MASH IN CLINICAL PRACTICE

What to assess, when to act,
and how to integrate liver health into obesity treatment

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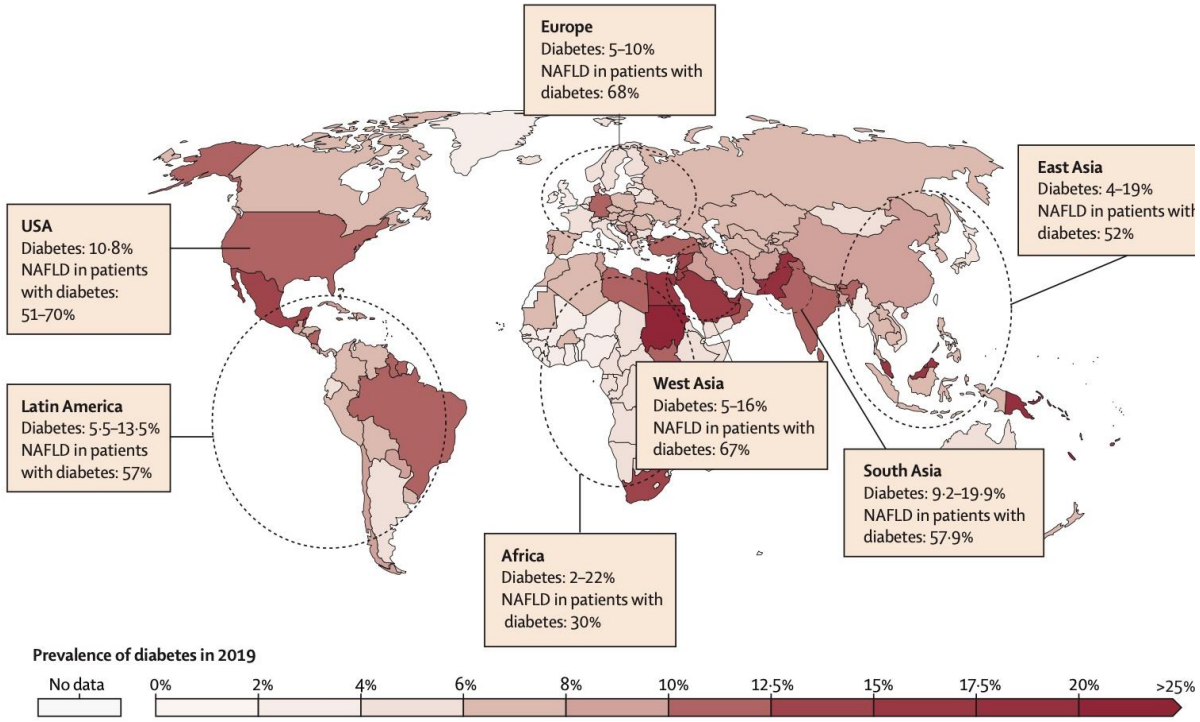
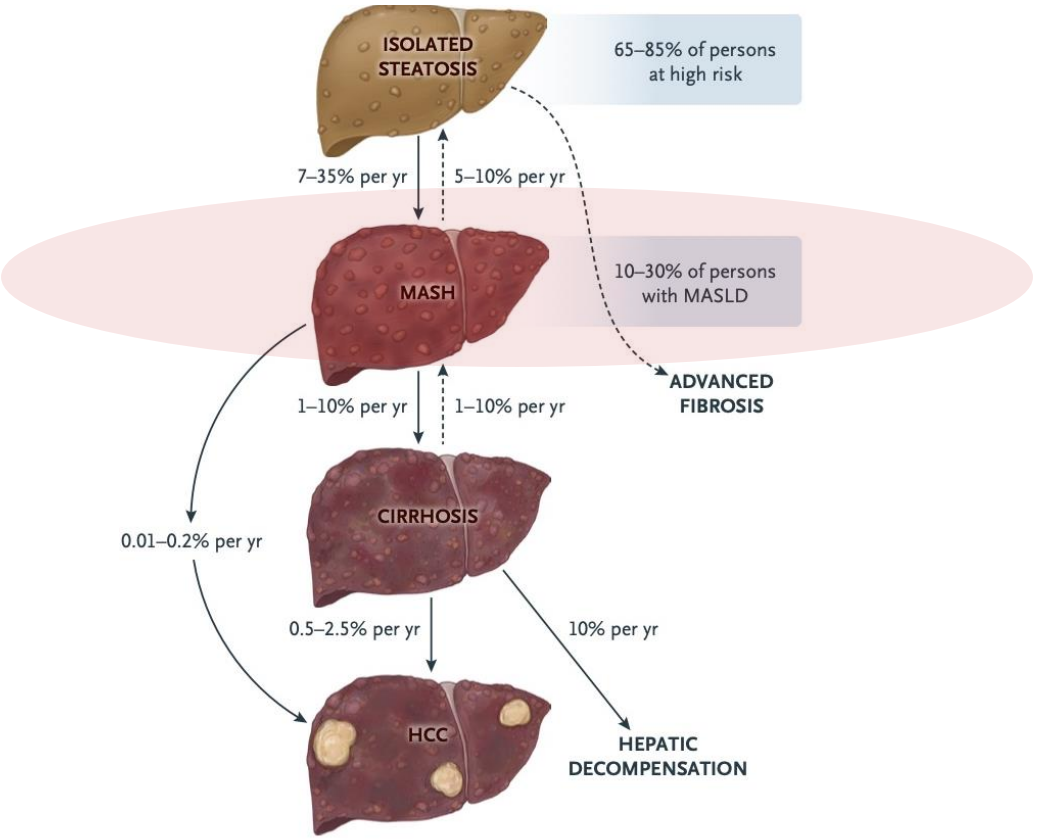
IFSO 2026 · Toronto

MASLD -> the next metabolic frontier



Stefan & Cusi *Lancet Endocrinol Diabetes* 2022



Valenti et al New Engl J Med 2025

THE PREMISE

We are already treating the liver — we just don't measure it

87–89%

have MASLD on biopsy
at bariatric surgery

13.5%

already have advanced
fibrosis (F3–F4)

1–2%

have cirrhosis — 90%
discovered on the table

MASH is not a finding we report. It is a disease we are already operating on — usually without knowing its stage.

ASMBS Position Statement, Surg Obes Relat Dis 2022 (n=496 paired biopsies) · Younus, Obes Surg 2020 (1.5% unexpected cirrhosis) · Dallal (1.4%)

CONTEXT

Three things changed the conversation

2023

A new name — and a new category

NAFLD → MASLD, NASH → MASH. And MetALD for the 20–50 g/day drinker: a category we create in our own post-bypass patients.

2024–25

Two drugs approved on histology

Resmetirom (FDA 3/2024, EU 8/2025) and semaglutide 2.4 mg (FDA 8/2025, EU 3/2026). Both non-cirrhotic F2–F3 only.

2026

Surgery gets outcome data in cirrhosis

SPECCIAL: 72% fewer major adverse liver outcomes at 15 years in compensated MASH cirrhosis. No drug has that.

Rinella, Hepatology & J Hepatol 2023 · Harrison, NEJM 2024 · Sanyal, NEJM 2025 · Aminian, Nat Med 2025

PART 1

What to assess

Stop screening for fatty liver. Start staging fibrosis.

WHAT TO ASSESS

Only one question changes what you do

The useless question

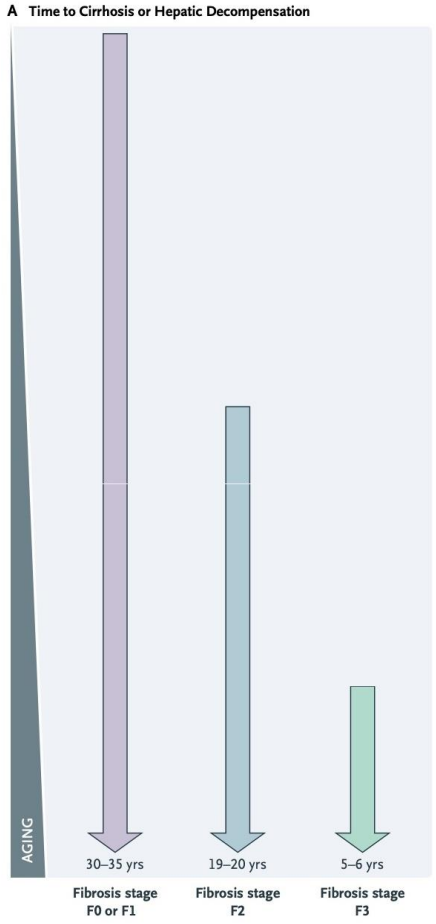
“Does this patient have MASLD?”

Every candidate with steatosis and BMI ≥ 25 meets the definition. The cardiometabolic criteria have zero discriminating power in our clinic.

The question that matters

“How much fibrosis?”

Fibrosis stage — not steatosis, not ALT — sets the clock to cirrhosis. Everything else is descriptive.



Valenti et al. N Engl J Med 2025

Guidelines now name surgery explicitly

EASL–EASD–EASO 2024

Case-find in abdominal obesity + ≥ 1 metabolic risk factor. Co-published in Obesity Facts — an obesity guideline too.

AGA Care Pathway 2026

Overweight/obesity + ≥ 1 risk factor is a screening population. FIB-4 first, repeat every 1–2 years.

ADA 2026

FIB-4 in all adults with T2D, even with normal liver enzymes. FIB-4 > 2.67 → liver specialist.

EASL–EASD–EASO, J Hepatol 2024;81:492–542 · Kanwal, Gastroenterology 2026 (AGA pathway update) · ADA Standards of Care 2026, Section 4

Pre-operative liver assessment in three steps

Take a picture of this slide.

1 Screen FIB-4 in every surgical candidate

Age, AST, ALT, platelets — free, already in the chart.

< 1.3	(< 2.0 if ≥ 65 y) → low risk. Operate. Repeat every 1–2 years.
≥ 1.3	→ go to step 2.

2 Second-line test

Elastography (VCTE) with the XL probe, or MRE.

LSM < 8 kPa · ELF < 9.2	→ low risk. Operate.
LSM 8–12 kPa	→ indeterminate. Consider intra-operative core biopsy.
LSM ≥ 12 kPa · ELF > 9.8	→ hepatology BEFORE the OR.

3 Any sign of chronic liver disease

Cross-sectional imaging + upper endoscopy. Multidisciplinary decision.

EASL–EASD–EASO, J Hepatol 2024 · AASLD Practice Guidance, Hepatology 2023 · AGA Clinical Care Pathway, Gastroenterology 2026 · ASMBS, SOARD 2022

Why the pathway fails in class III obesity

1

Don't use NFS

It systematically over-stages above BMI 40. In 368 biopsy-proven patients (median BMI 50.8): AUROC 0.750 for NFS vs 0.904 for FIB-4.

Use FIB-4 (or Liver risk Score)

2

Use the XL probe — and XL cut-offs

M-probe failure historically up to ~50%. XL probe: 88% success pre-op, 100% at follow-up. EASL: class-2 obesity "cannot be reliably examined" by several ultrasound techniques.

MRE if available.

3

A normal FIB-4 is not reassurance

FIB-4 misses ~10% of advanced fibrosis and performs worst in T2D and in the 1.3–2.67 grey zone — exactly our population.

Low threshold to test twice.

One test holds up

AUROC for significant fibrosis (F ≥ 2), Lille cohort — the Liver Risk Score is the only one that gets better after surgery.

	Baseline	*1 year*	*5 years*
FIB-4	0.71	0.75	0.69
NFS	0.68	0.68	0.75
Liver risk score	**0.79**	**0.77**	**0.90**

Drolz, Int J Obes 2021;45:2197–2204 · Yang, Sci Rep 2021;11:14006 · EASL–EASD–EASO, J Hepatol 2024 · AUROC table: Raverdy V, et al. Metabolism 2024 (Lille cohort)

Selective needle biopsy — never a wedge

WHEN

- Indeterminate LSM (8–12 kPa) plus high-risk features: age, T2D, hypertension, hypertriglyceridaemia
- Elastography impossible or unreliable
- A liver that looks wrong at laparoscopy

HOW

- 16-gauge core, 2 cm, target 10 portal tracts
- Not a wedge — subcapsular septa over-stage fibrosis
- Report as NAS + fibrosis stage, so it can be compared later

What it actually costs — MBSAQIP 2020–2022, n = 511,981 (6.0% concomitant biopsy)

+12.5 min

operative time
96.1 vs 83.6 min

OR 1.20

bleeding (1.02–1.42)
transfusion OR 1.17

OR 0.91

major complications
(0.79–1.04) — NS

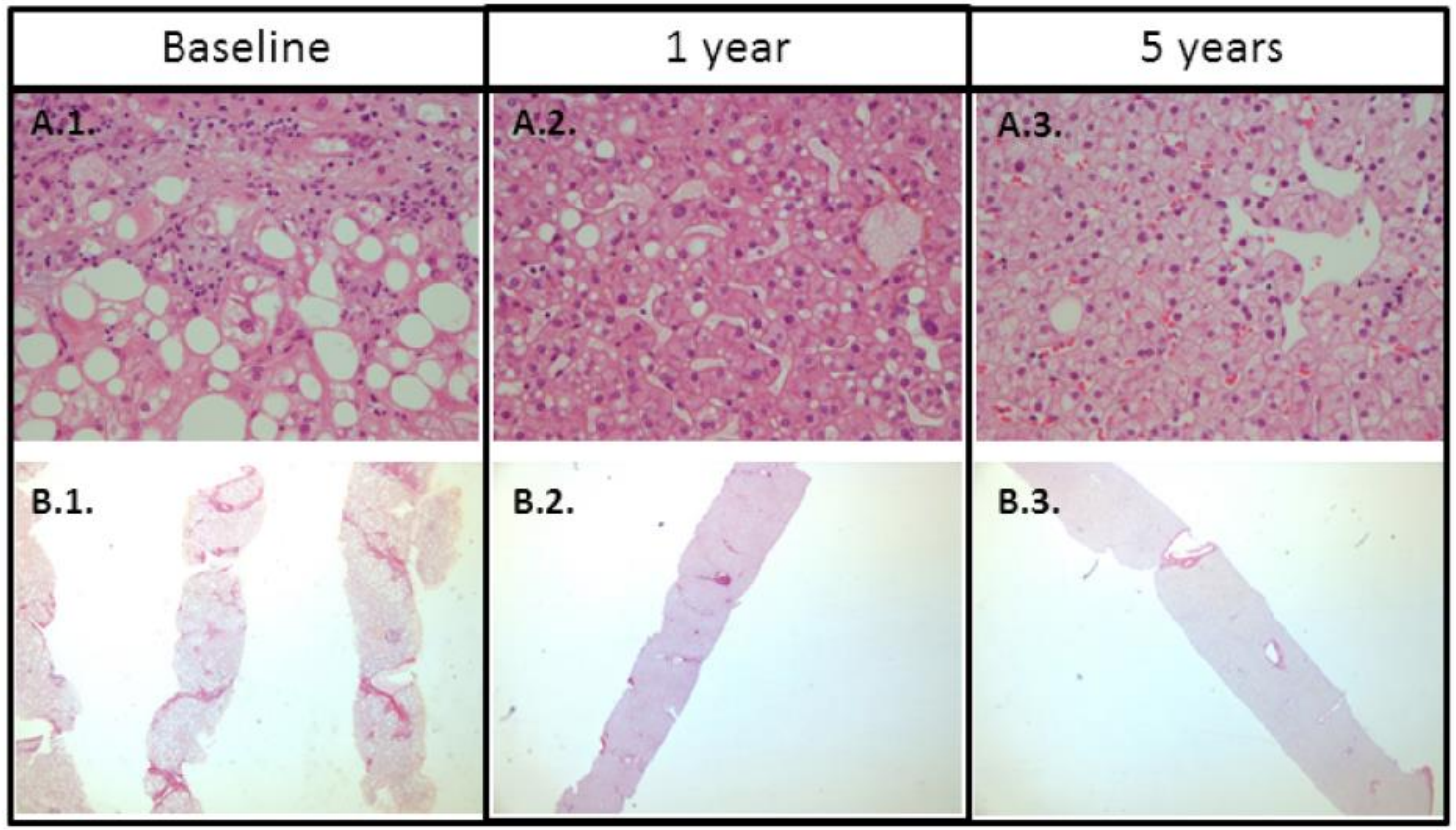
Barajas-Gamboa, Obes Surg 2025;35:4752–4765 · ASMBS Position Statement, SOARD 2022

PART 2

When to act

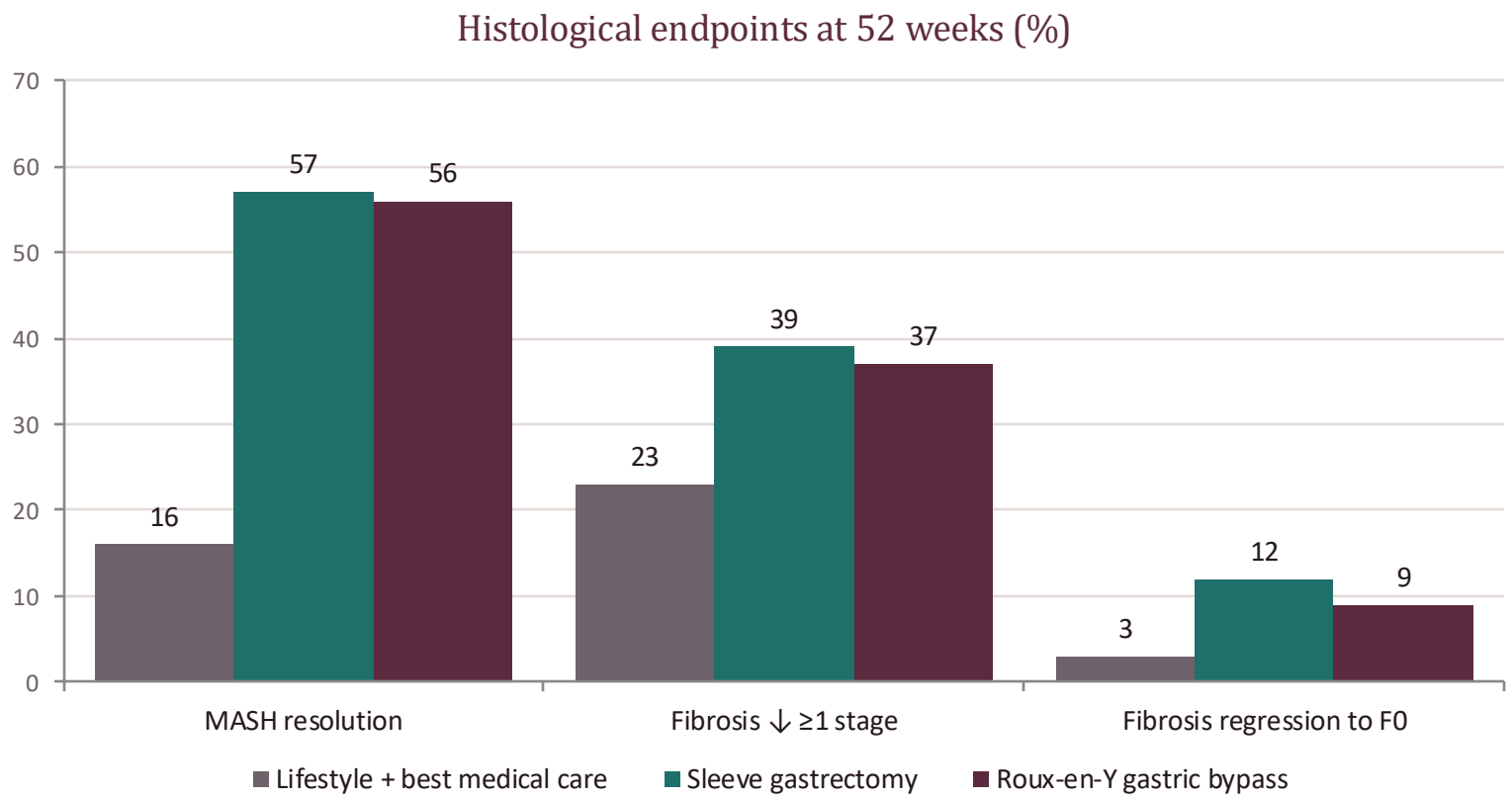
The best-documented MASH therapy in medicine is the one we already perform.

Complete postoperative resolution of MASH



Lassailly G et al. *Gastroenterology 2015 &* 2020

BRAVES: the only randomised histological trial

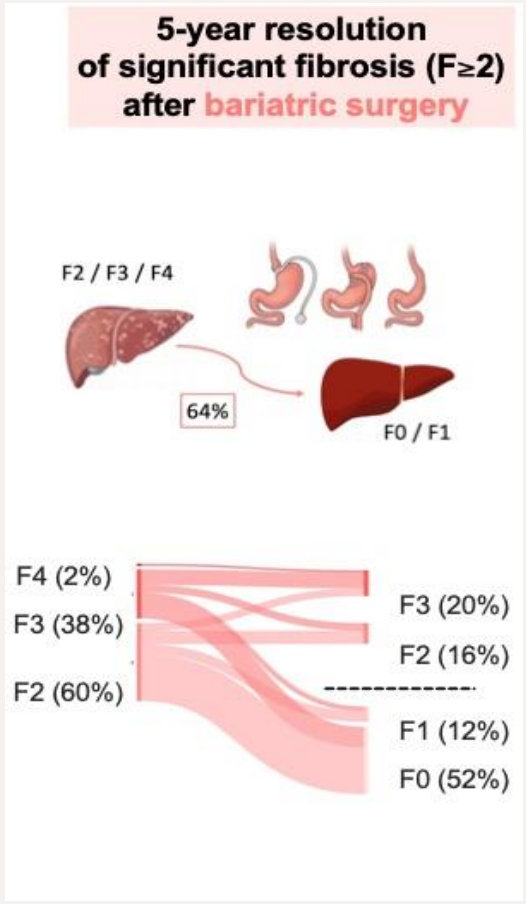


Read this

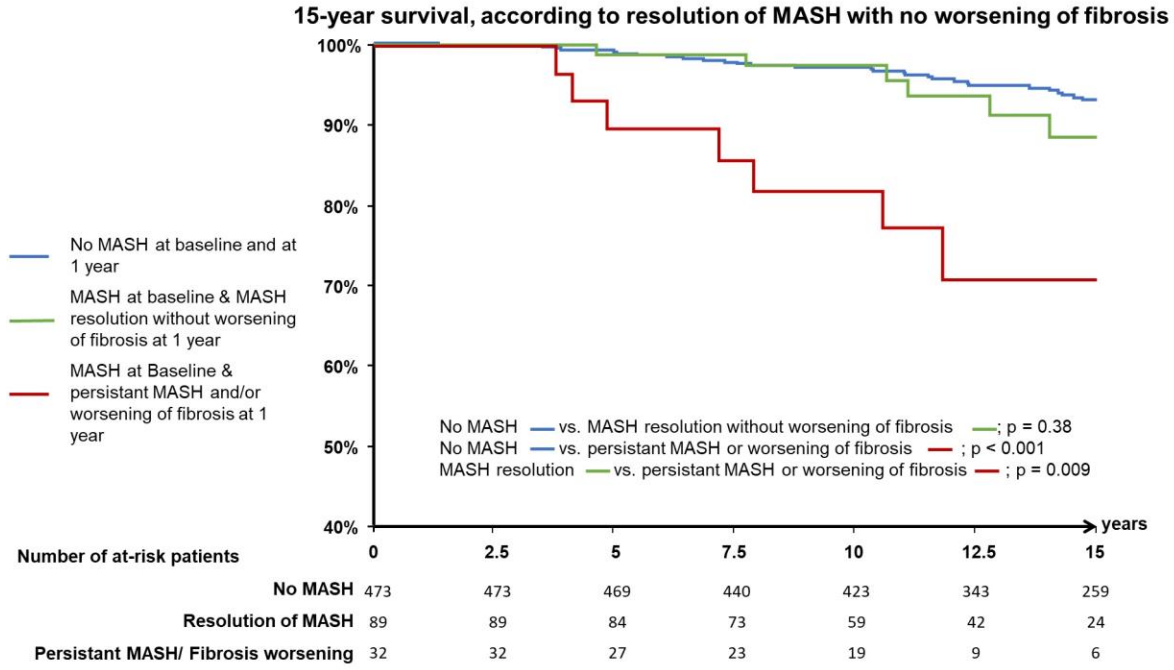
- RR vs lifestyle: 3.67 (2.23–6.02) sleeve, 3.60 (2.19–5.92) bypass — both $p < 0.0001$
- Sleeve = bypass on histology. The procedure war is not a liver argument.
- No deaths, no life-threatening complication, no reoperation. 6% severe adverse events.
- 288 randomised, 3 centres, 236 paired biopsies at 52 weeks.

Verrastro O, et al. Bariatric–metabolic surgery vs lifestyle intervention plus best medical care in NASH (BRAVES). Lancet 2023;401:1786–1797

The effect deepens with time — five years, then fifteen



Fibrosis stage, baseline → 5 years



Lassailly G, et al. Clin Gastroenterol Hepatol 2025 · Raverdy V, et al. Metabolism 2024

84%
MASH resolution
at 5 years

70%
fibrosis regression
≥ 1 stage

64%
of F2–F4 back
to F0 / F1

HR 2.54
for death if MASH
persists at 1 year
(1.06–6.10; p = 0.04)

Lassailly G, …, Pattou F, Mathurin P. Gastroenterology 2020;159:1290–1301 · Lassailly G, et al. Clin Gastroenterol Hepatol 2025 (n=594) · Raverdy V, et al. Metabolism 2024

What surgery actually prevents

WITHOUT CIRRHOSIS

SPLENDOR

JAMA 2021 · n = 1,158 biopsy-proven MASH F1–F3 · 650 surgical · 10-year follow-up

Major adverse liver outcomes at 10 y

2.3% vs 9.6% HR 0.12

Major adverse cardiovascular events

8.5% vs 15.7% HR 0.30

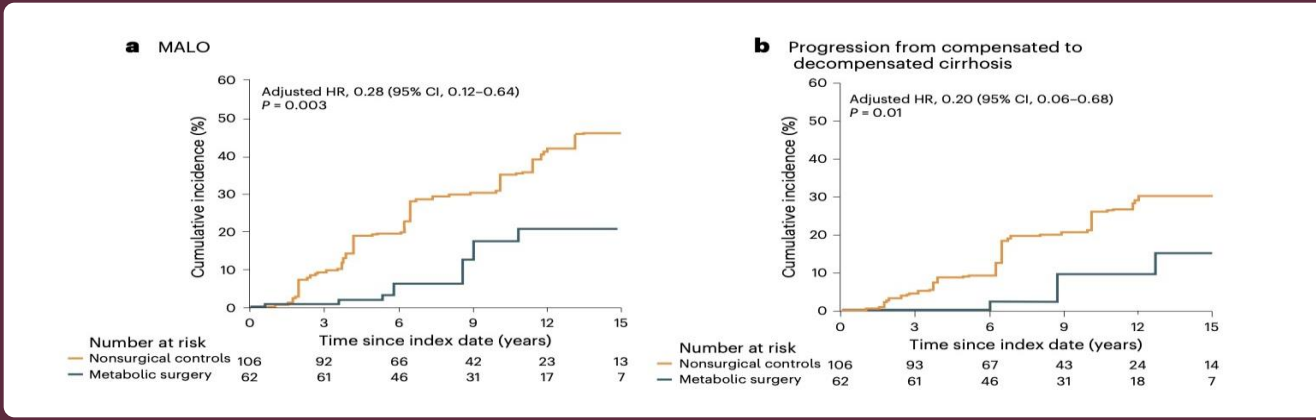
Surgical mortality at 1 year

0.6%

WITH COMPENSATED CIRRHOSIS

SPECCIAL

Nature Medicine 2025 · n = 168 · 62 surgical mean follow-up 10 years



Metabolic surgery cut major adverse liver outcomes by 72% and decompensation by 80% at 15 years.

This is currently the only therapy with outcome data in compensated MASH cirrhosis. No drug has that.

Aminian A, et al. JAMA 2021;326:2031–2042 · Aminian A, et al. Nat Med 2025;31:988–995

WHEN TO ACT · SAFETY

When to act — and when to stop

GO

Compensated cirrhosis, no clinically significant portal hypertension

High-volume centre, hepatologist in the room, documented multidisciplinary decision. In-hospital mortality comparable to non-cirrhotic patients: aOR 1.88 (0.65–5.46), NS.

CAUTION

Portal hypertension, or any doubt about compensation

Mandatory cross-sectional imaging + upper endoscopy. Prefer sleeve gastrectomy: RYGB carries aOR 3.90 (1.79–8.48) for mortality in cirrhosis. Risk-stratify with VOCAL-Penn, not MELD or Child-Pugh alone; refer for transplant assessment if predicted 90-day mortality > 15%. TIPS as a bridge in selected cases.

STOP

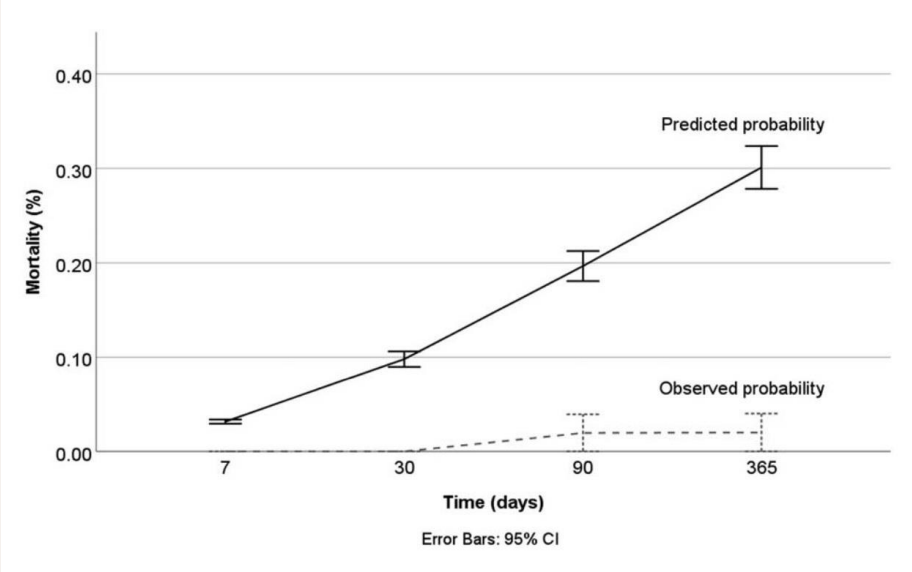
Decompensated cirrhosis — absolute contraindication

aOR 83.8 (19.3–363.8) for mortality. Only with, or after, liver transplantation. Ascites, varices or large perigastric collaterals found at laparoscopy → biopsy, close, refer.

Obes Surg 2020 (n=558,017) · Esparham, Surg Endosc 2026 · ACG perioperative guideline, Am J Gastroenterol 2025 · AGA Clinical Practice Update on bariatric surgery in cirrhosis · AASLD 2023 · EASL 2024

Two numbers that decide surgical outcome in cirrhosis

MELD massively over-predicts death after metabolic surgery



106 MBS patients with cirrhosis · Vuppalanchi et al. Ann Surg 2022

Where it is done matters more

9,802 patients with cirrhosis among 1,679,828 bariatric admissions, USA 2004–2016

	Low vol.	*High vol.*	*adj. OR*
In-hospital death	7.89%	1.44%	**4.50**
Sepsis	9.55%	1.28%	**6.86**
Pneumonia	5.26%	0.74%	**7.14**
Acute kidney injury	12.01%	4.02%	**2.76**

Are VS, et al. Am J Gastroenterol 2020

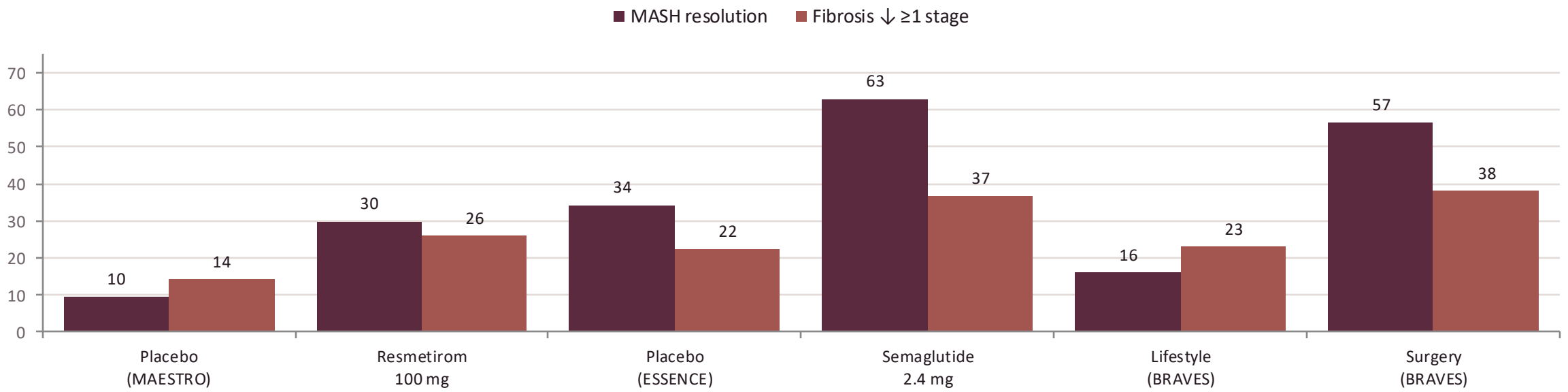
Predicted 1-year mortality 27%. Observed 2.8%. The gap between centres is wider than the gap between patients — so the question is not only whether to operate, but where.

PART 3

How to integrate

Drugs did not replace us. They gave us a second move.

Two approved drugs — both non-cirrhotic F2–F3 only



Surrogate endpoints only

Both approvals are accelerated / conditional on histology. No hard liver outcome data yet, for either drug.

Cirrhosis is excluded

AASLD: rule out with VCTE > 20 kPa, MRE > 5.0 kPa or ELF > 11.3 before prescribing.

No combination data

No trial of resmetirom + semaglutide. AASLD explicitly makes no recommendation.

Harrison, NEJM 2024;390:497–509 (52 wk) · Sanyal, NEJM 2025;392:2089–2099 (72 wk) · Verrastro, Lancet 2023 (52 wk) · AASLD semaglutide guidance update, Hepatology 2025. Pipeline: survodutide, efruxifermin, pegozafermin, efimosfermin, lanifibranor — phase 3 read-outs 2026–2028

HOW TO INTEGRATE · THE PATHWAY

Not competitors. A sequence.

BEFORE

Stage, and co-manage

FIB-4 ± elastography in everyone. Hepatology involved if LSM ≥ 8 kPa. GLP-1 bridging is now routine — follow the multisociety peri-operative guidance (risk-stratified, 24-hour clear liquids) rather than local improvisation.

AT SURGERY

Document the liver

Selective core biopsy. Describe what you see. A liver you never staged is a liver you cannot follow.

AT 12 MONTHS

Re-stage — and act again

Re-stage with the Liver Risk Score, not FIB-4. Persistent MASH with insufficient weight loss, or weight regain with F2–F3, is now a pharmacotherapy indication. That is not surgical failure — it is the second move.

FOREVER, IF F3–F4

Never discharge

Stays in hepatology: 6-monthly HCC surveillance, variceal screening. Fibrosis regression does not abolish HCC risk.

There is no randomised comparison of surgery versus incretins on liver outcomes. Two large databases point in opposite directions. Nobody should tell you this question is settled.

Multisociety peri-operative GLP-1 guidance (ASA/AGA/ASMBS/ISPCOP/SAGES) 2024–2025 · Hussein, Endocrinol Diabetes Metab 2025 · Wu, Hepatol Int 2025

Two mistakes we make after the operation

1

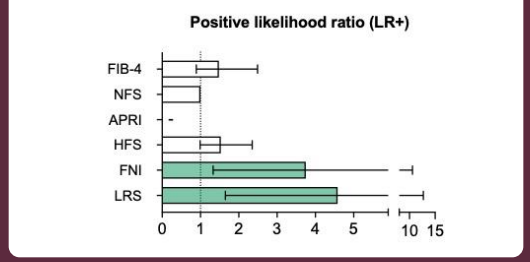
A falling FIB-4 is not fibrosis regression

- By 3 months: CAP 341 → 277 dB/m, LSM 5.6 → 4.8 kPa (n = 93). That is de-steatosis, not de-fibrosis.
- FIB-4 is driven by transaminases and platelets — both move with fat and nutrition after surgery.
- No blood score was validated for post-treatment monitoring — FIB-4's AUROC falls to 0.69 at five years.

The Liver Risk Score is the exception

Predicting 5-year resolution of significant fibrosis (F≥2) with non invasive tests

NITs	Sensitivity	Specificity	Positive predictive value
FIB-4	0.79 (0.63 - 0.95)	0.47 (0.21 - 0.72)	0.74 (0.57 - 0.9)
NFS	1 (1 - 1)	0 (0 - 0)	0.65 (0.51 - 0.8)
APRI	0.21 (0.05 - 0.37)	1 (1 - 1)	1 (1 - 1)
HFS	0.92 (0.81 - 1.03)	0.4 (0.15 - 0.65)	0.74 (0.59 - 0.9)
FNI	0.75 (0.58 - 0.92)	0.8 (0.6 - 1)	0.88 (0.74 - 1.02)
LRS	0.92 (0.81 - 1.03)	0.8 (0.6 - 1)	0.9 (0.78 - 1)



Se 0.92 · Sp 0.80 · PPV 0.90 for 5-year resolution of F ≥ 2. FIB-4 and NFS: no information.

2

Alcohol is the liver risk we create

- Alcohol use disorder after surgery: 2–33%, peaking in year 2. Unhealthy use at 8 years: 9.2% after RYGB vs 4.4% in controls.
- After RYGB, ~26 g of alcohol exceeds the legal driving limit in under 10 minutes.
- A patient drinking 20–50 g/day post-op is no longer MASLD. They are MetALD — and our guidelines do not transfer.

There is no validated safe level of alcohol after bariatric surgery.

Nixdorf, Sci Rep 2024;14:17558 · Raverdy V, et al. Metabolism 2024 (Lille cohort) · Alcohol-associated liver disease and bariatric surgery, World J Gastrointest Surg 2024;16:650 · Kim, Clin Gastroenterol Hepatol 2022

TAKE HOME

Five things to change

1. FIB-4 (or liver Risk score) on every candidate. Free, already in the chart. Age-adjust at 65. Never NFS.
2. FIB-4 ≥ 1.3 / LRS >6 → elastography with the XL probe. ≥ 8 kPa → hepatologist before the OR.
3. Biopsy selectively, core not wedge. Twelve minutes, no excess mortality, a real bleeding signal.
4. Compensated cirrhosis is an indication, not a contraindication. Sleeve, high-volume centre, portal hypertension work-up. Decompensated is a red line.
5. The liver follow-up never ends. Re-stage at one year — with the Liver Risk Score, not FIB-4. F3–F4 stays in hepatology for life. Ask about alcohol at every visit.

"We already have the most effective MASH therapy in medicine.
Our job now is to stop delivering it blind."

XXX IFSO WORLD CONGRESS

"Advancing Multimodal Obesity Care"

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IFSO PARIS 2027

See you in

PARIS

BACKUP 1

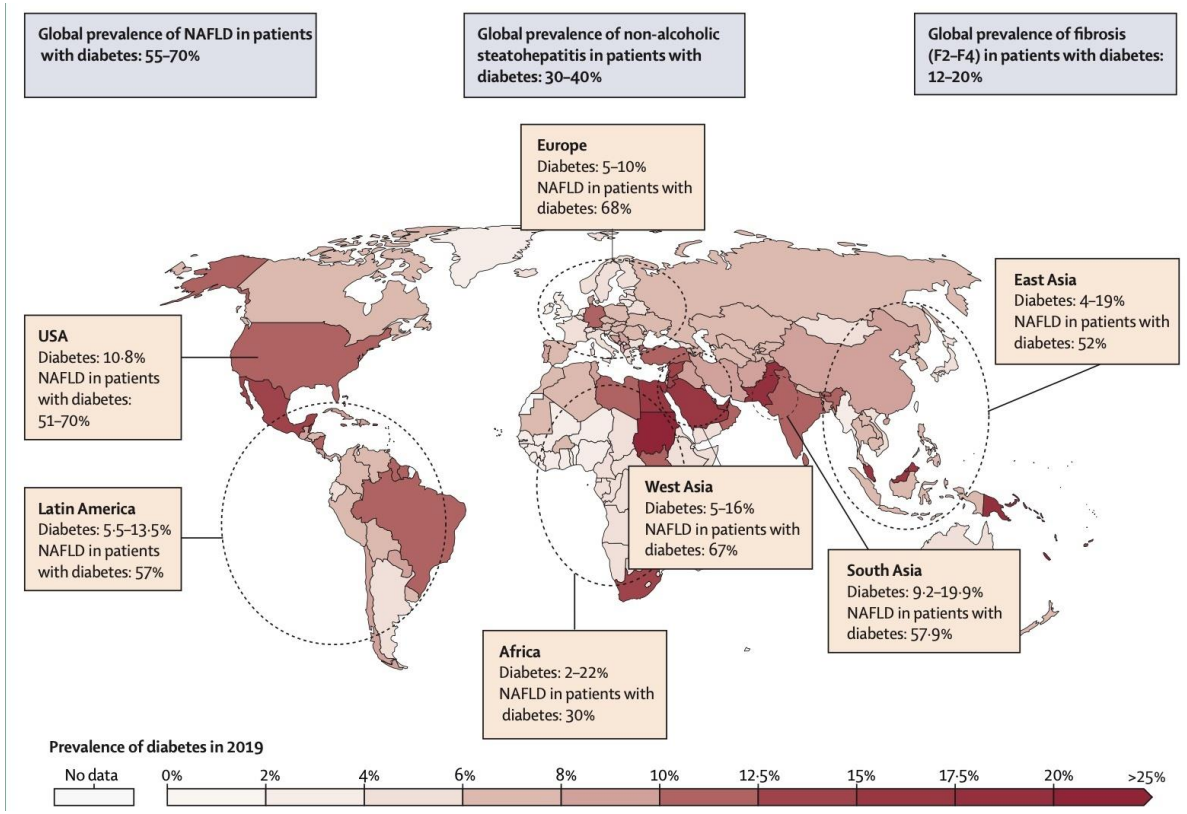
Epidemiology — why this will not go away

38% global adult MASLD prevalence, +50% since 1990–2006

55% projected global prevalence by 2040

68.8% MASLD prevalence in type 2 diabetes

14.5 HCC per 1,000 person-years in advanced fibrosis (vs 1.25 overall)



Stefan & Cusi. Lancet Diabetes Endocrinol 2022

In biopsy series at bariatric surgery: MASH 35–69%, significant fibrosis 9–20%, cirrhosis 1–2%. MASH is the leading indication for liver transplantation among women.

Younossi, Kalligeros, Henry. Clin Mol Hepatol 2025;31(Suppl):S32–S50

BACKUP 2

Surgery vs GLP-1: two databases, opposite answers

Favours surgery

Hussein, Endocrinol Diabetes Metab 2025 · TriNetX · 33,594 per group after matching · ~3.7 years

- New-onset MASH: HR 0.51 (0.47–0.55)
- Hepatocellular carcinoma: HR 0.30 (0.10–0.93)
- Cirrhosis: HR 0.87 (0.70–1.08), not significant
- But all-cause mortality: HR 1.17 (1.08–1.27) — higher in the surgical arm

Favours the drug

Wu, Hepatol Int 2025 · TriNetX · tirzepatide vs surgery · 6,199 per group after matching

- Major adverse liver outcomes: 0.8 vs 2.0 per 100 person-years, HR 0.32 (0.22–0.48)
- All-cause mortality: 0.4 vs 0.9 per 100 person-years, HR 0.36 (0.21–0.63)

Both are retrospective, both are vulnerable to indication bias and immortal-time bias, and the surgical patients are heavier and sicker at baseline.
Neither is a head-to-head comparison. There is no randomised trial.

BACKUP 3

What the guidelines actually say about us

EASL–EASD–EASO 2024 · non-cirrhotic MASLD — *Strong recommendation*

"Bariatric surgery should be considered, because it can induce long-term beneficial effects on the liver and is associated with remission of type 2 diabetes and improvement of cardiometabolic risk factors."

EASL–EASD–EASO 2024 · compensated cirrhosis — *Weak recommendation*

"Bariatric surgery can be considered, but careful evaluation — indication, type of surgery, presence of clinically significant portal hypertension — by an experienced multidisciplinary team is required."

AASLD Practice Guidance 2023 · Statement 22 — *Guidance statement*

"Bariatric surgery should be considered as a therapeutic option in patients who meet criteria for metabolic weight loss surgery, as it effectively resolves NAFLD or NASH in the majority of patients without cirrhosis and reduces mortality from CVD and malignancy."

ASMBS / IFSO 2022 indications — *Joint position*

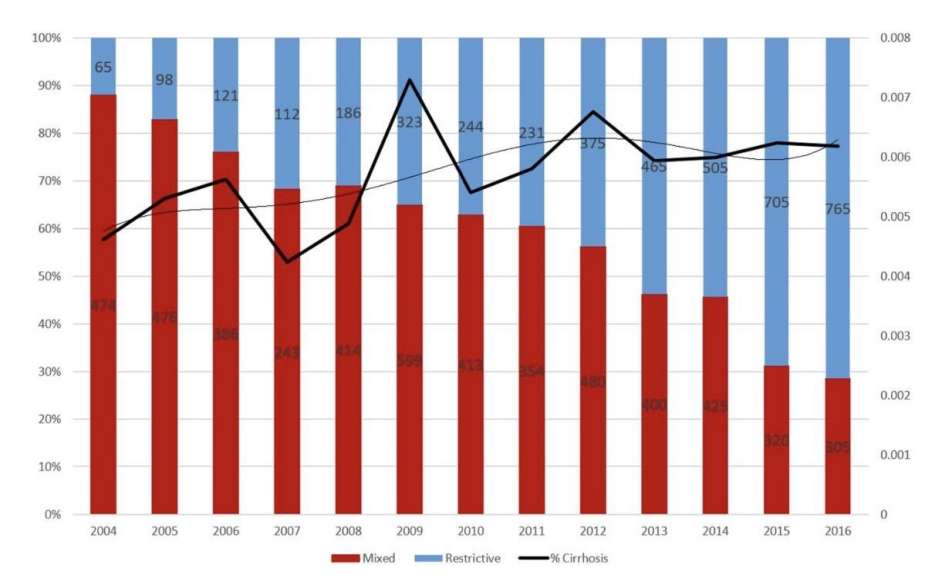
"Metabolic and bariatric surgery is associated with an 88% risk reduction of progression of NASH to cirrhosis."

There is no standalone IFSO position statement on MASLD. The 2022 ASMBS/IFSO indications document is the reference.

BACKUP 4

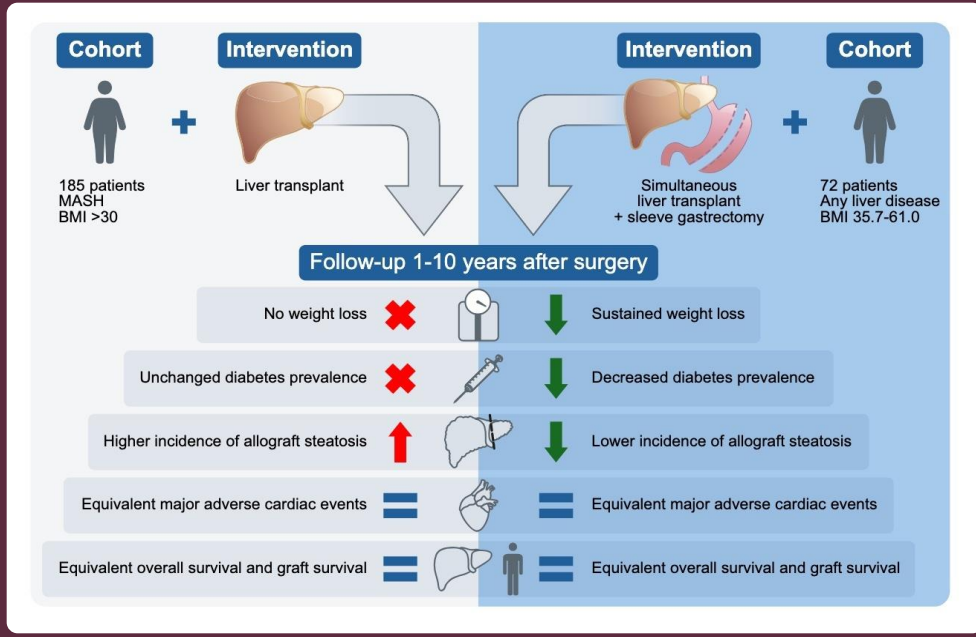
Which procedure — and what about transplantation?

Procedure choice in compensated cirrhosis



US practice has already shifted from mixed to restrictive procedures in cirrhotic patients — 1,679,828 admissions, 9,802 with cirrhosis (0.58%).

Liver transplant + sleeve gastrectomy



157 patients with MASH cirrhosis: LT + SG gave sustained weight loss, less diabetes and less allograft steatosis — with equivalent survival.

Are VS, et al. Am J Gastroenterol 2020 · Larsen M, et al. J Hepatol 2025 · Verrastro O, et al. Lancet 2023 (sleeve = bypass on histology)