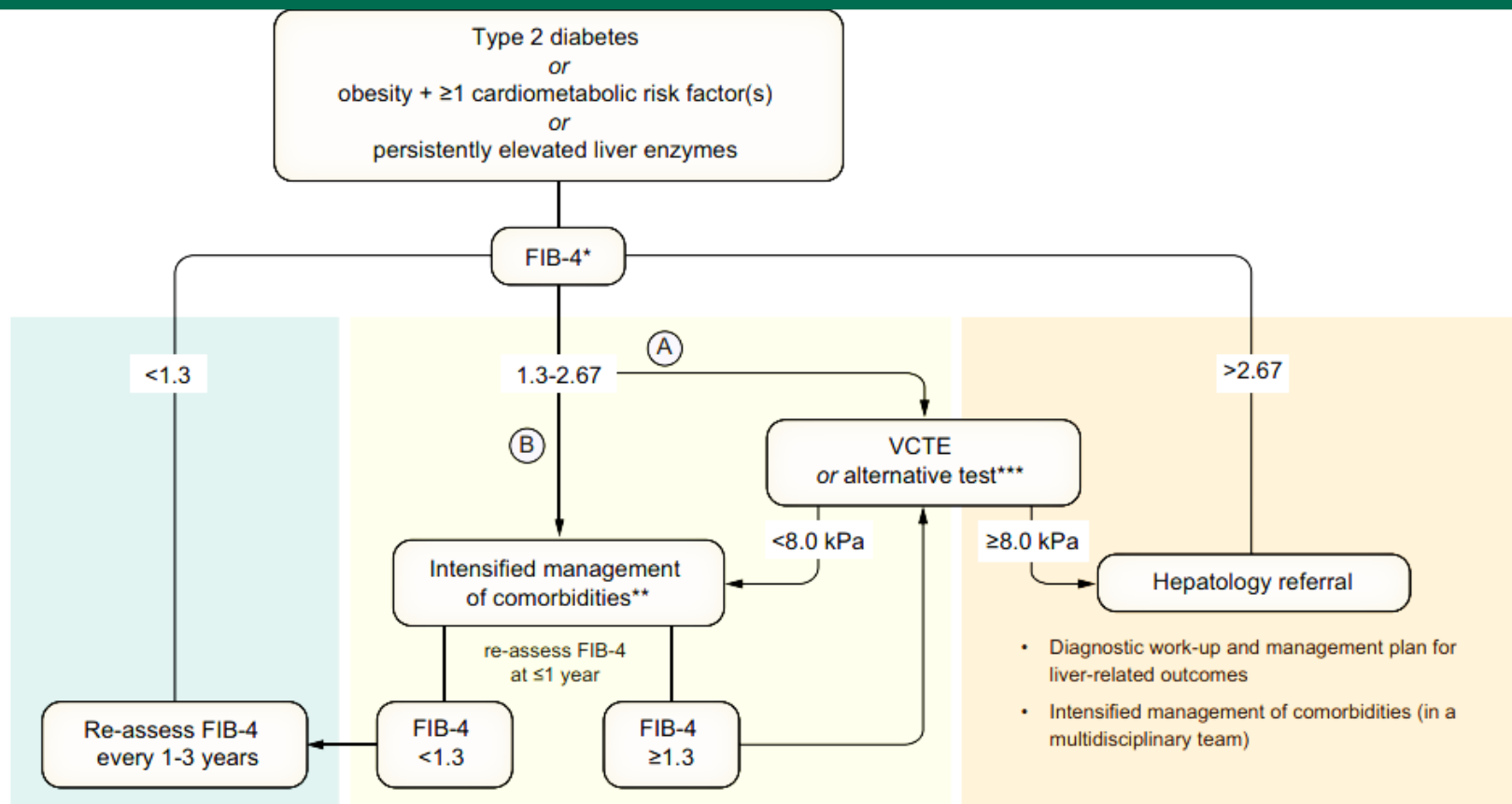
1.69 points

Further investigation needed
Approximate fibrosis stage: Ishak 2-3 (Sterling et al 2006)

FIB-4 Score	Approximate fibrosis stage*
<1.45	0-1
1.45-3.25	2-3
>3.25	4-6

*Based on Ishak fibrosis staging (Sterling et al 2006).

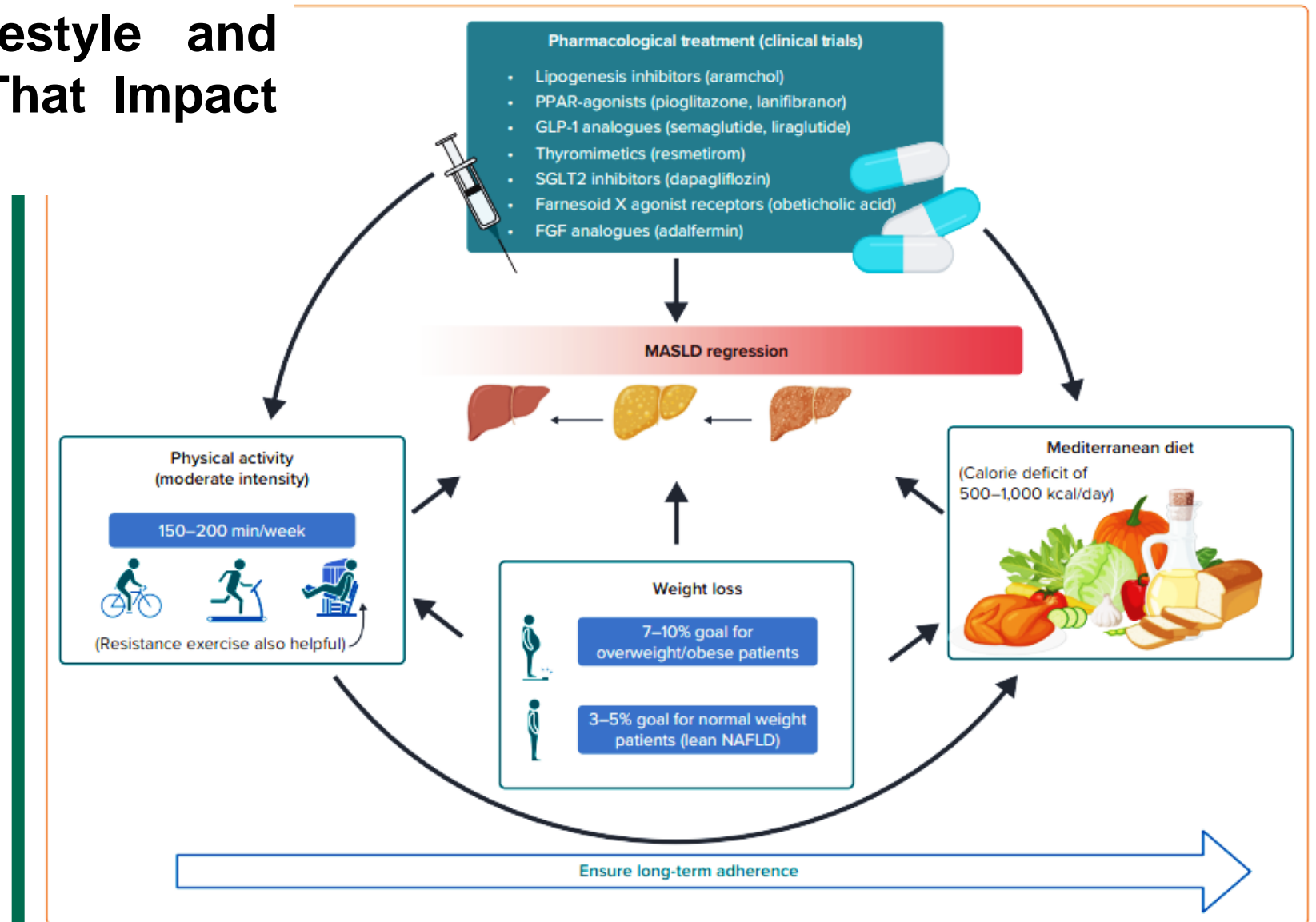




* FIB-4 thresholds valid for age ≤65 years (for age >65 years: lower FIB-4 cut-off is 2.0)
 ** e.g. lifestyle intervention, treatment of comorbidities (e.g. GLP1RA), bariatric procedures
 *** e.g. MRE, SWE, ELF, with adapted thresholds
 Ⓐ and Ⓑ are options, depending on medical history, clinical context and local resources

Fig. 2. Proposed strategy for non-invasive assessment of the risk for advanced fibrosis and liver-related outcomes in individuals with metabolic risk factors or signs of SLD. Individuals with (A) T2D or (B) abdominal obesity and ≥1 additional cardiometabolic risk factor(s) or (C) persistently elevated liver enzymes should undergo a multi-step diagnostic process, as indicated in the figure, to identify individuals with MASLD and advanced fibrosis. The algorithm can also be applied in case of incident finding of steatosis. This strategy is intended to identify individuals at risk of developing liver-related outcomes. ELF, enhanced liver fibrosis; FIB-4, fibrosis-4 index; GLP1RA, glucagon-like peptide-1 receptor agonist; MRE, magnetic resonance elastography; SLD, steatotic liver disease; SWE, shear wave elastography; VCTE, vibration-controlled transient elastography.

Components of Lifestyle and Drug Interventions That Impact MASLD



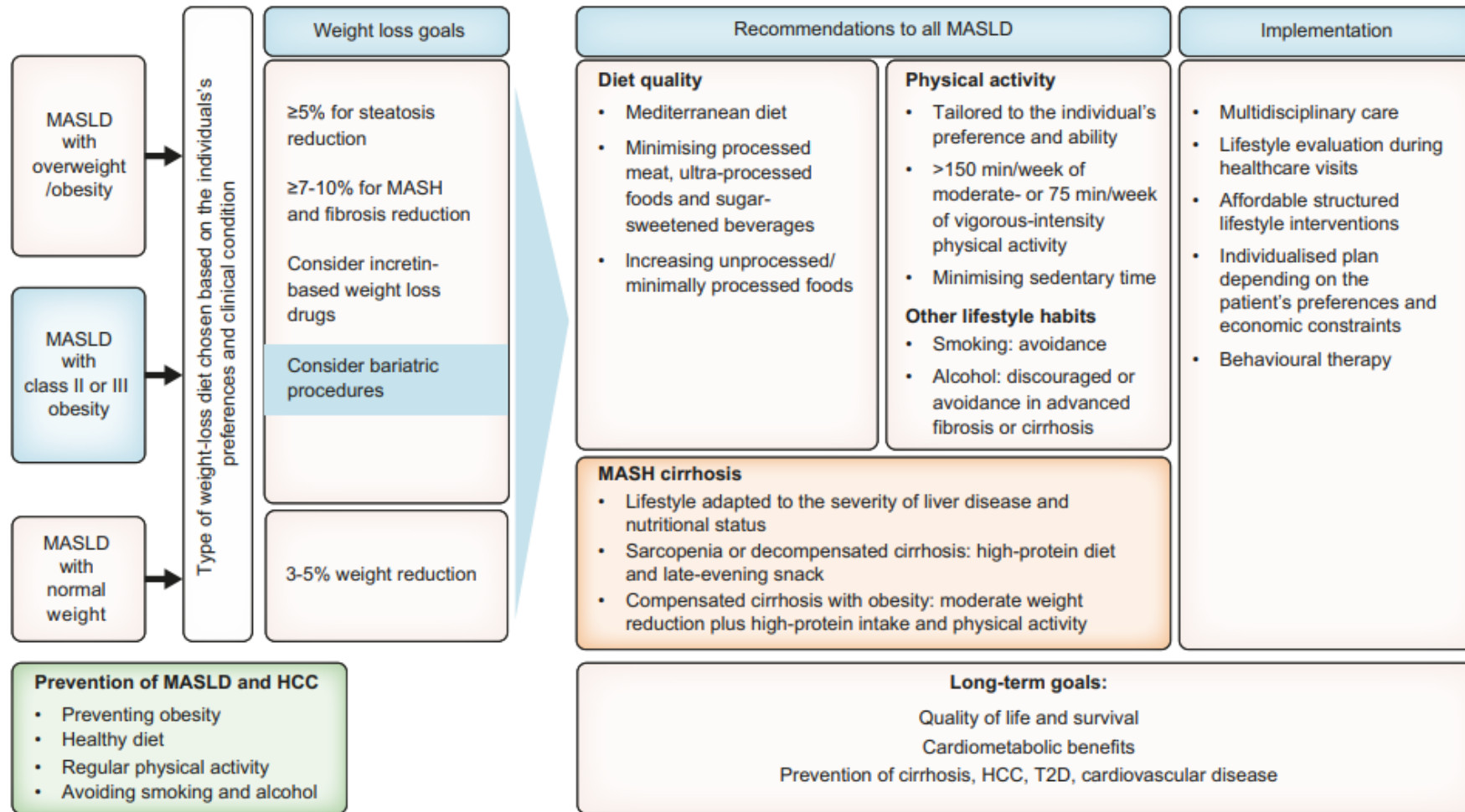


Fig. 3. Lifestyle management algorithm for MASLD. Note: Behavioural therapy includes: self-monitoring, clinicians providing affected individuals with self-efficacy and motivation, setting realistic negotiable goals, and overcoming barriers. Examples of unprocessed/minimally processed foods: vegetables, fruits (not juice), low-fat dairy, nuts, olive oil, legumes, unprocessed fish and poultry. Overweight/obesity: Overweight: BMI of 25–29.9 kg/m² (non-Asian) or 23–24.9 (Asian), Obesity: ≥30 kg/m² (non-Asian) ≥25 kg/m² (Asian). Class II obesity: BMI ≥35 kg/m² (non-Asian) or BMI ≥30 kg/m² (Asian). Normal weight: BMI <25 kg/m² (non-Asian) or <23 kg/m² (Asian). BMI, body-mass index; HCC, hepatocellular carcinoma; MASH, metabolic dysfunction-associated steatohepatitis; MASLD, metabolic dysfunction-associated steatotic liver disease; T2D, type 2 diabetes.

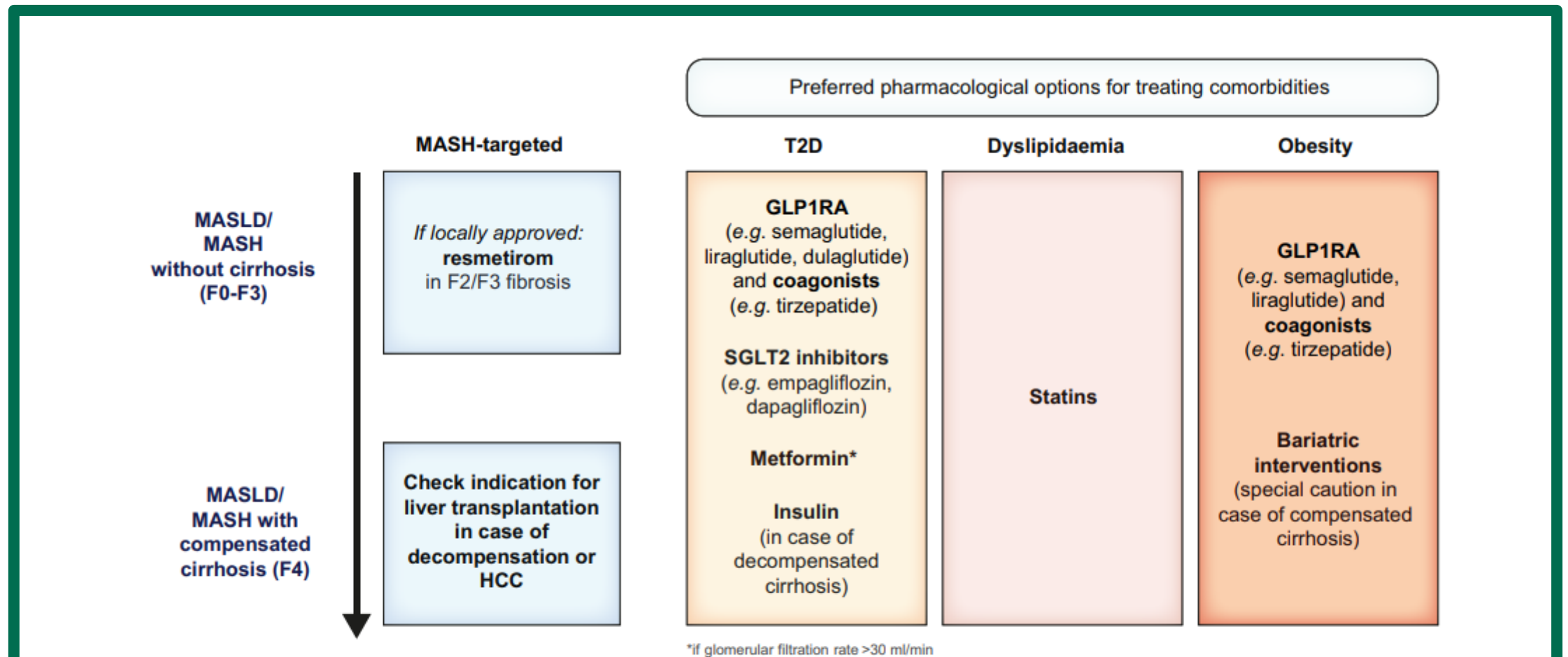
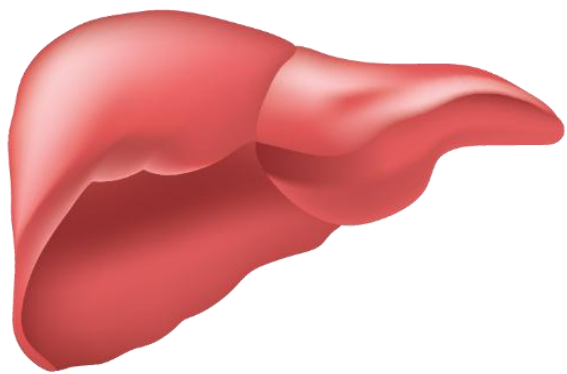
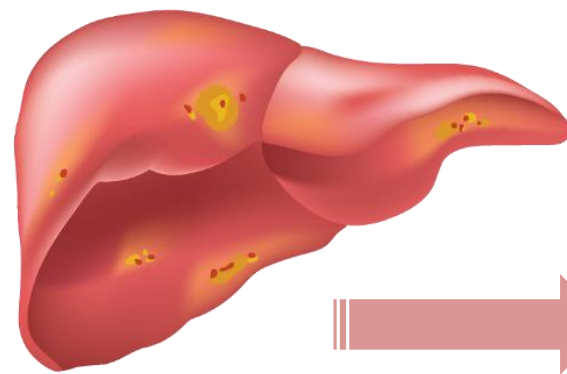


Fig. 4. Treatment recommendations beyond lifestyle modification in MASLD/MASH. The recommended choice of pharmacological treatment options in individuals with MASLD/MASH is dependent on comorbidities and stage of disease. GLP1RA, glucagon-like peptide 1 receptor agonist; HCC, hepatocellular carcinoma; MASH, metabolic dysfunction-associated steatohepatitis; MASLD, metabolic dysfunction-associated steatotic liver disease; SGLT2, sodium-glucose cotransporter 2; T2D, type 2 diabetes.

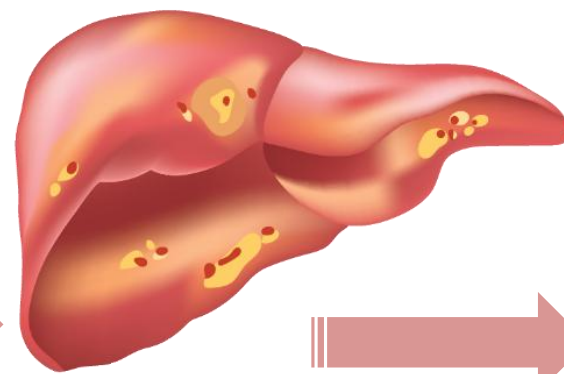
In loc de concluzii...



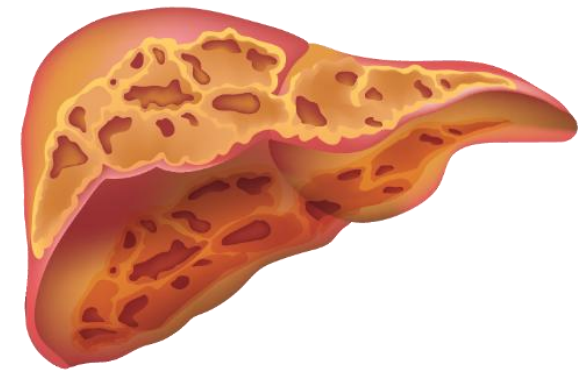
Ficat sănătos



MASLD - Ficat
steatotic



MASH- steatohepatita
asociata disfuncției
metabolic



Ciroză

