# Metabolic dysfunction-associated steatotic liver disease (MASLD)

RC GP LEARNING

## Introduction

### What is MASLD?

- New name for non-alcoholic fatty liver disease (NAFLD).
- Fat accumulation in the liver (steatosis) which isn't due to alcohol or other secondary causes.
- Renaming is due to concerns that NAFLD was stigmatising.
- NICE CKS and NHS website still say NAFLD 2y after the change, so the old name is likely to hang around for a while!

### Epidemiology and risk factors

- Commonest UK cause of abnormal LFTs.
- Global prevalence ~ 25%.
- Risk factors are those for other parts of the metabolic syndrome:
  - Central obesity.
  - Diabetes or non-diabetic hyperglycaemia (NDH, new name for pre-diabetes).
  - Hypertension.
  - Hyperlipidaemia.
- Other risk factors:
  - Sleep apnoea, polycystic ovarian syndrome (PCOS).
  - FH of MASLD.
  - Ethnicity (↑ Hispanic/Asian ↓ Black).
  - Use of total parenteral nutrition, refeeding syndrome.
  - Bariatric surgery and rapid weight loss.
  - Iatrogenic – NSAIDs, amiodarone, steroids, diltiazem, methotrexate, tamoxifen.
  - Other liver conditions – hepatitis C, Wilson's disease.

## Diagnosis

### When to suspect MASLD

- Metabolic risk factors and/or PCOS.
- Elevated liver transaminases (usually ≤3x upper limit of normal), particularly if:
  - ALT > AST.
  - Daily alcohol intake <2.5u (♀) or <3u (♂).
  - Negative liver screen bloods.
- ↑ echogenicity on ultrasound suggestive of fatty liver – scan may have been done for another reason.

### Investigation of possible MASLD in primary care

- Metabolic risk – BMI, BP, HbA1c, U&E, TFTs, lipids, QRisk.
- FBC, AST, clotting.
- Consider other causes before diagnosing MASLD:
  - Standard liver screen – hep B/C, ferritin, liver autoantibodies.
  - Also consider coeliac screen, copper (if <40) alpha-1 antitrypsin (if +ve FH) and look for panhypopituitarism (associated with MASLD).

## Risk stratification in primary care

### Why risk stratify?

- Risk stratification tailors referral for those who need it (only those at risk of fibrosis/cirrhosis).
- If referral not needed:
  - Encourage Mediterranean diet and regular exercise.
  - Manage BP, DM, lipids and obesity.
  - Smoking cessation and avoid alcohol.
  - Signpost to patient information from the NHS or British Liver Trust.
- If referred:
  - Transient elastography to assess for fibrosis – if none, usually discharged for management as above.
  - If present, ongoing monitoring for development of cirrhosis/liver failure/hepatocellular carcinoma.
  - Increasingly common cause of liver transplant.

### Complications and how to risk stratify

- Complications - portal hypertension, oesophageal varices, cirrhosis, liver failure, hepatocellular carcinoma, sepsis (rare).
- ↑ risk of metabolic syndrome complications e.g. AF, MI, stroke, death from CVD. This is much more common than death from direct liver causes.
- Risk stratification options:
  - Fib-4 = $\frac{\text{Age x AST}}{\text{Platelets x } \sqrt{\text{ALT}}}$
  - NAFLD fibrosis score (NFS) – lengthy formula using age, BMI, presence/absence of NDH/diabetes, AST, ALT, platelet count and albumin.
  - ELF test – requested from lab, measures 3 direct indicators of liver fibrosis.
- Possible referral pathway (check your local one):
  - Fib-4 <1.3 / ELF ≤9.8 / NFS < -1.455 = fibrosis very unlikely, manage in primary care.
  - Scores above these, refer to hepatology for transient elastography.
  - If transient elastography available in primary care, ≥ 8.0 kPa is cut-off for hepatology referral.