VCU
Stravitz-Sanyal Institute for
Liver Disease and Metabolic Health
School of Medicine

STRAVITZ-SANYAL INSTITUTE

MetALD: An Emerging Diagnosis Changing ALD Care Before and After Transplant

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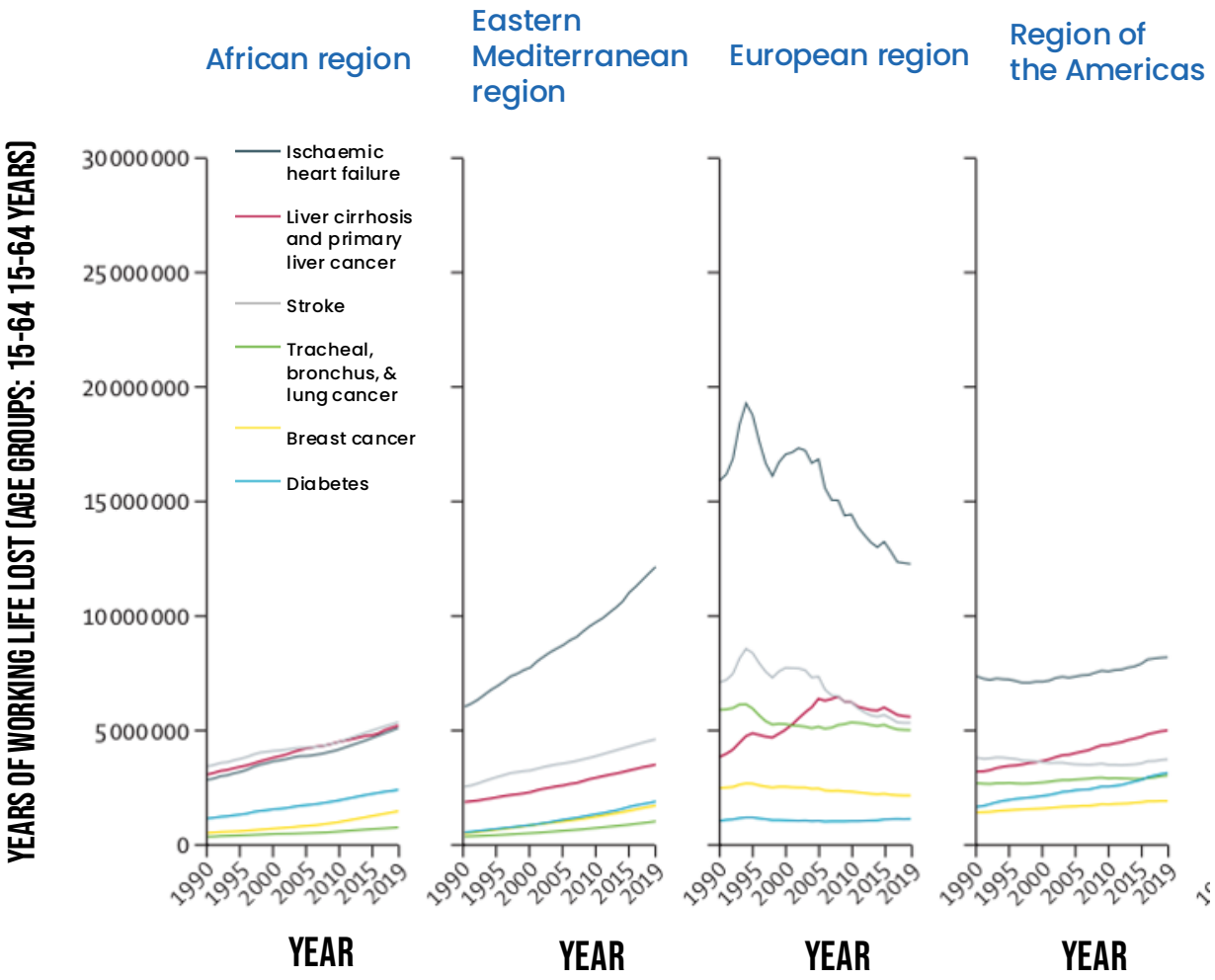
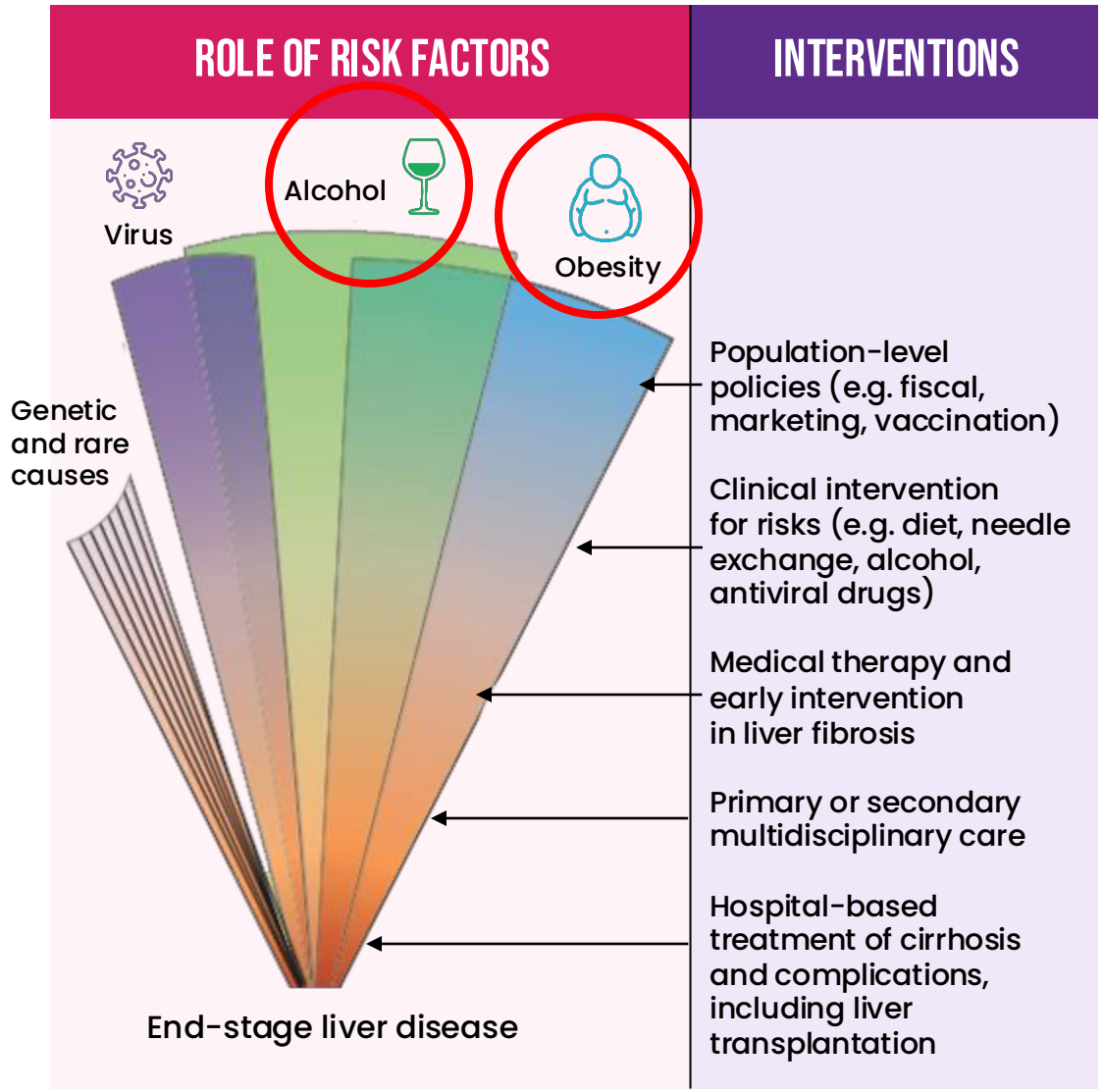
Aims

- To understand the **epidemiology** of MetALD and ALD
- To discuss **differences and overlapping** features of MASLD and ALD
- To recognize the importance in distinguishing these phenotypes for **tailored clinical interventions**
- To discuss the impact of implementing **public health policies**

Potential years of working life lost, and leading causes by WHO region



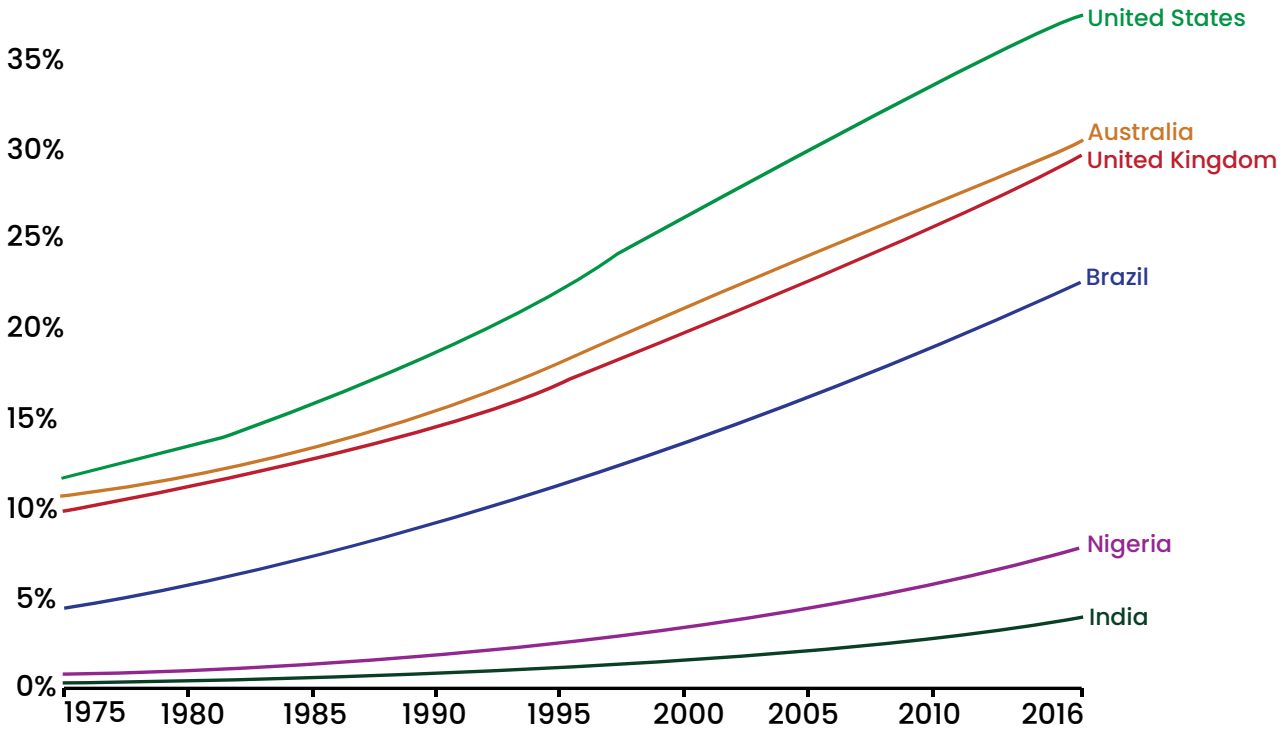


Modified from Karlsen TH, et al. Lancet 2022

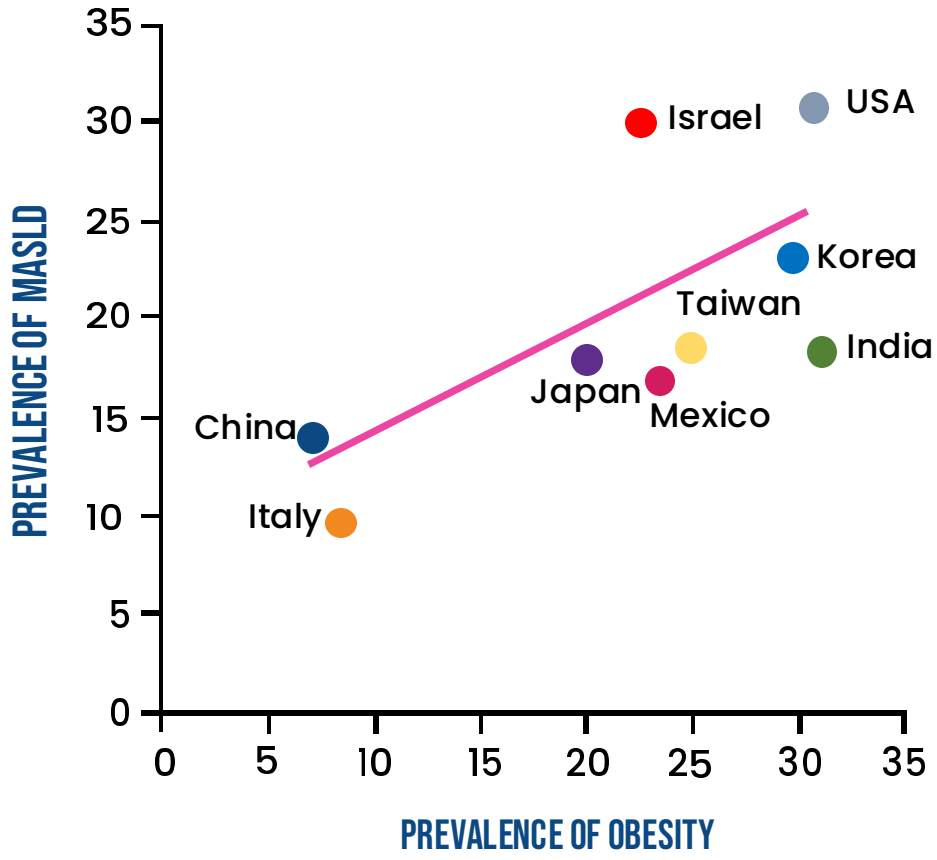
OBESITY PREVALENCE AND RELATION TO MASLD

SHARE OF ADULTS THAT ARE OBESE, 1975 TO 2016

Obesity is defined as having a body-mass index (BMI) equal to, or greater than, 30. BMI is a person's weight (in kilograms) divided by their height (in meters) squared.



https://ourworlddata.org/obesity



Lazo M. Semin Liver Dis. 2008

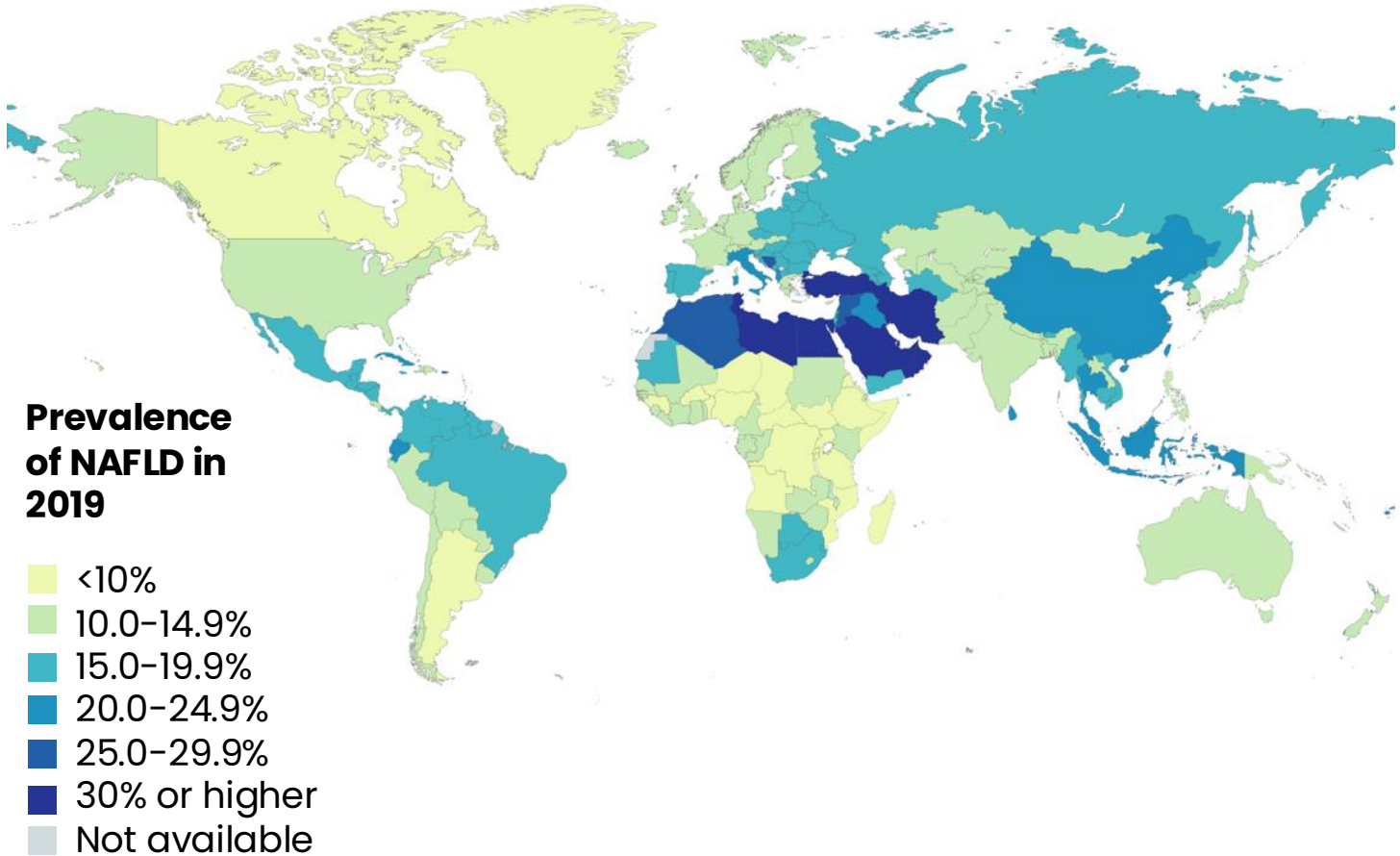
PREVALENCE OF MASLD

Seminar

JOURNAL OF HEPATOLOGY

GLOBAL BURDEN OF LIVER DISEASE: 2023 UPDATE

Harshad Devarbhavi[1], Sumeet K. Asrani[2,*], Juan Pablo Arab[3,4], Yvonne Ayerki Nartey[5], Elisa Pose[6], Patrick S. Kamath[7]



MASLD:

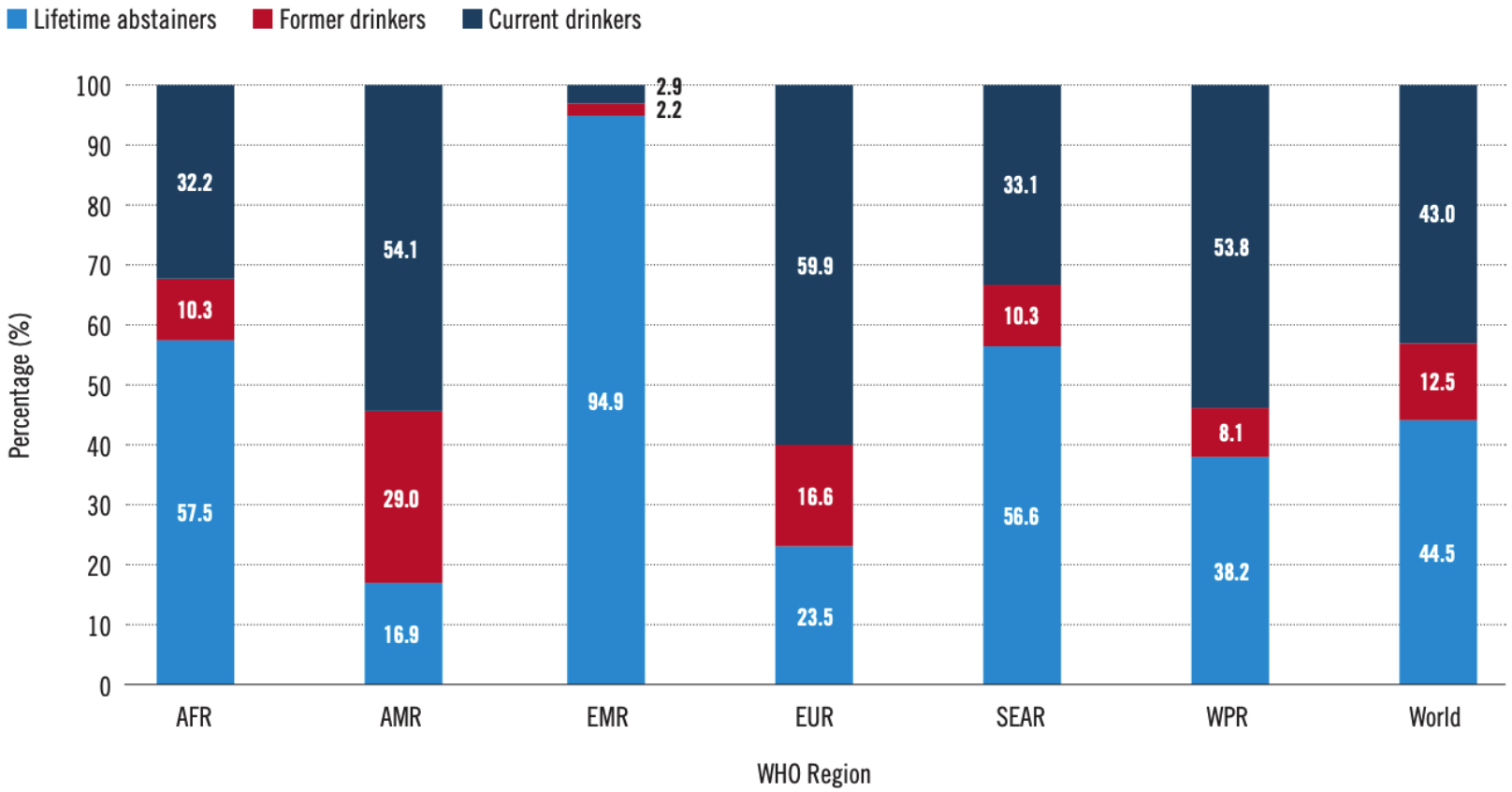
- The worldwide **prevalence** of MASLD is **32.4%**.
- The percentage of **total deaths** from all causes attributable to MASLD increased from 0.10% to **0.17%**.
- MASLD represents the second-leading cause of **liver transplantation** and the leading cause among females.

Devarbhavi H et al. Journal of Hepatology 2023

Global Alcohol Consumption

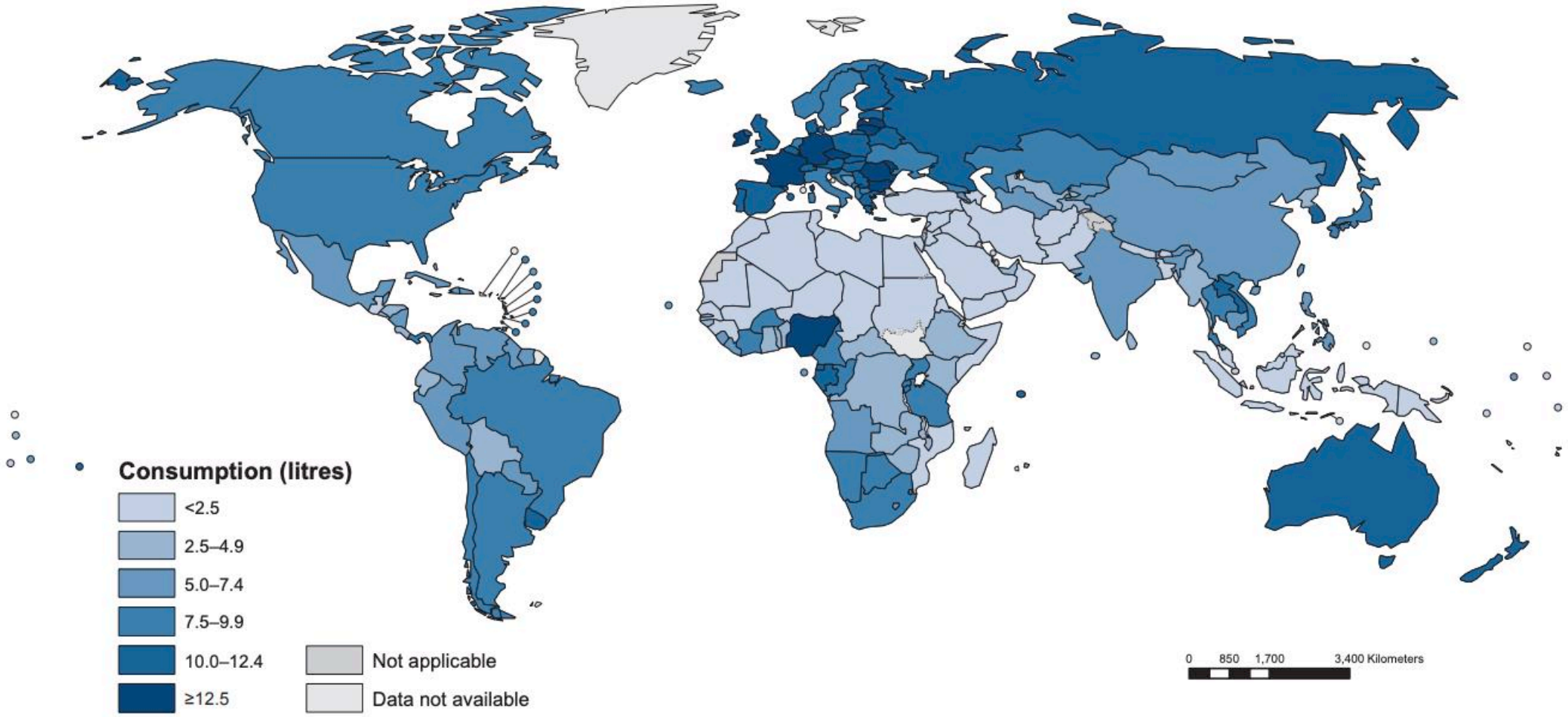
Globally, 43% of the population currently drinks alcohol

1 African Region (AFR)
2 Region of the Americas (AMR)
3 South-East Asian Region (SEAR)
4 European Region (EUR)
5 Eastern Mediterranean Region (EMR)
6 Western Pacific Region (WPR)



Global status report on alcohol and health 2018. World Health Organization (WHO)

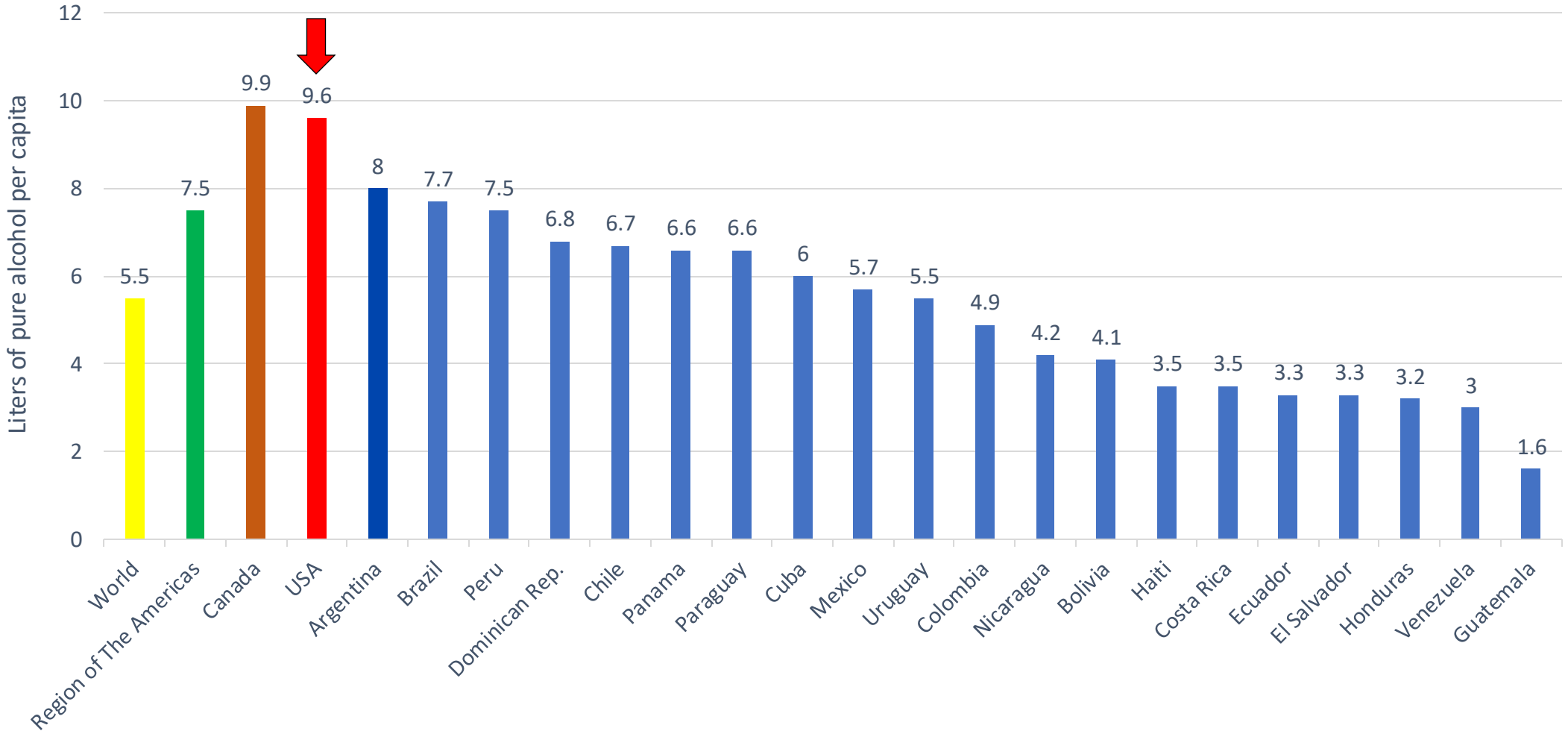
Alcohol consumption per capita



Global status report on alcohol and health 2018. World Health Organization (WHO)

2024

EPIDEMIOLOGY

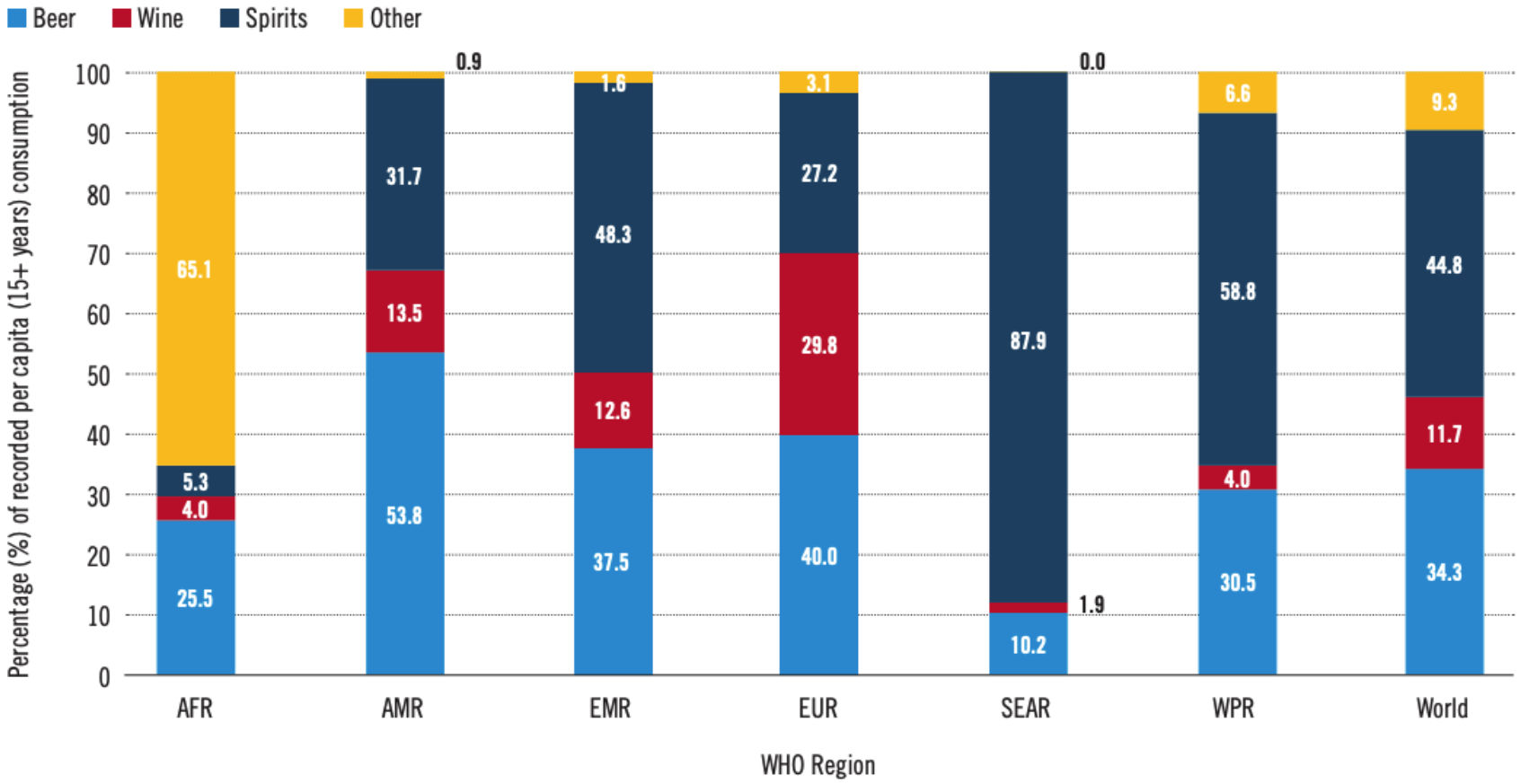


Global status report on alcohol and health 2024. World Health Organization (WHO)

Type of alcohol consumed

Worldwide:

1. Spirits (44.8%)
2. Beer (34.3%)
3. Wine (11.7%)

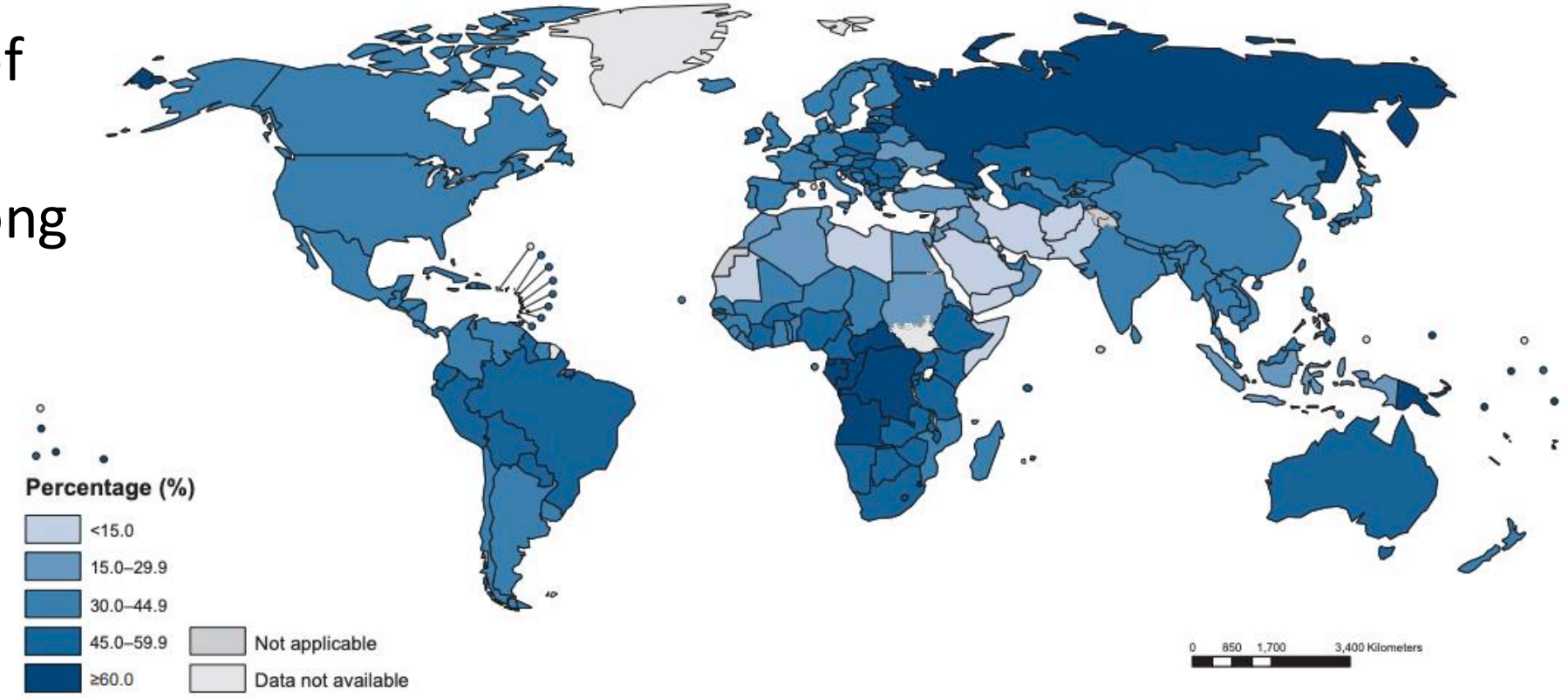


Global status report on alcohol and health 2018. World Health Organization (WHO)

Heavy Episodic Drinking

Prevalence (in %) of heavy episodic drinking* (HED) among current drinkers (15+ years), 2016

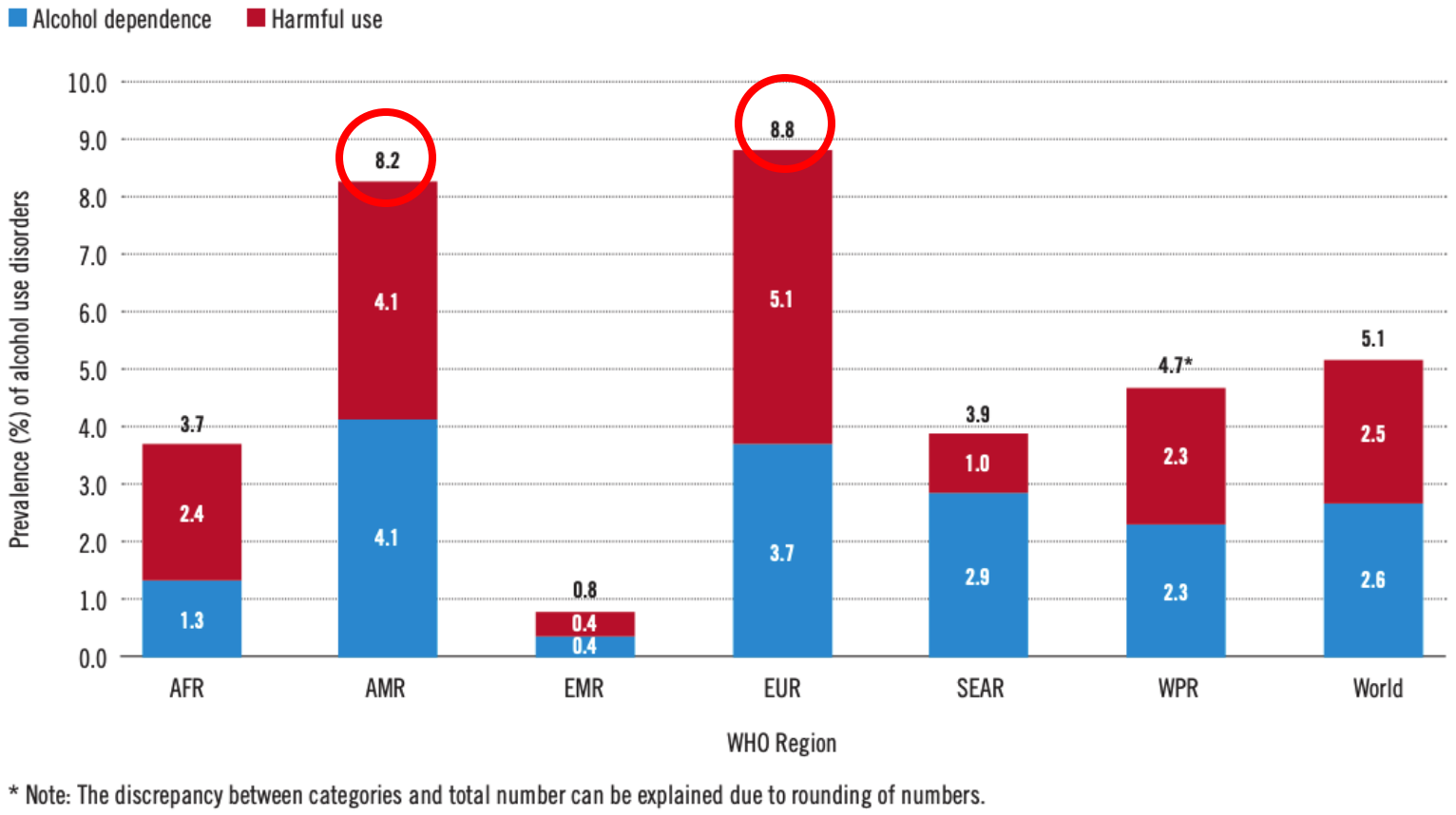
**(defined as 60 or more grams of pure alcohol on at least one occasion at least once per month)*



Global status report on alcohol and health 2018. World Health Organization (WHO)

Prevalence of AUD

Prevalence of alcohol use disorders (AUDs) = **5.1%**



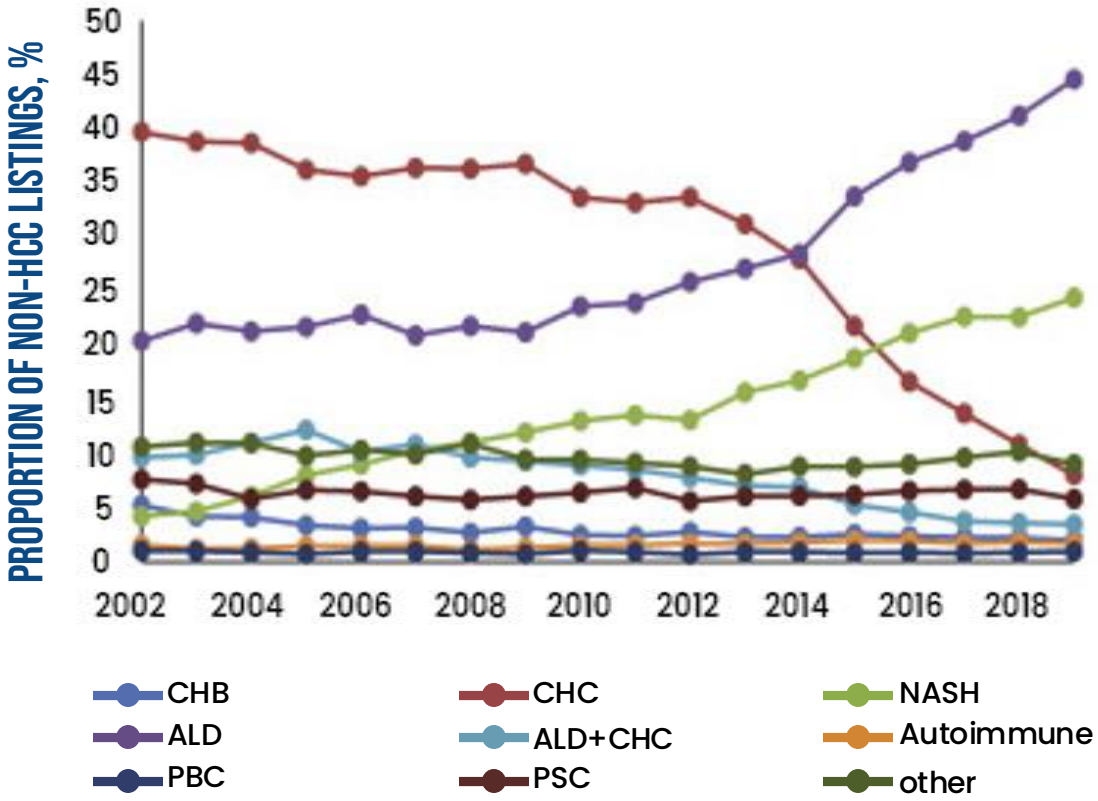
* Note: The discrepancy between categories and total number can be explained due to rounding of numbers.

Global status report on alcohol and health 2018. World Health Organization (WHO)

TRENDS ON LIVER TRANSPLANTATION

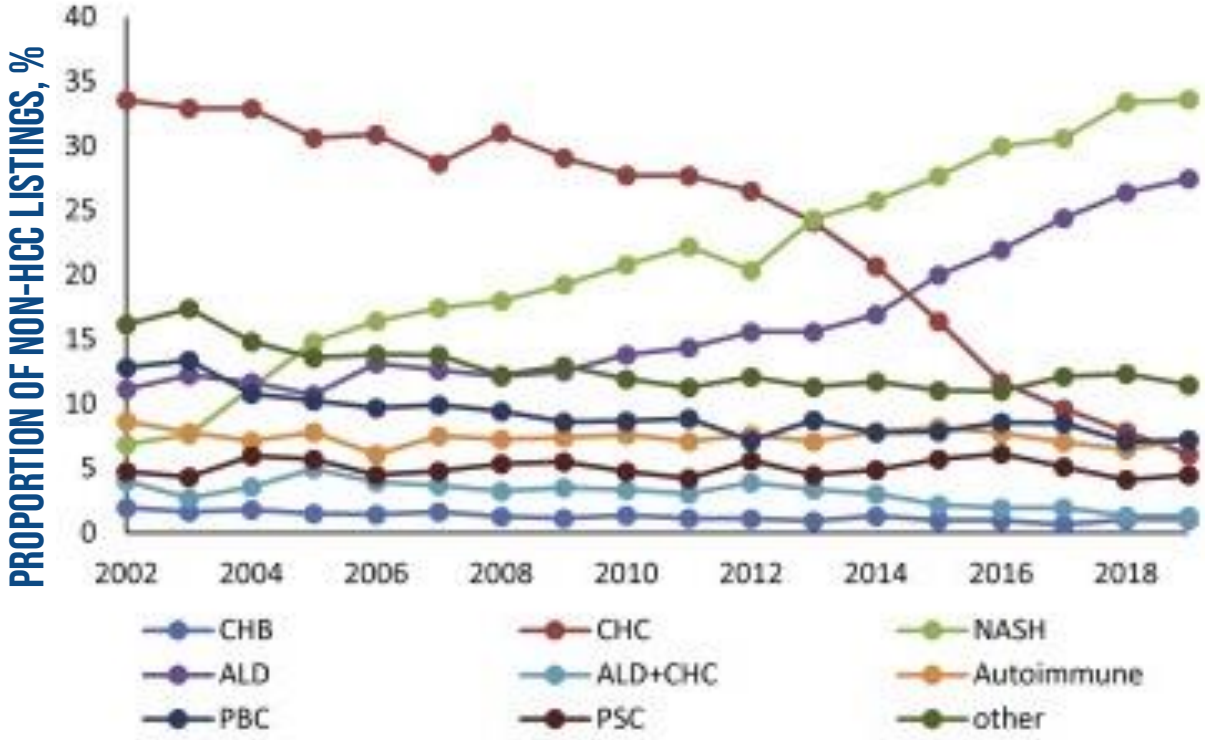
A

MALE



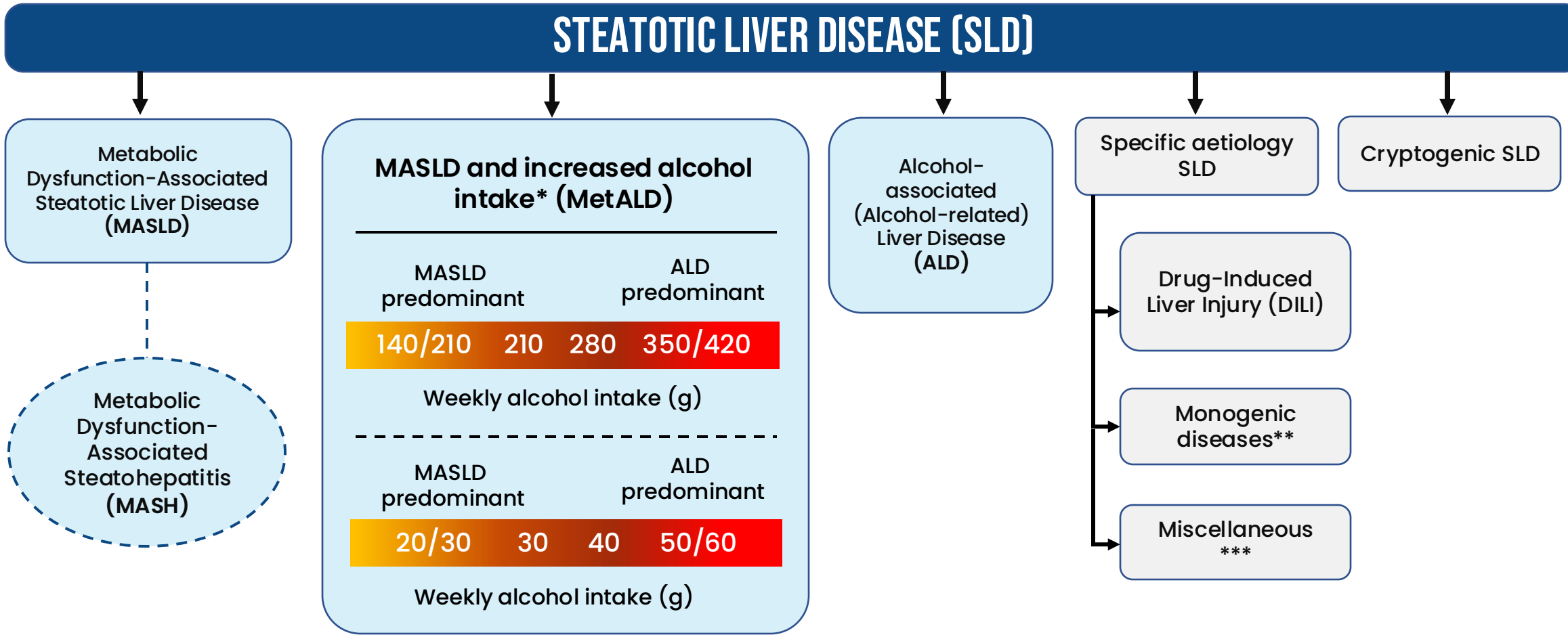
B

FEMALE



Younossi ZM et al. Clin Gastroenterol Hepatol. 2021 Mar;19(3):580-589.

NEW NOMENCLATURE: STEATOTIC LIVER DISEASE



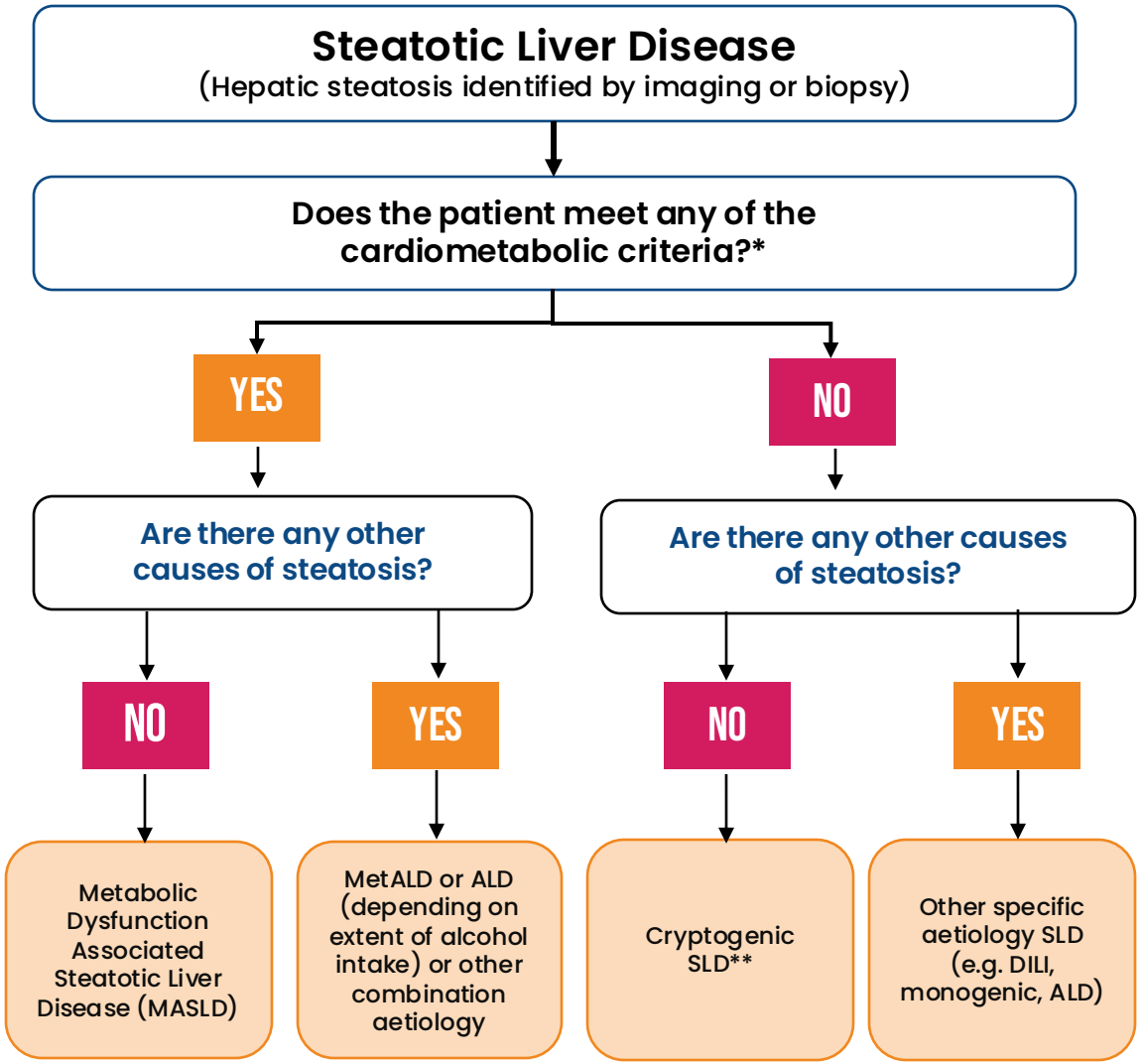
*Weekly intake 140-350g female, 210-420g male (average daily 20-50g female, 30-60g male)

**e.g. Lysosomal Acid Lipase Deficiency (LALD), Wilson disease, hypobetalipoproteinemia, inborn errors of metabolism

***e.g. Hepatitis C virus (HCV), malnutrition, celiac disease

Adapted from Rinella ME, et al. Hepatology 2023

NEW NOMENCLATURE: STEATOTIC LIVER DISEASE



Adapted from Rinella ME, et al. Hepatology 2023

*CARDIOMETABOLIC CRITERIA

ADULT CRITERIA

At least 1 out of 5:

- ❑ BMI ≥25 kg/m² [23 Asia] OR WC >94 cm (M) 80 cm (F) OR ethnicity adjusted equivalent
- ❑ Fasting serum glucose ≥5.6 mmol/L [100 mg/dl] OR 2-hour post-load glucose levels ≥ 7.8 mmol/L [≥140 mg/dl] OR HbA1c ≥5.7% [39 mmol/L] OR type 2 diabetes OR treatment for type 2 diabetes
- ❑ Blood pressure ≥130/85 mmHg OR specific antihypertensive drug treatment
- ❑ Plasma triglycerides ≥1.70 mmol/L [150 mg/dl] OR lipid lowering treatment
- ❑ Plasma HDL-cholesterol ≤1.0 mmol/L [40 mg/dl] (M) and ≤1.3 mmol/L [50 mg/dl] (F) OR lipid lowering treatment

PEDIATRIC CRITERIA

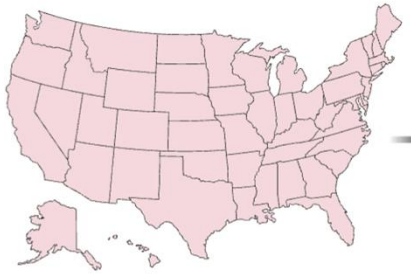
At least 1 out of 5:

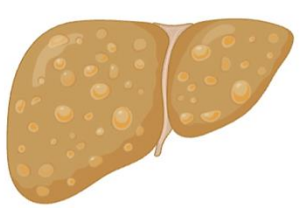
- ❑ BMI ≥85th percentile for age/sex [BMI z score ≥ +1] OR WC >95th percentile OR ethnicity adjusted equivalent
- ❑ Fasting serum glucose ≥ 5.6 mmol/L [≥100 mg/dl] OR serum glucose ≥11.1 mmol/L [≥200 mg/dl] OR 2-hour post-load glucose levels ≥ 7.8 mmol [140 mg/dl] OR HbA1c ≥ 5.7% [39 mmol/L] OR already diagnosed/treated type 2 diabetes OR treatment for type 2 diabetes
- ❑ Blood pressure age <13 yr, BP ≥95th percentile OR ≥130/80 mmHg (whichever is lower); age ≥13 yr, 130/85 mmHg OR specific antihypertensive drug treatment
- ❑ Plasma triglycerides age <10 yr, ≥1.15 mmol/L [≥100 mg/dl]; age ≥10 yr, ≥1.70 mmol/L [≥150 mg/dl] OR lipid lowering treatment
- ❑ Plasma HDL-cholesterol ≤1.0 mmol/L [≤40 mg/dl] OR lipid lowering treatment

Epidemiology

Prevalence of Steatotic Liver Disease in the US: NHANES 2017-2020

Background and Aims: Following a Delphi consensus process, the term "steatotic liver disease" (SLD) was introduced to replace "fatty liver disease". Using the NHANES dataset from 2017-2020 we aimed to unveil the prevalence of SLD and its sub-categories in the US.

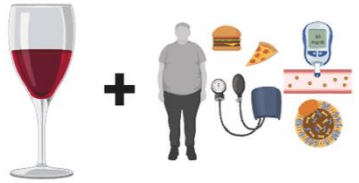


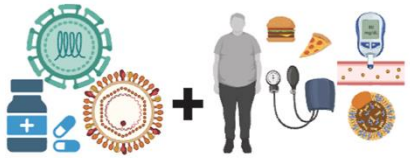


SLD

37.87%
(95% C.I: 35.1%-40.7%)

MASLD	MetALD	Other Combination Aetiology	ALD	Cryptogenic/ Other
32.45% (95%C.I: 29.8%-35.2%)	**2.56%** (95%C.I: 1.91%-3.41%)	**1.14%** (95%C.I: 0.88%-1.49%)	**1.17%** (95%C.I: 0.71%-1.92%)	**0.32%** (95%C.I: 0.17%-0.61%)



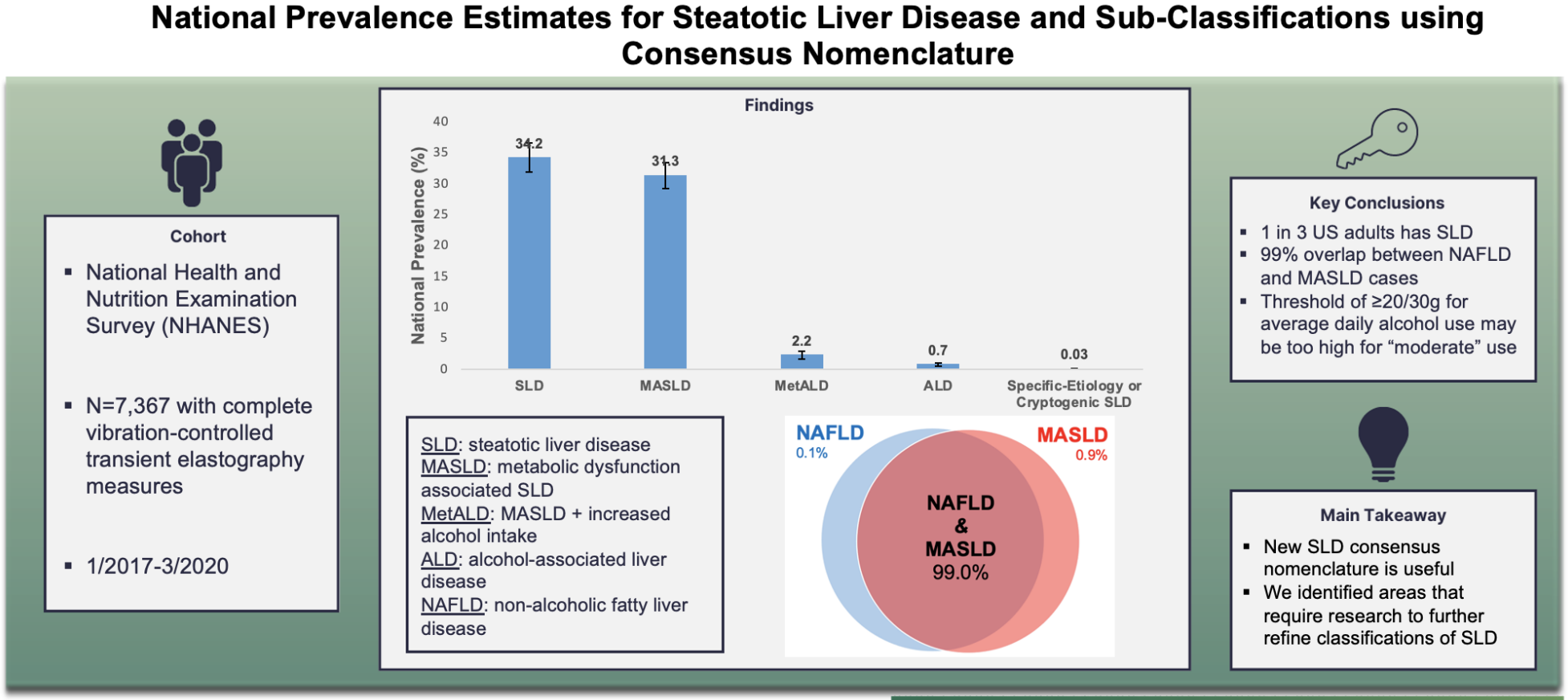


Clinical Gastroenterology and Hepatology

Kalligeros M, et al. Clin Gastroenterol Hepatol 2023

Epidemiology

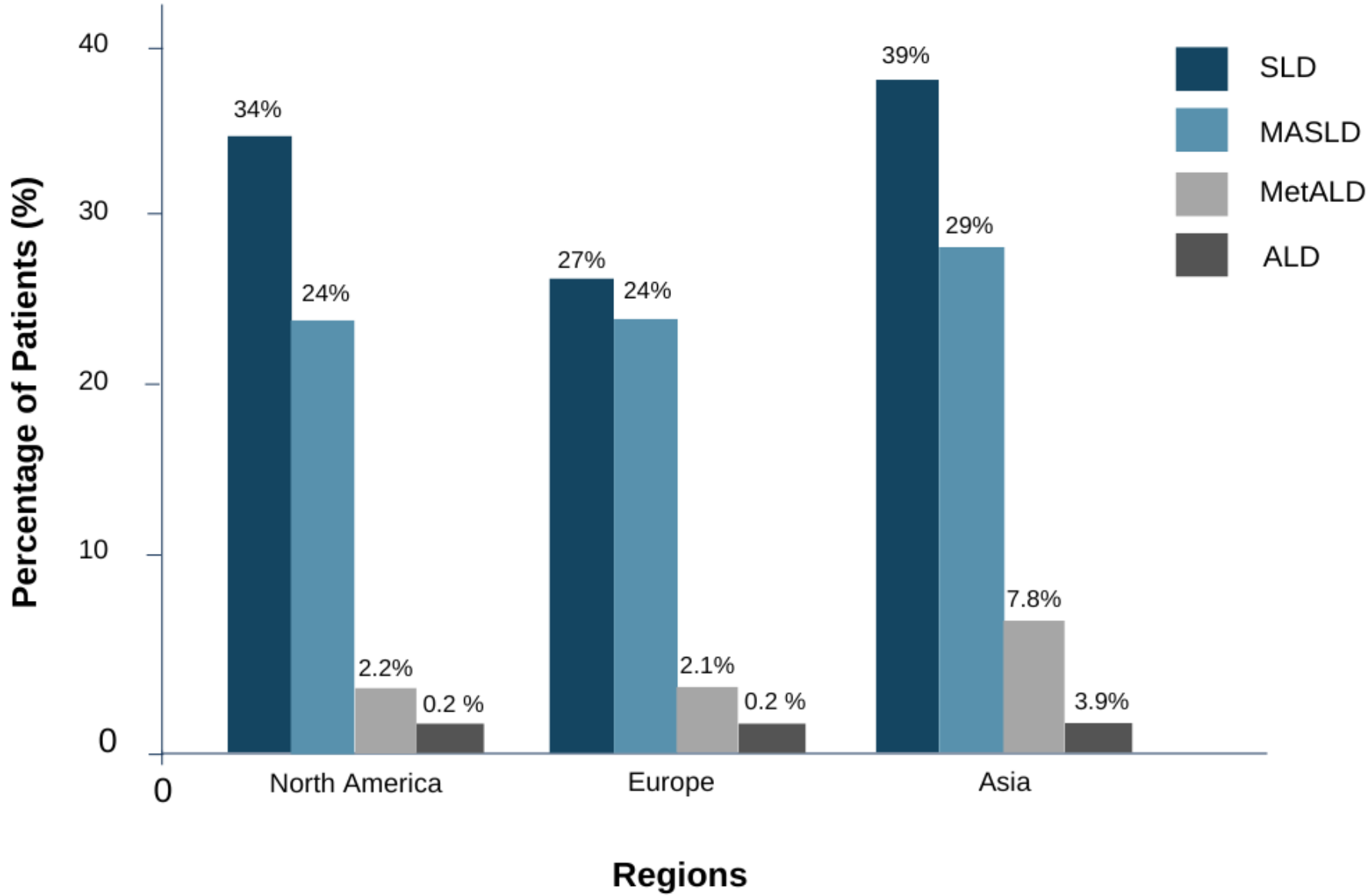
SLD 34.2% (95% CI 31.9%–36.5%)
MASLD 31.3% (29.2%–33.4%)
MetALD 2.2% (1.6%–2.9%)
ALD 0.7% (0.5–0.9%)



Lee BP, et al. *Hepatology.*

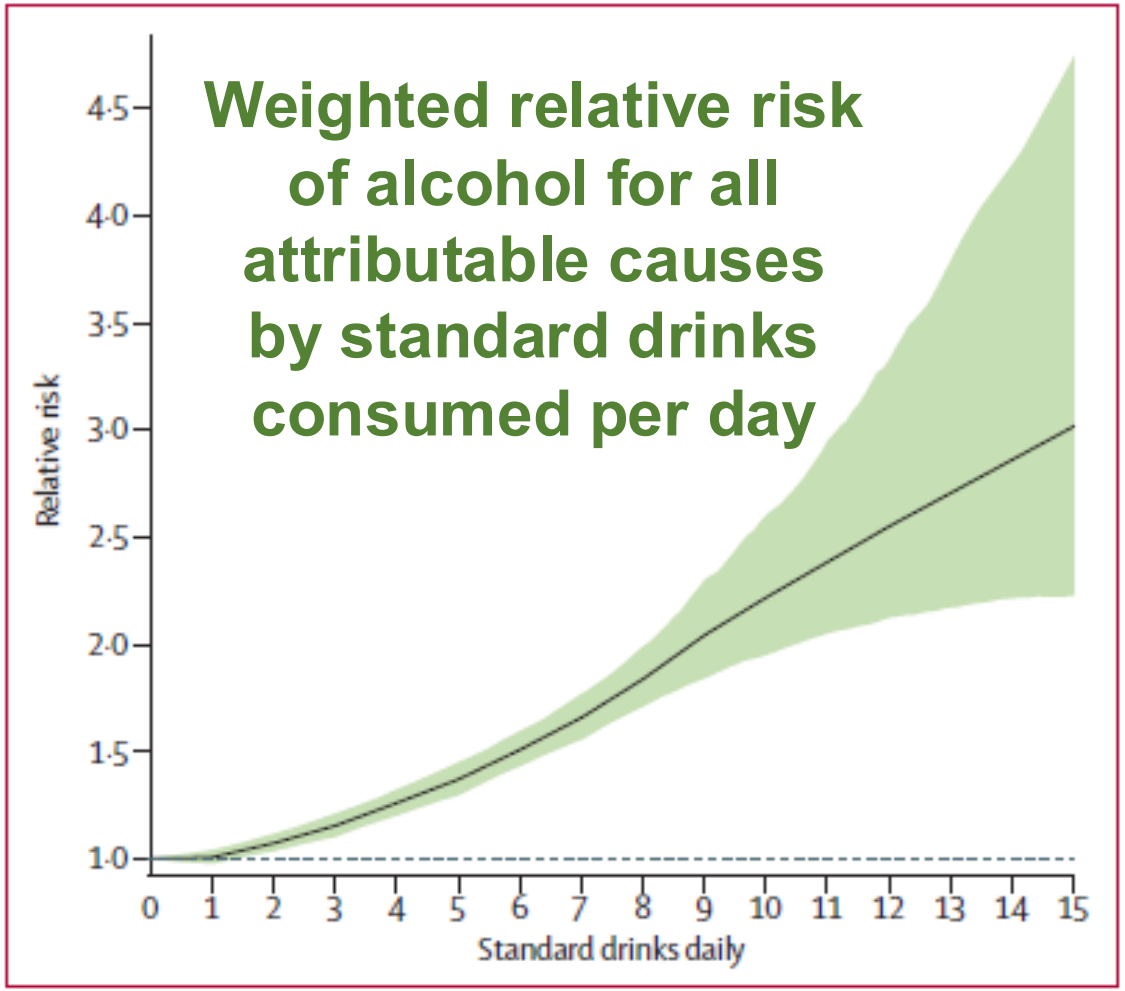
HEPATOLOGY

Lee BP, et al. Hepatology. 2024 Mar 1;79(3):666-673.



Ayares G, Diaz LA et al. Liver International 2025

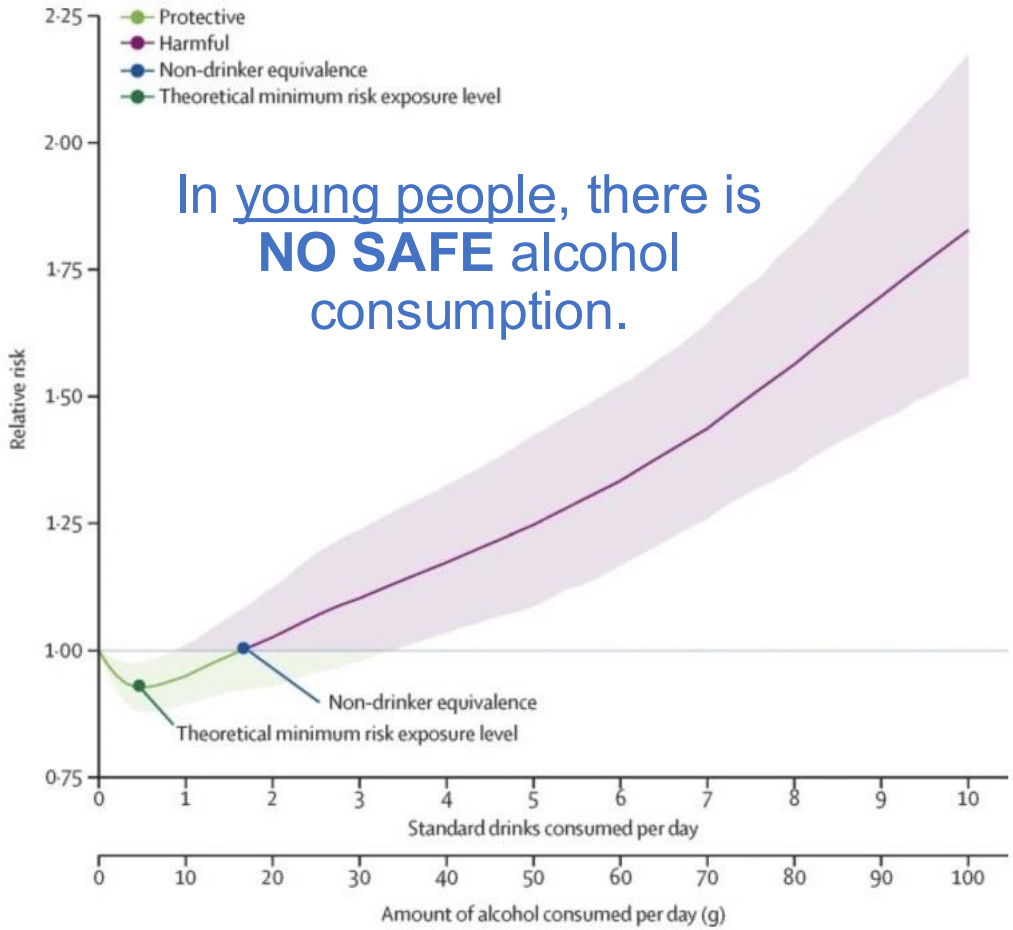
Harmful Drinking



Lancet. 2018;392(10152):1015-35.

Population-level risks of alcohol consumption by amount, geography, age, sex, and year: a systematic analysis for the Global Burden of Disease Study 2020

*GBD 2020 Alcohol Collaborators**



Lancet. 2022 Jul 16;400(10347):185-235.

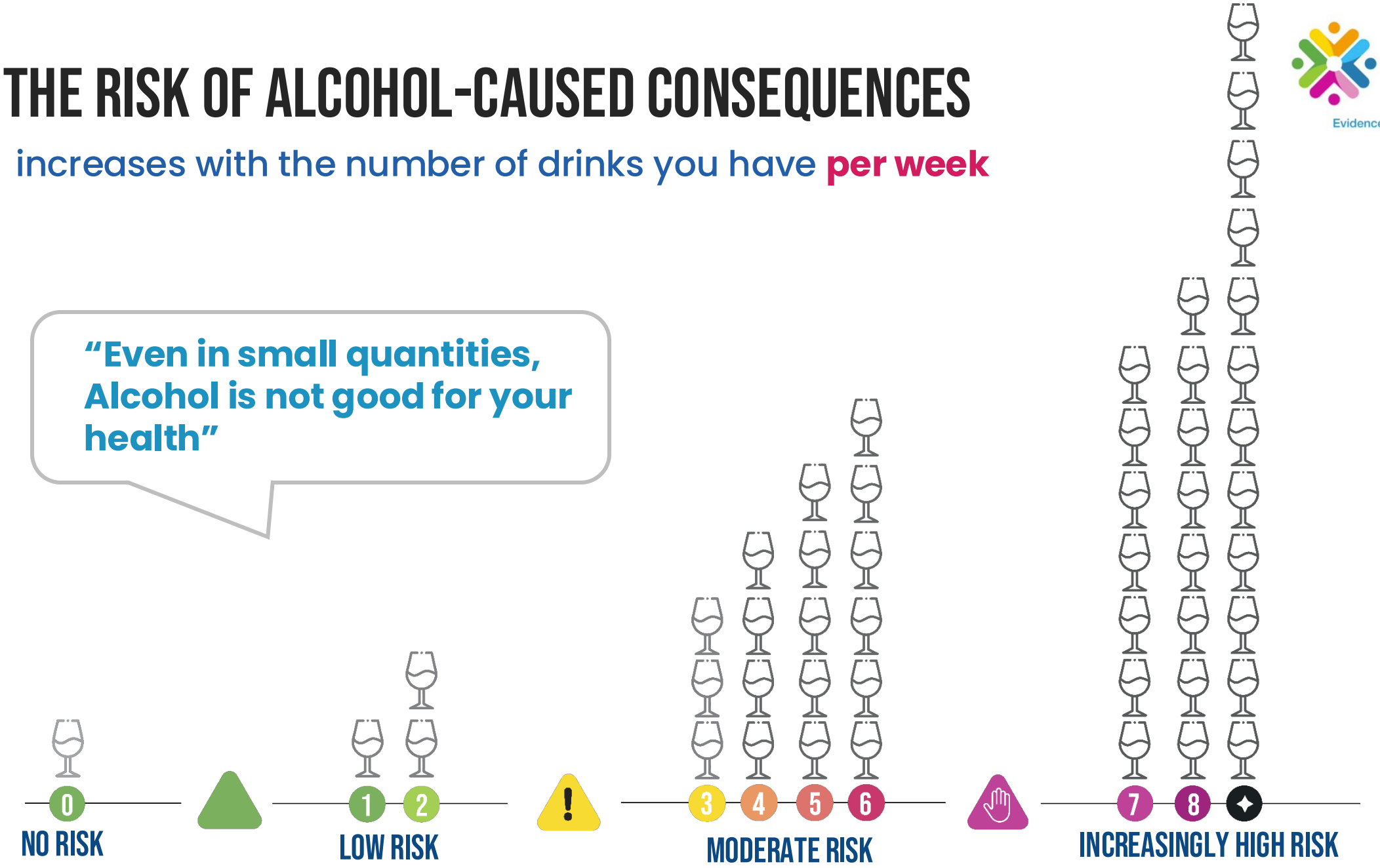
THE RISK OF ALCOHOL-CAUSED CONSEQUENCES

increases with the number of drinks you have **per week**

Canadian Centre on Substance Use and Addiction

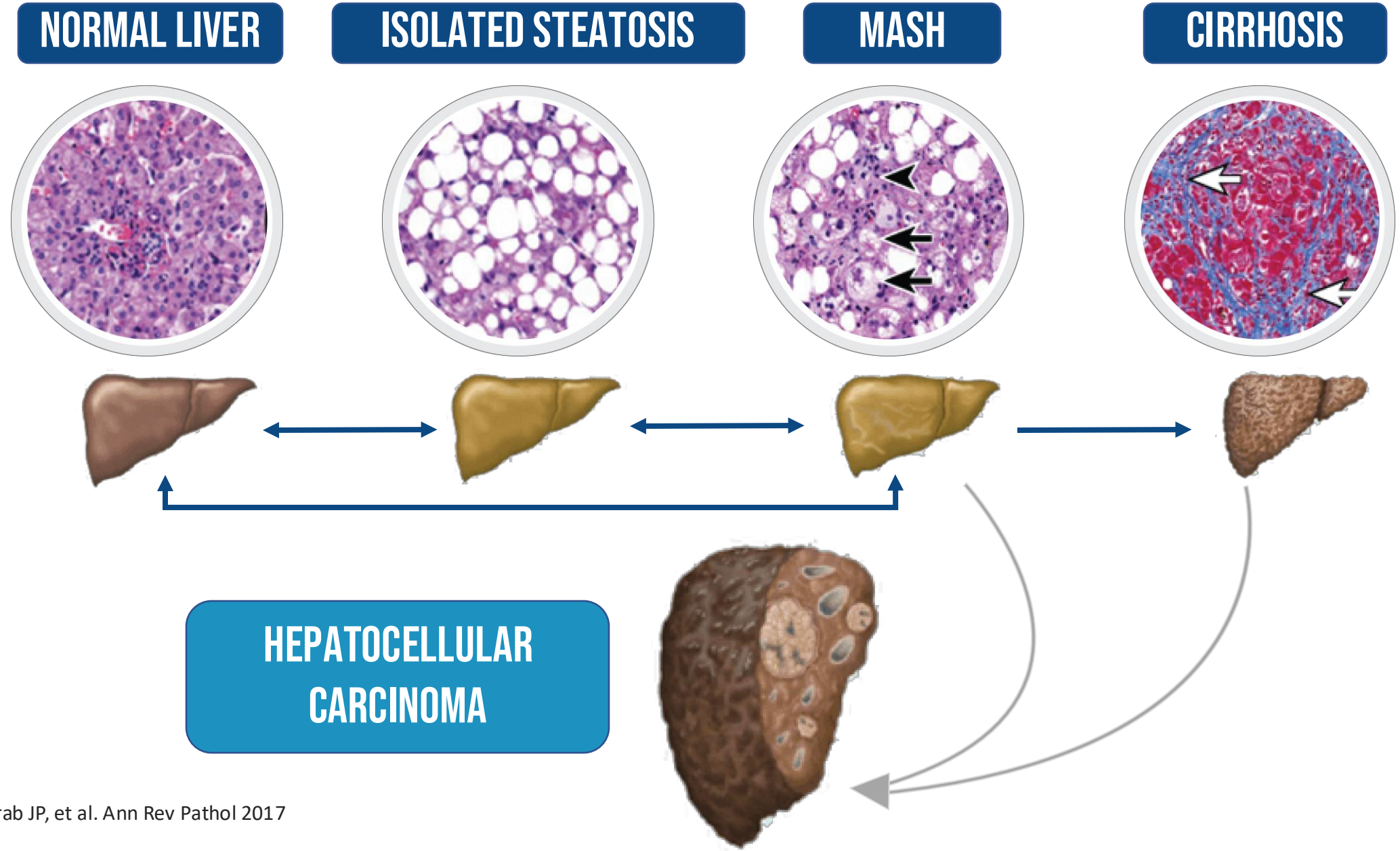
Evidence. Engagement. Impact.

"Even in small quantities, Alcohol is not good for your health"



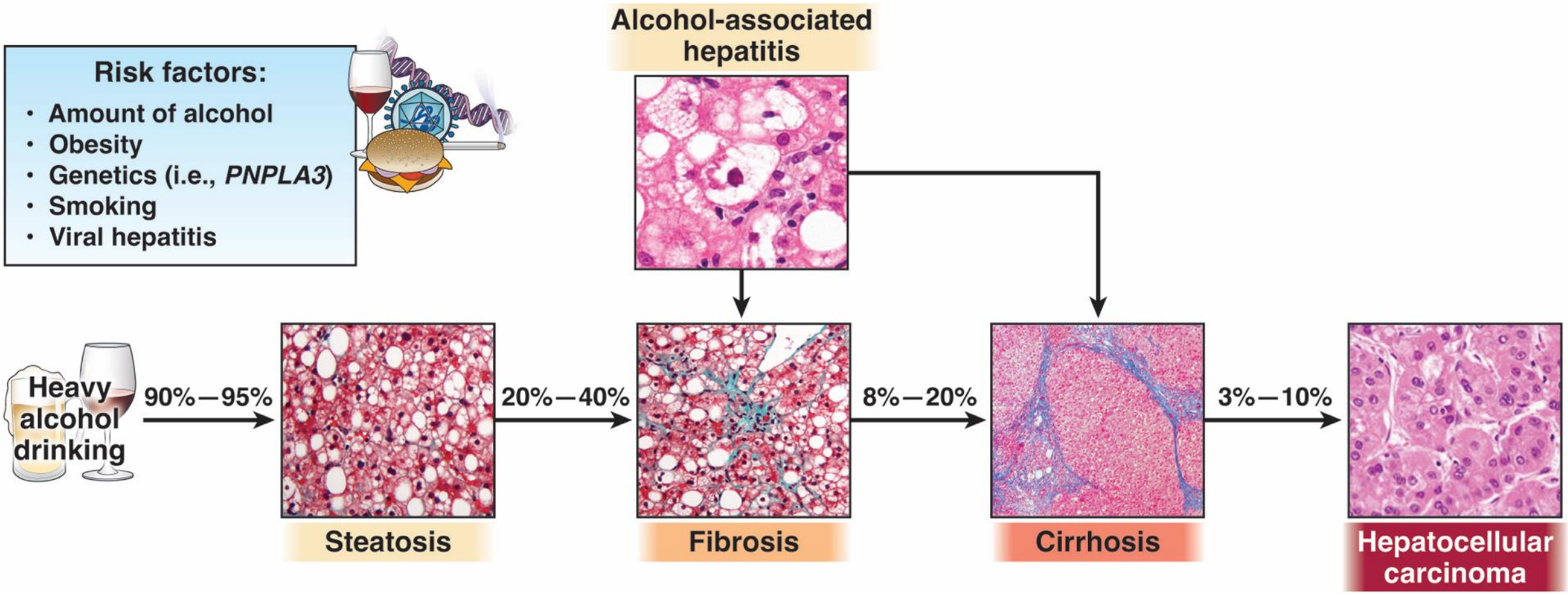
Update of Canada's Low-Risk Alcohol Drinking Guidelines

MASLD: NATURAL HISTORY



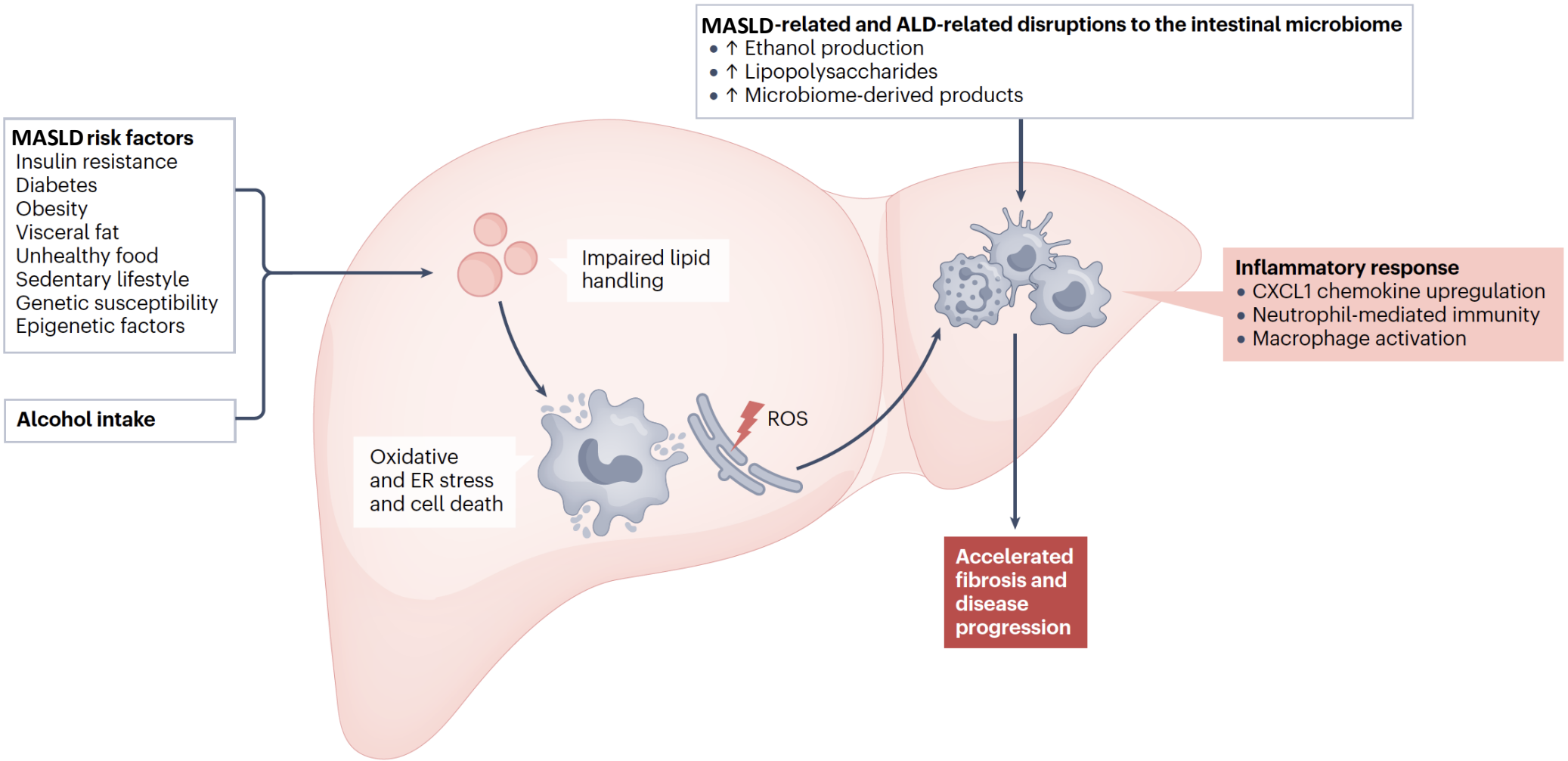
Arab JP, et al. Ann Rev Pathol 2017

ALD: NATURAL HISTORY



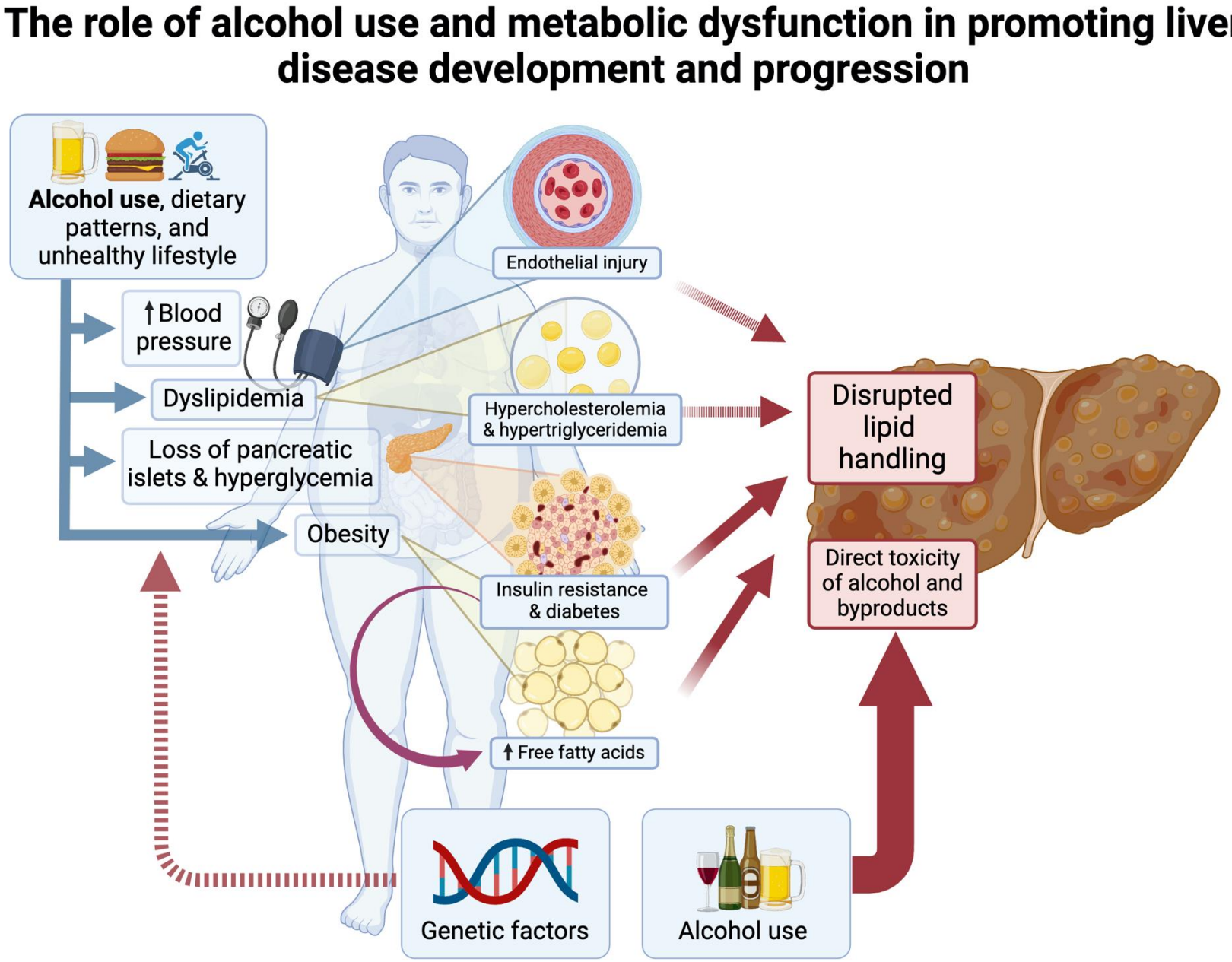
Arab JP, Addolorato G, Mathurin P, Thursz MR. Clin Gastroenterol Hepatol 2023

Key pathogenic mechanisms in MetALD



Díaz LA, et al. Nature Reviews Gastroenterol Hepatol. 2023 Aug 15. doi: 10.1038/s41575-023-00822-y.

MetALD

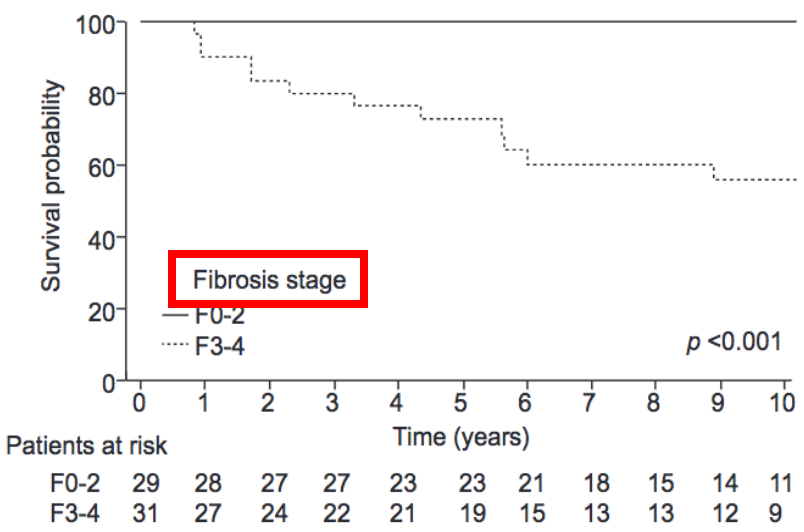


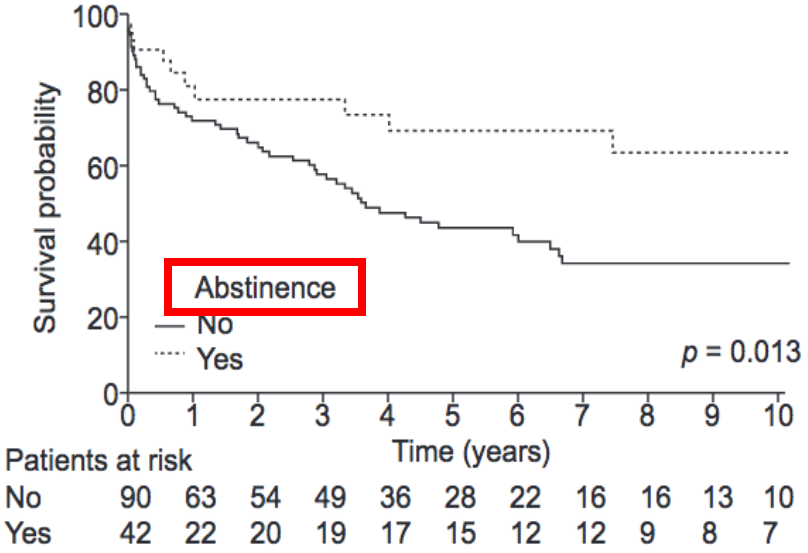
Arab JP, Díaz LA, Rehm J, Im G, et al. ALD working group. J Hepatol. 2024 Nov 26:S0168-8278(24)02728-4.

PROGNOSIS

Histological parameters and alcohol abstinence determine long-term prognosis in patients with alcoholic liver disease

Carolin Lackner[1,*,†], Walter Spindelboeck[2,†], Johannes Haybaeck[1], Philipp Douschan[2], Florian Rainer[2], Luigi Terracciano[3], Josef Haas[4], Andrea Berghold[5], Ramon Bataller[6], Rudolf E. Stauber[2]

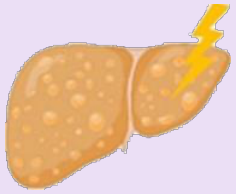




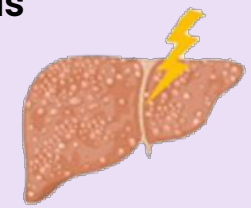
Lackner C, et al. J Hepatol. 2017

DETECTION OF ALCOHOL MISUSE IN MASLD

FATTY LIVER DISEASE


Steatosis


Alcohol


Steatohepatitis


Obesity


T2DM


Diet


Cirrhosis

METHODS


Questionnaire


Sample collection


AUDIT-C


MCV
GGT
CDT
ANI


uEtG


hEtG
FAEE

SCR for alcohol consumption

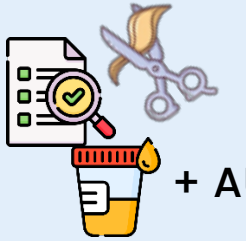
+ metabolic characterization

RESULTS & CONCLUSIONS

Moderate to excessive alcohol consumption in

28.6% of NAFLD patients
25.0% of MAFLD patients

Optimal diagnostic means

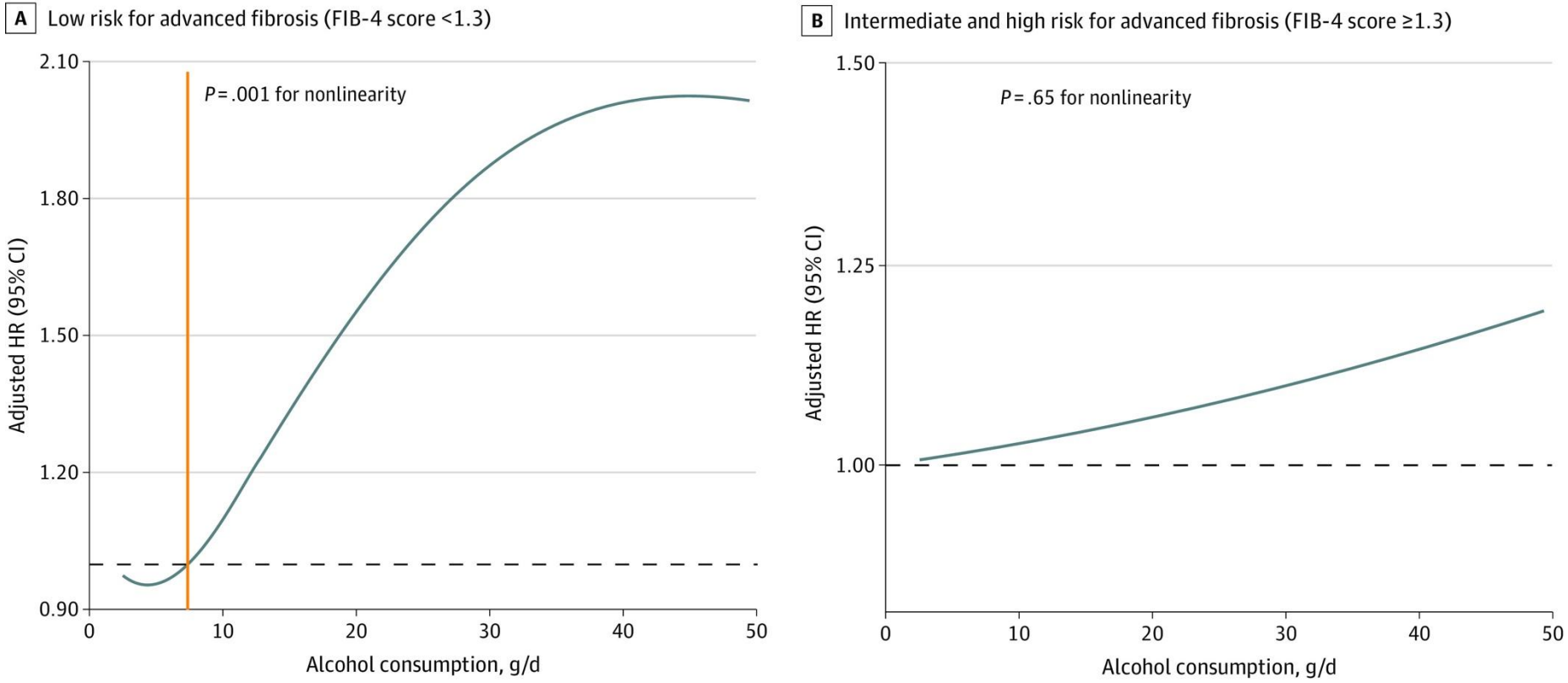


hEtG: AUC 0.927
+ uEtG: AUC 0.754
+ AUDIT-C: AUC 0.733

Adapted from Staufer K, et al. J Hepatol 2022

Alcohol Intake Thresholds Among Individuals With Steatotic Liver Disease

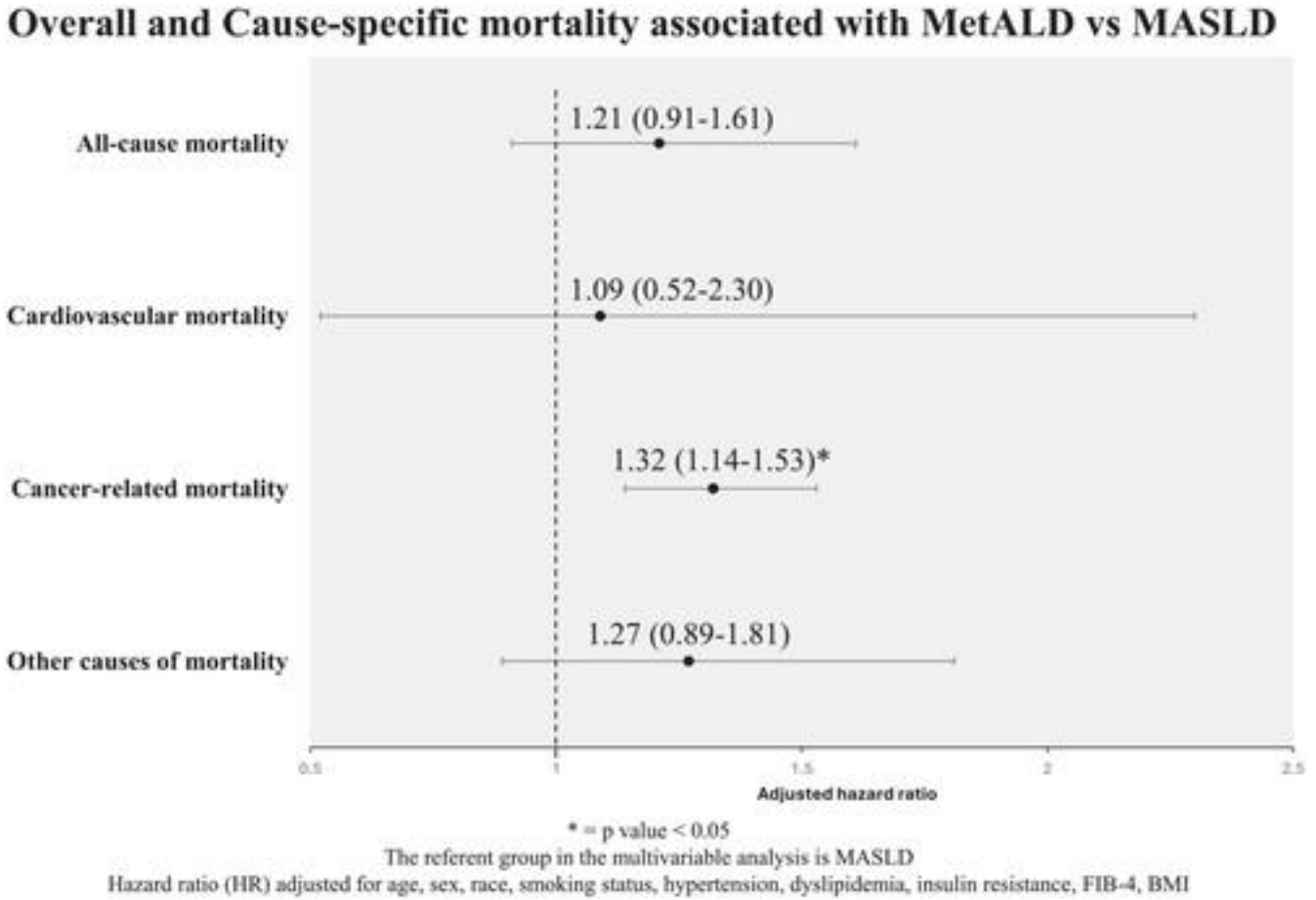
"The recommended level of alcohol consumption was **less than 7.4 g/d** for individuals with SLD at lower risk for advanced fibrosis, which equals half a 12-oz (336-g) beer or half a glass of wine".



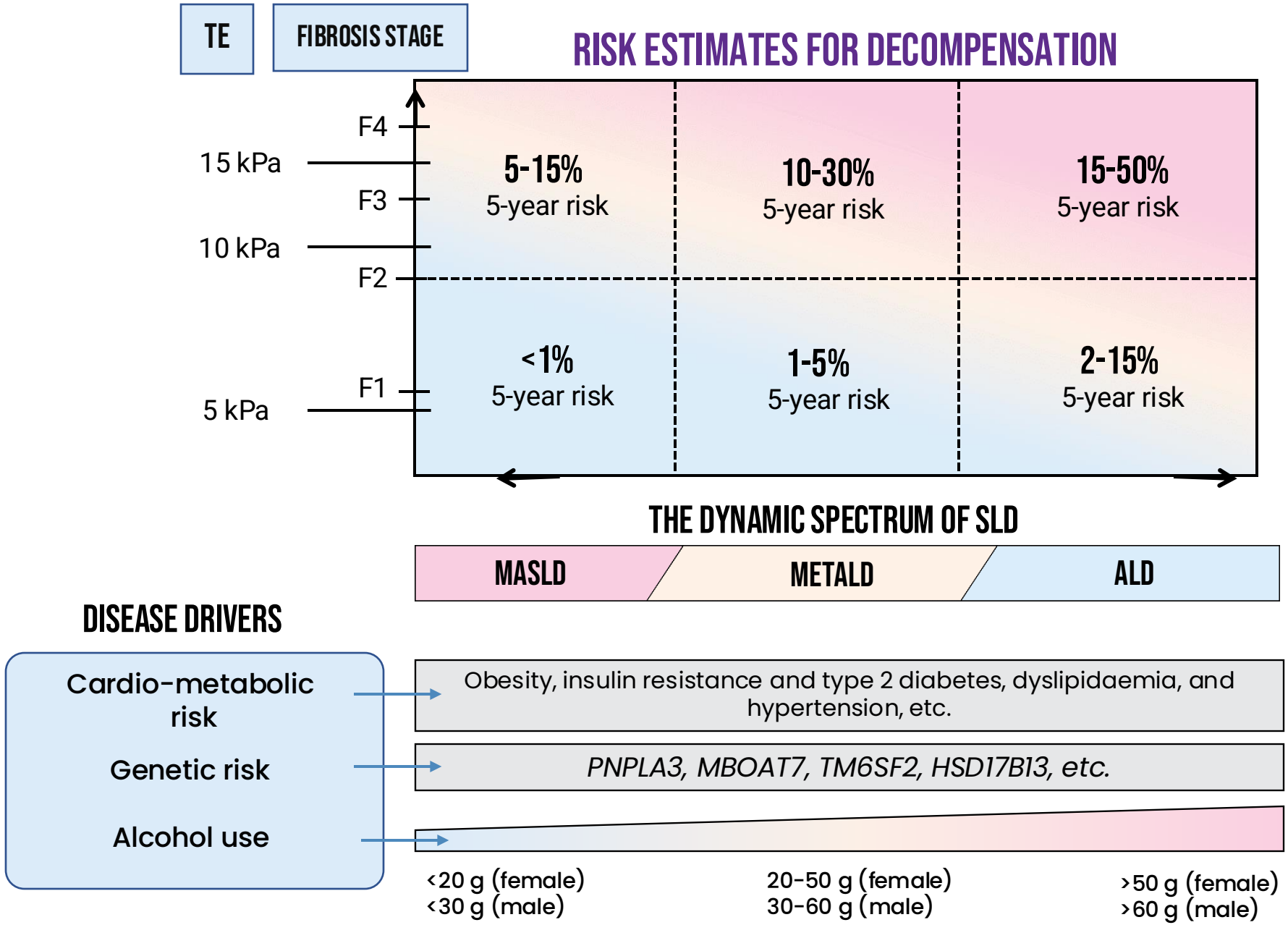
Yeo YH et al. JAMA Netw Open. 2023 Dec 1;6(12):e2347548.

Mortality outcomes in individuals with MASLD versus MASLD and increased alcohol intake

"MetALD patients were at increased risk of **cancer-related mortality** compared with patients with MASLD (**hazard ratio 1.32**; 95% confidence interval 1.14-1.53; p<0.01)".



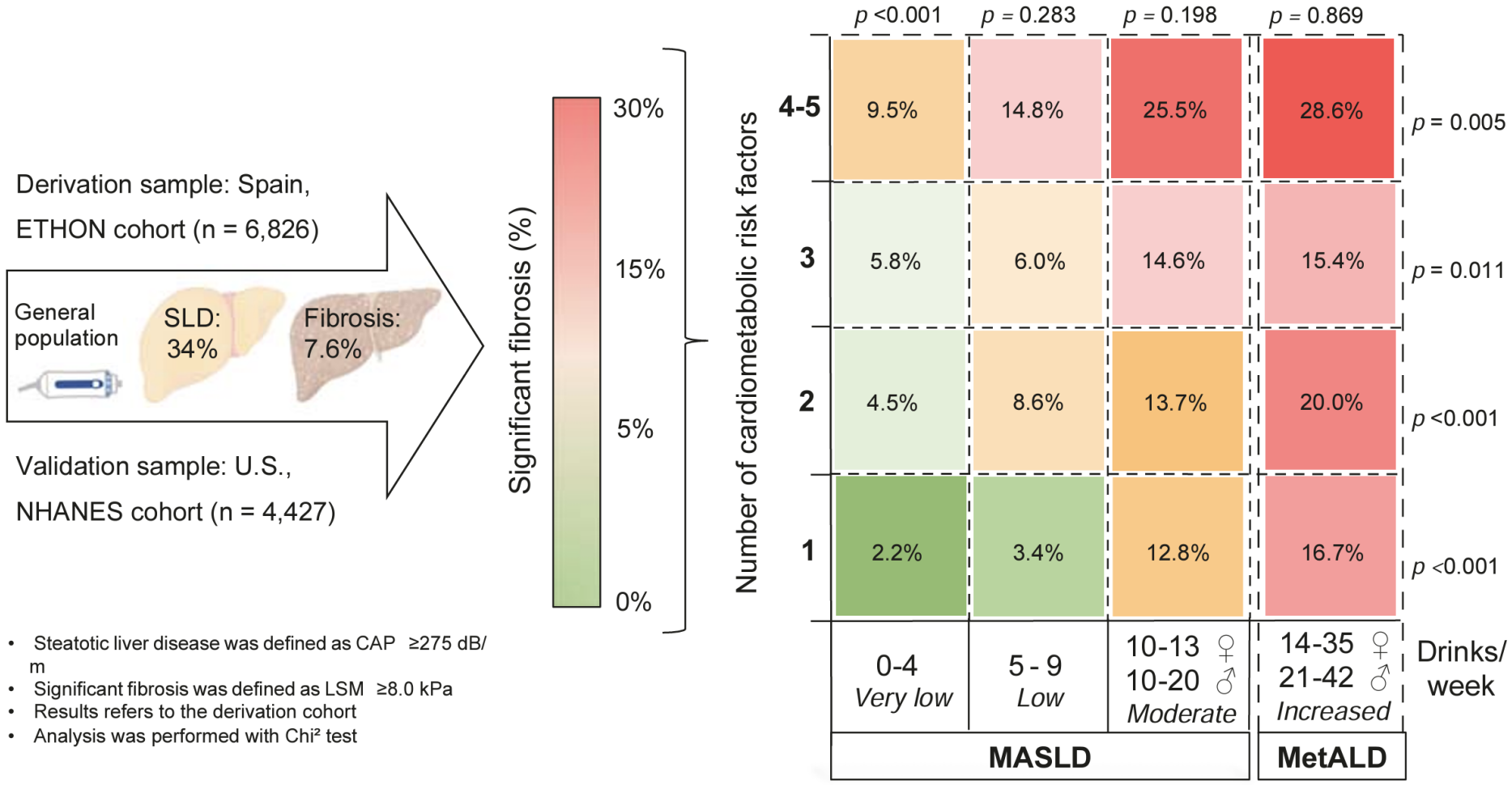
Aboona M, …, Arab JP, Wijarnpreecha K. J Gastroenterol Hepatol. 2024 Aug 22. doi: 10.1111/jgh.16726.



Adapted from: Israelsen et al. Lancet GI Hep 2023

MetALD

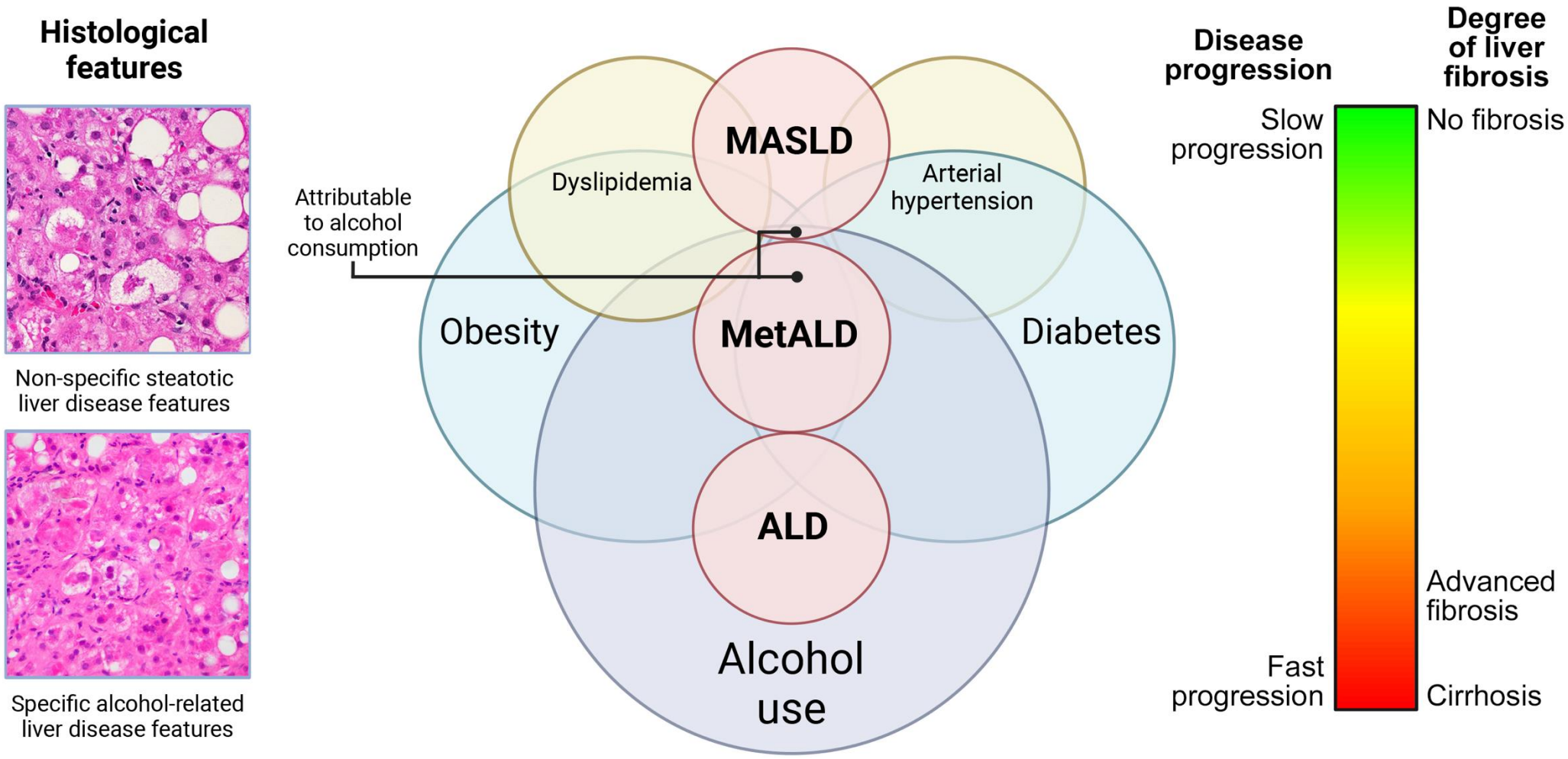
Low-to-moderate alcohol consumption is associated with **increased fibrosis** in individuals with **MASLD**



- Steatotic liver disease was defined as CAP ≥275 dB/m
- Significant fibrosis was defined as LSM ≥8.0 kPa
- Results refers to the derivation cohort
- Analysis was performed with Chi² test

Marti-Aguado D et al. J Hepatol. 2024 Jul 4:S0168-8278(24)02342-0.

MetALD



Arab JP, Díaz LA, Rehm J, Im G, et al. ALD working group. J Hepatol. 2024 Nov 26:S0168-8278(24)02728-4.

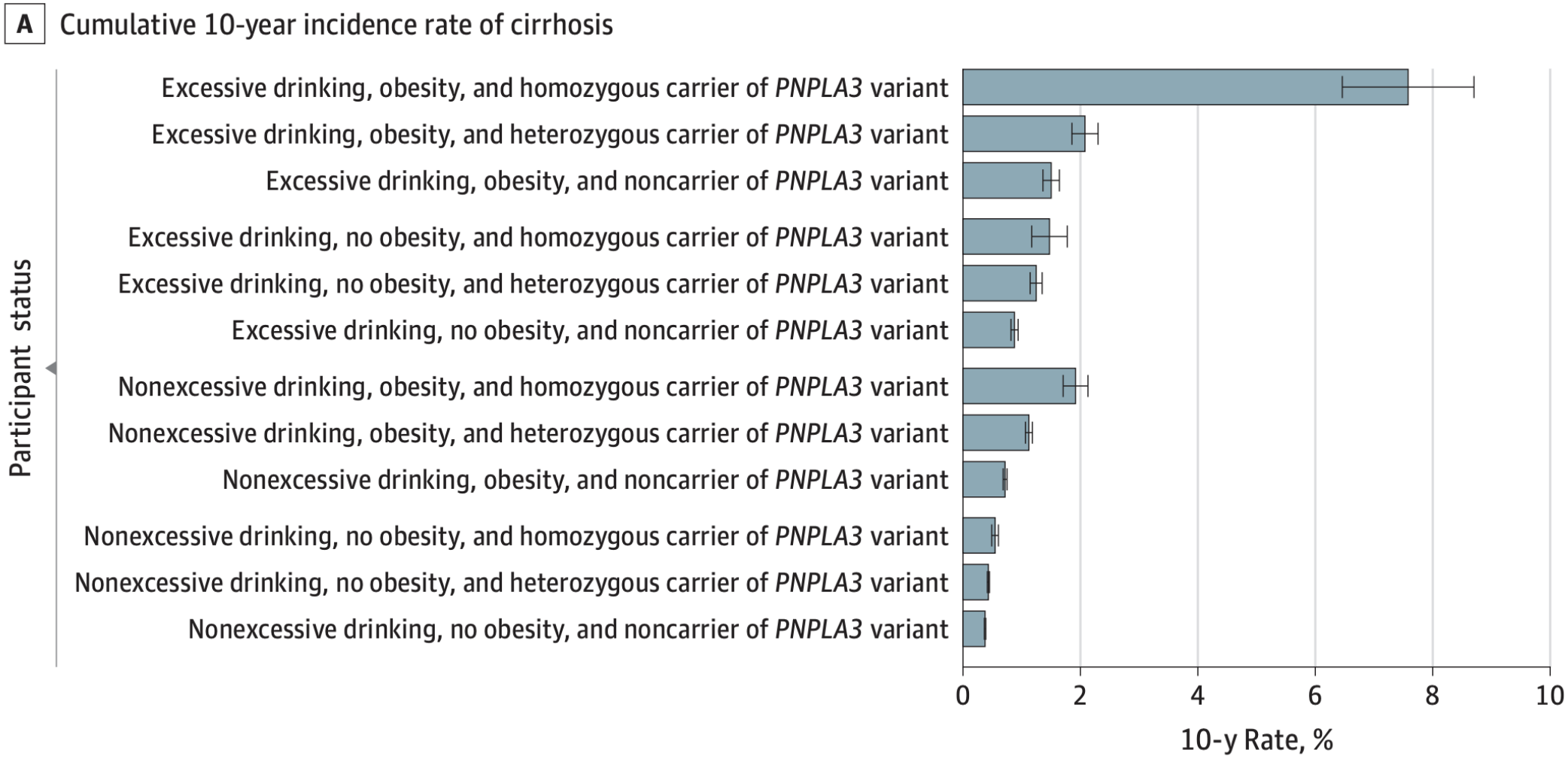
Genes involved in dual-etiology

Gene	Protein name	Variant	Cytogenetic location	Pathway	Outcomes in NAFLD and ALD
PNPLA3	Patatin-like phospholipase domain-containing 3	rs738409 C>G	22q13.31	Lipid metabolism	The risk variant modulates liver fat deposition, disease severity and progression in terms of inflammation and fibrosis in NAFLD and ALD[233,234]
TM6SF2	Transmembrane 6, superfamily member 2	rs58542926 C>T	19p13.3-p12	Miscellaneous	The polymorphism was associated with increased hepatic triglyceride content and advanced hepatic fibrosis or cirrhosis in NAFLD and ALD[234]
MBOAT7	Membrane-bound O-acyltransferase domain-containing 7	rs641738 C>T	19q13.42	Lipid composition of cell membranes	The variant was identified as a risk factor for ALD and promotes fat accumulation in the liver and development of NAFLD, inflammation, fibrosis and HCC due to reduced protein expression[235]
GCKR	Glucokinase regulator	rs1260326 T>C	2p23.3	Lipid synthesis	The variant decreases circulating fasting glucose and insulin levels but increases the production of malonyl-CoA, thereby promoting hepatic fat accumulation by serving as a substrate for lipogenesis and by blocking fatty acid oxidation[235]
HSD17B13	17β-hydroxysteroid dehydrogenase 13	rs72613567 T>TA rs62305723 G>A	4q22.1	Lipid metabolism	HSD17B13 protects against liver inflammation, cirrhosis and HCC due to both dysmetabolism and alcohol; the risk variants are related to the modulation of inflammation and fibrogenesis[236]
SOD2	Superoxide dismutase 2, mitochondrial	rs4880 C>T	6q25.3	Oxidative stress	The risk variant was associated with more advanced fibrosis in NASH[113,237,238]

Genes are ordered according to relevance to clinical practice. ALD, alcohol-associated liver disease; HCC, hepatocellular carcinoma; NAFLD, non-alcoholic fatty liver disease; NASH, non-alcoholic steatohepatitis.

Díaz LA, et al. Nature Reviews Gastroenterol Hepatol 2023

Individual susceptibility: Cirrhosis



Kim HS, et al. JAMA Netw Open 2022

Alcohol-associated liver disease (ALD)

Alcohol use disorder (AUD)

ALCOHOL USE DISORDERS SCREENING: AUDIT

ALCOHOL USE DISORDERS IDENTIFICATION TEST (AUDIT)

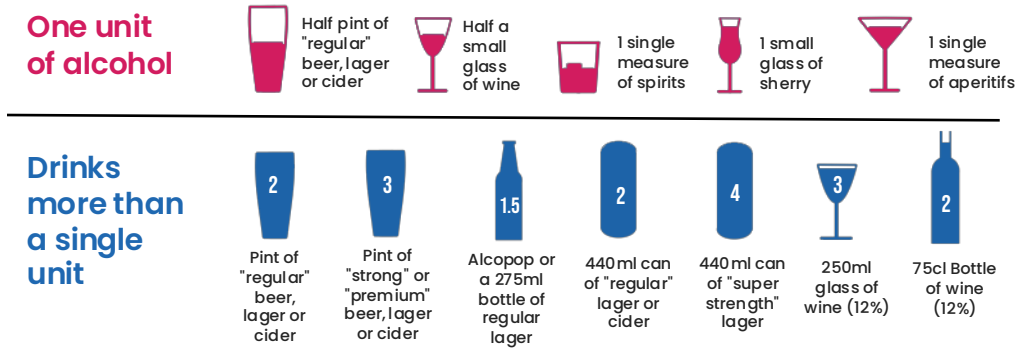
AUDIT is a comprehensive 10 question alcohol harm screening tool. It was developed by the World Health Organization (WHO) and modified for use in the UK and has been used in a variety of health and social care settings.

QUESTIONS	SCORING SYSTEM					YOUR SCORE
	0	1	2	3	4	
How often do you have a drink containing alcohol?	Never	Monthly or less	2 to 4 times per month	2 to 3 times per week	4 times or more per week	
How many units of alcohol do you drink on a typical day when you are drinking?	0 to 2	3 to 4	5 to 6	7 to 9	10 or more	
How often have you had 6 or more units if female, or 8 or more if male, on a single occasion in the last year?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you failed to do what was normally expected from you because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you needed an alcoholic drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you been unable to remember what happened the night before because you had been drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
Have you or somebody else been injured as a result of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
Has a relative or friend, doctor or other health worker been concerned about your drinking or suggested that you cut down?	No		Yes, but not in the last year		Yes, during the last year	
Total AUDIT score						

SCORING

- 0 to 7 indicates low risk
- 8 to 15 indicates increasing risk
- 16 to 19 indicates higher risk,
- 20 or more indicates possible dependence

ALCOHOL UNIT REFERENCE



ALCOHOL USE DISORDERS SCREENING: AUDIT-C

SCORE	0	1	2	3	4
How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times per month	2-3 times per week	4+ times per week
How many units of alcohol do you drink on a typical day when you are drinking?	1-2	3-4	5-6	7-9	10+
How often have you had 6 or more units if female, or 8 or more if male, on a single occasion in last year?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily

Men and women

0-4

Men and women aged 65+

0-2

No action required

Men and women

5+

Men and women aged 65+

3+

These patients are at an increasing or higher risk of hazardous/harmful drinking. Provide a patient information leaflet with details about harm, benefit and cutting down to patients who drink above low-risk levels (but are not dependent).

Men and women

11+

These patients are potentially addicted/ dependent to alcohol. Explain to the patient that the score indicates they may be drinking problematically and refer to local specialist services.

Clinicaltrials.gov, search on Oct 25, 2023

Screening for AUD: How are we doing it?

	Number of patients
Diagnosis of non-alcoholic fatty liver disease	15 984 (1·00%)
Body-mass index recorded	
In past 12 months	421 785 (26·44%)
In past 5 years	932 618 (58·45%)
Patient's alcohol units recorded	
In past 12 months	281 309 (17·63%)
In past 5 years	723 279 (45·33%)
Received alcohol use disorders identification test	
In past 12 months	48 880 (3·06%)
In past 5 years	164 743 (10·33%)
Assessed for hepatitis C virus infection status	
In past 12 months	50 (<0·001%)
In past 5 years	118 (0·01%)

Data are n (%).

Table 1: **Royal College of General Practitioners Research and Surveillance Centre data[9] on primary care activity for 1 595 450 patients**

Williams R. Lancet. 2018 Mar 17;391(10125):1097-1107.

Table 1 | **Available methods for detecting alcohol consumption in patients with ALD**

Method	Population tested	Pros	Cons
Self-report, clinical interviews, questionnaires[12–19,21,22]	General population and ALD at all stages	Inexpensive and quick; it can be combined and validated with other biomarkers	Low accuracy in many clinical settings
Serum markers (ALT, AST, GGT and MCV)[25,126,127]	General population, ALD at all stages and patients with AUD	Inexpensive and readily available; AST to ALT ratio is a good indicator of chronic excessive alcohol use	Results are non-specific; many sources of false-positives, especially with advanced liver disease
Breath samples (for example, breathalysers or passive alcohol sensors)[127,128]	General population and patients with AUD	Accurate and rapid results	Only detects acute intoxication; sensitive to temperature and breathing pattern
Alcohol levels in saliva[129]	Patients with AUD	Inexpensive and quick	Cannot always predict blood alcohol content
Serum levels of ethanol or methanol[127,130,131]	General population, ALD and patients with AUD	Gold standard for detecting acute alcohol consumption	Rapid elimination in chronic heavy drinkers; quality of laboratory procedures influences results
Serum levels of CDT[25,126,132]	ALD pre-LT and post-LT and patients with AUD	Rare false positives; good indicator of relapse	Reflects more extended heavy drinking
Urine levels of EtG or EtS[25,26,133]	ALD pre-LT and post-LT	Results are easily determined; EtG: inexpensive, longer detection window than for ethanol	Short detection window compared to PEth
Hair testing (EtG or FAEE)[134,135]	General population, patients with AUD	Very specific marker of long-term alcohol use	Expensive; not widely available; collection can be difficult
Serum PEth[24,25,27,136]	ALD pre-LT and post-LT	Very specific; easy to collect; detect longer period of time than EtG or EtS	Expensive; not widely available
Transdermal sensors[137–139]	Patients with AUD	Allows continuous monitoring; tamper-resistant	Not clinically validated; expensive; technical difficulties

ALD, alcohol-associated liver disease; ALT, alanine aminotransferase; AST, aspartate aminotransferase; AUD, alcohol use disorder; CDT, carbohydrate-deficient transferrin; EtG, ethyl glucuronide; EtS, ethyl sulfate; FAEE, fatty acid ethyl esters; GGT, γ-glutamyl transpeptidase; LT, liver transplantation; MCV, mean corpuscular volume; PEth, phosphatidyl ethanol. Adapted from REF.[140], Springer Nature Limited.

Arab JP, Izzy M et al. Nat Rev Gastroenterol Hepatol. 2022 Jan;19(1):45-59.

INTEGRATED CARE

Alcohol-associated liver disease (ALD)

Alcohol use disorder (AUD)

[1]Routine screening for alcohol use disorder (AUD) using validated screening questions such as AUDIT questionnaire and brief counseling or motivational interviewing provided at all levels of care to high-risk drinkers (aiming to reduce hazardous drinking).

[2]Creating local material with patient and family or caregiver-oriented text that informs on: diagnosis, treatments, general health recommendations (including alcohol drinking reduction and abstinence), "liver-related feedback", hot-lines, etc. Information should be easy to understand and in multiple languages according to local population.

[3]Evaluation by: hepatologist (or trained physician), addiction or liaison psychiatrist, psychologist, and social worker.

Primary to tertiary care

ALD/AUD screening[1]

"Positive" screening for query ALD and/or AUD

Refer to multidisciplinary evaluation in integrated clinic[3]

Provide patient with supplementary support material[2]

AUD evaluation

- Diagnosis confirmation: DSM-V criteria
- Social and family evaluation
- Evaluate and treatment of other comorbid psychiatric disorders and polysubstance use
- Toxicology (i.e., uEtG, PEth, uring drug screen)

ALD workup

- Clinical history and physical exam[4]
- Standard blood tests[5]
- Liver imaging[6]
- Further assessment as needed[7]
- Nutritional evaluation and interventions

[4]Look for signs of cirrhosis.

[5]CBC, liver function tests, albumin, creatinine, sodium, lipid profile, HBsAg, anti-core HCV, HIV serology.

[6]Screening with abdominal ultrasound, if available liver elastography is recommended for patients with platelets <150,000.

[7]Evaluate need for other drug testing in case of other substance use disorder.

AUD treatment[8]

- Alcohol abstinence[9]
- Medical treatment[10]
- Residential rehabilitation
- Intensive outpatient or inpatient care
- Individual or group AUD psychotherapy

[8]Consider ALD clinic session therapy interventions, 12-step or mutual support meetings, AUD medications according to local resources.

[9]Close follow-up and evaluation with CIWA score to evaluate the presence and severity of alcohol withdrawal syndrome.

[10]Consider risk-benefit of evidence-based medical treatment of AUD.

AUD/ALD follow-up

- Multidisciplinary team follow-ups[11]
- Regular workup[12]
- Tertiary center referral in case of advanced cirrhosis (according to liver scores)[13]
- Plan for long-term follow-up. Establish rapport and trust

[11]Consider telemedicine, phone follow-up, or in-person interviews (preferred) according to resources.

[12]Labs should include standard blood test, liver function, biomarkers of alcohol use, and guideline-oriented workup if cirrhosis.

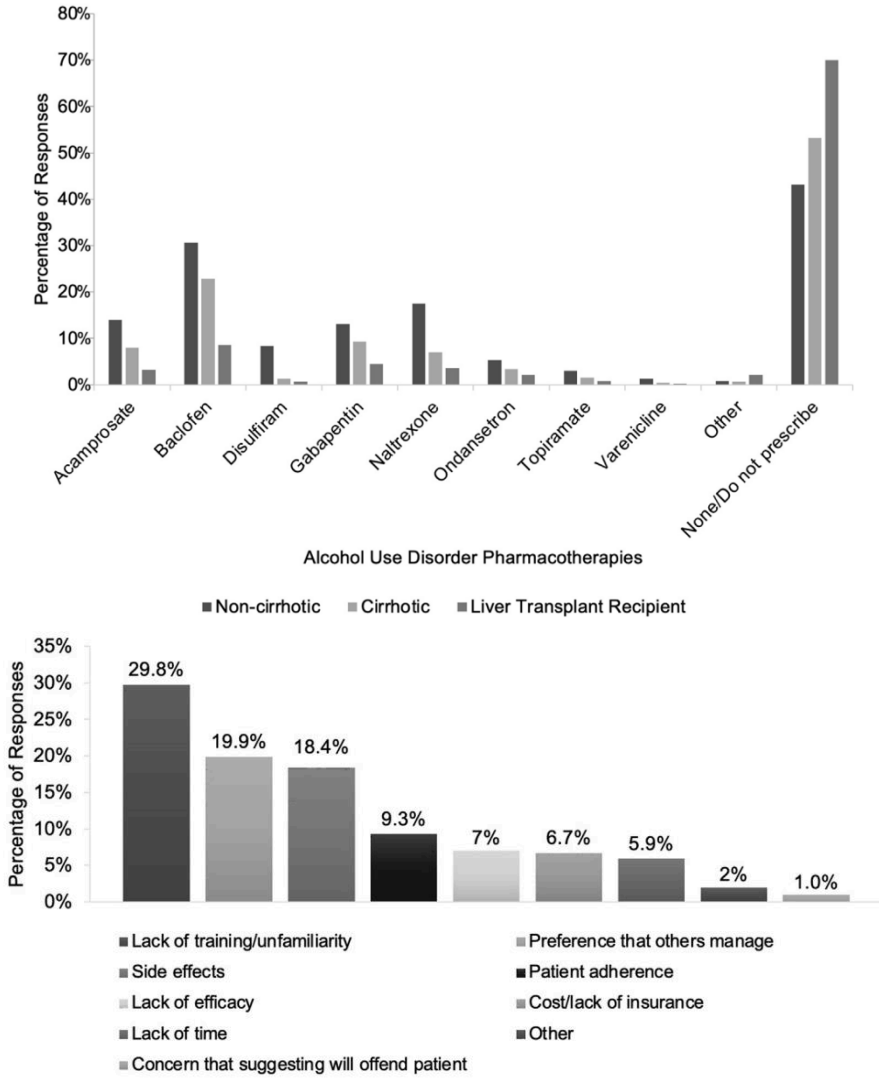
[13]Periodic Child-Pugh and MELD scores evaluation. Referral to tertiary center (hepatologist) if above B8 or 15, respectively.

Arab JP, Addolorato G, Mathurin P, Thursz MR. Clin Gastroenterol Hepatol. 2023 Jul;21(8):2124-2134.

PHARMACOLOGICAL THERAPY FOR ABSTINENCE

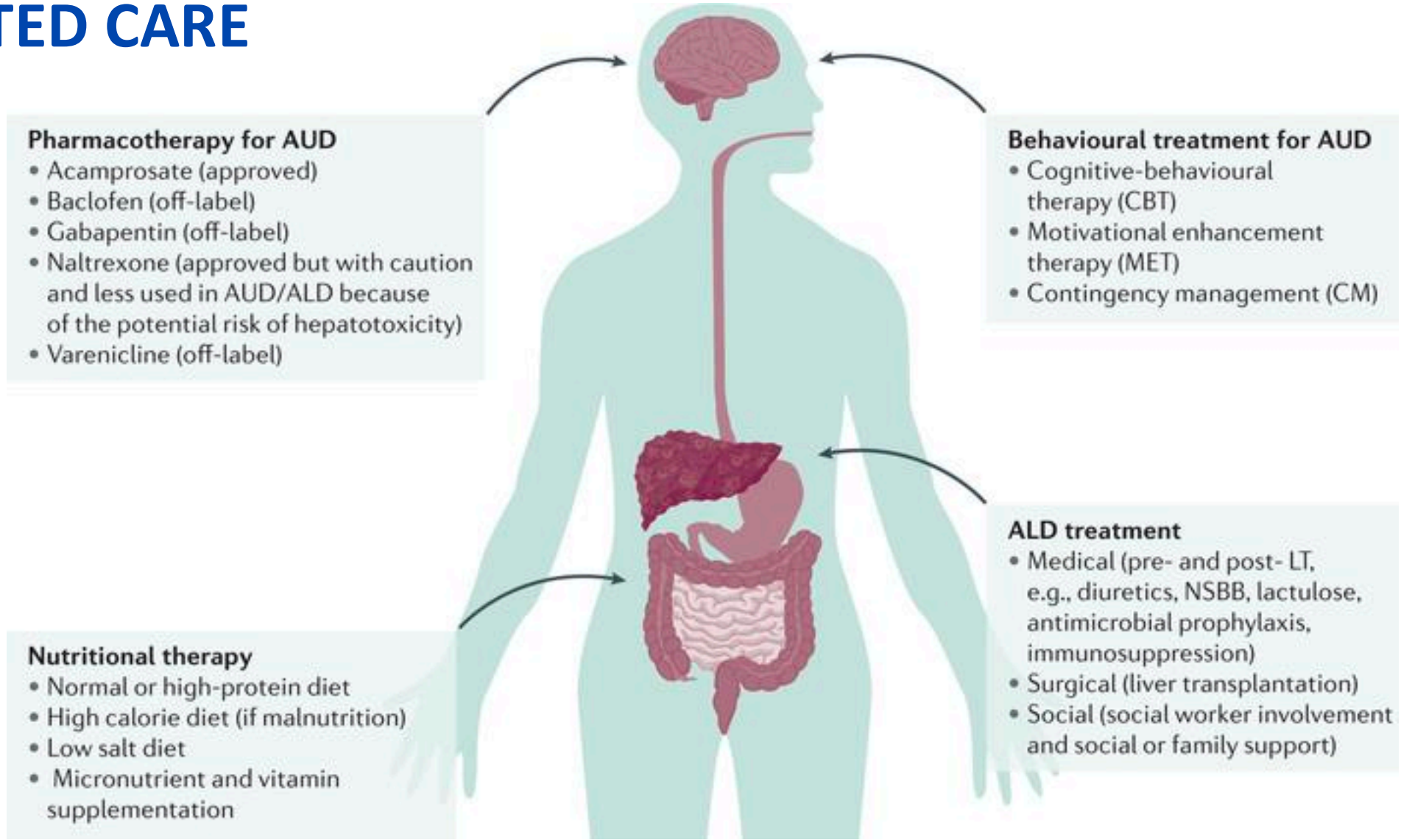
Proven to be safe and efficient in ALD
Baclofen (10 mg TID; 80 mg QD max)
Probably safe but not proven in ALD patients
Acamprosate (666 mg TID) Naltrexone (PO: 50 mg QD IM: 380 mg monthly) Nalmefene (Max daily dose: 1 tablet 18 mg) Topiramate (300 mg QD) Gabapentin (900-1800 mg QD) Varenicline (2 mg QD) Ondansetron (1-16 mcg/kg BID)
Contraindicated medications in cirrhosis
Disulfiram

Arab JP et al. Ann Hepatol. 2019; 18(3):518-535.



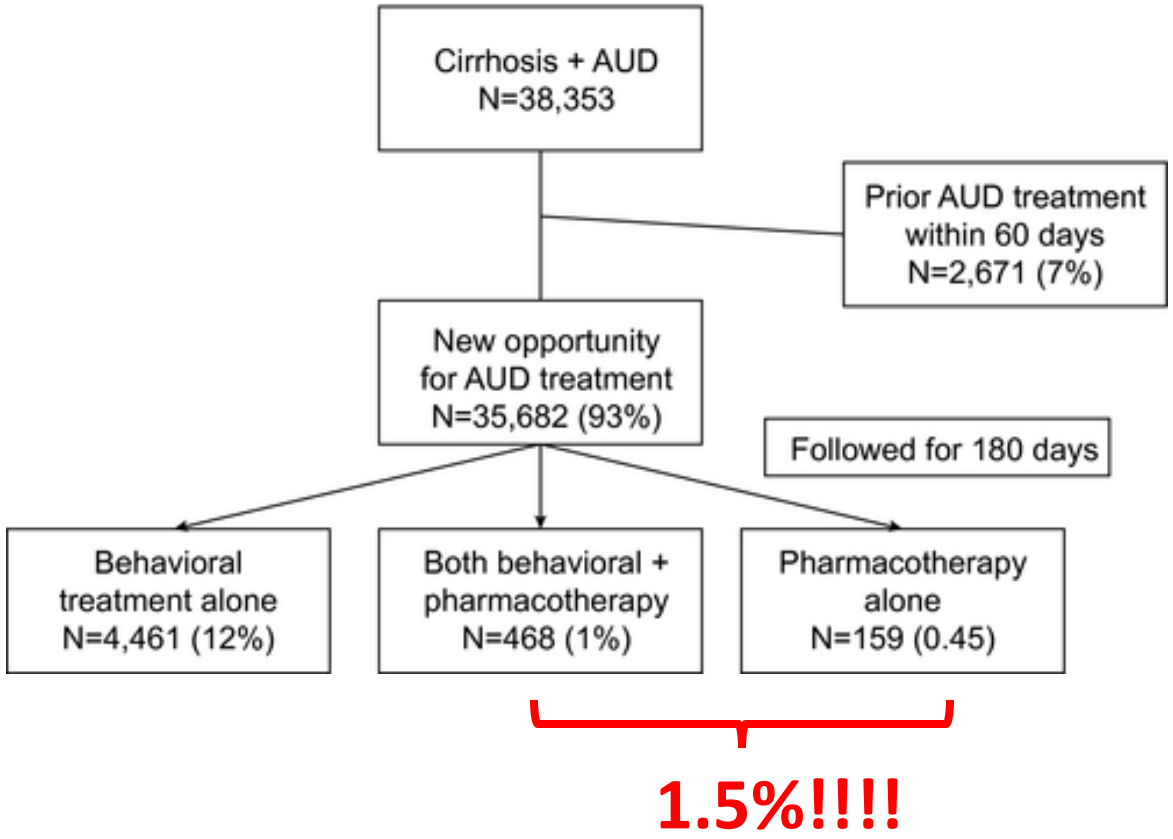
Im G et al. Clin Gastroenterol Hepatol. 2021;19:2407–2416

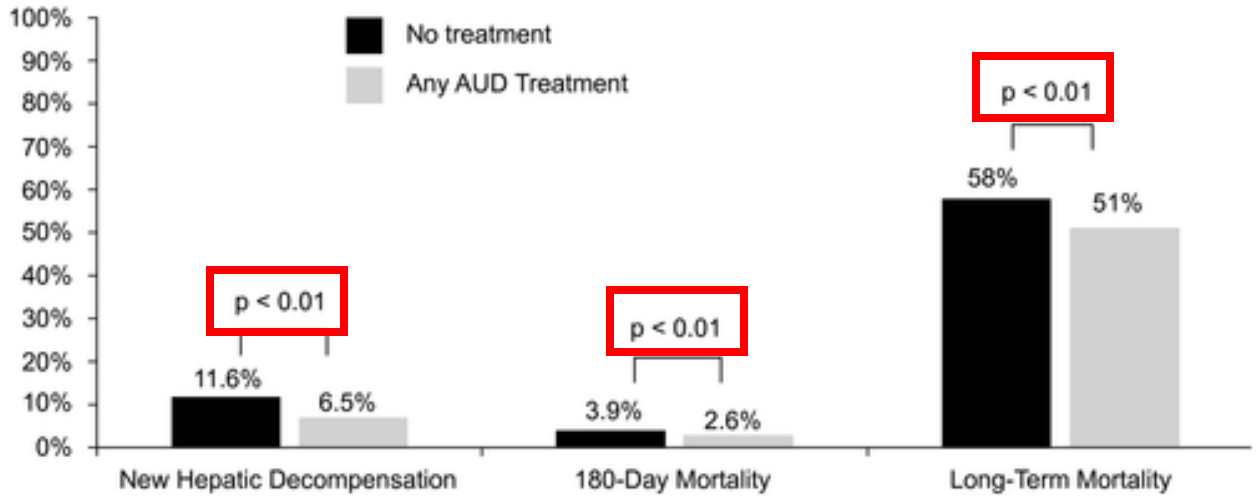
INTEGRATED CARE



Arab JP, Izzy M et al. Nat Rev Gastroenterol Hepatol. 2022 Jan;19(1):45-59.

PHARMACOLOGICAL THERAPY FOR ABSTINENCE



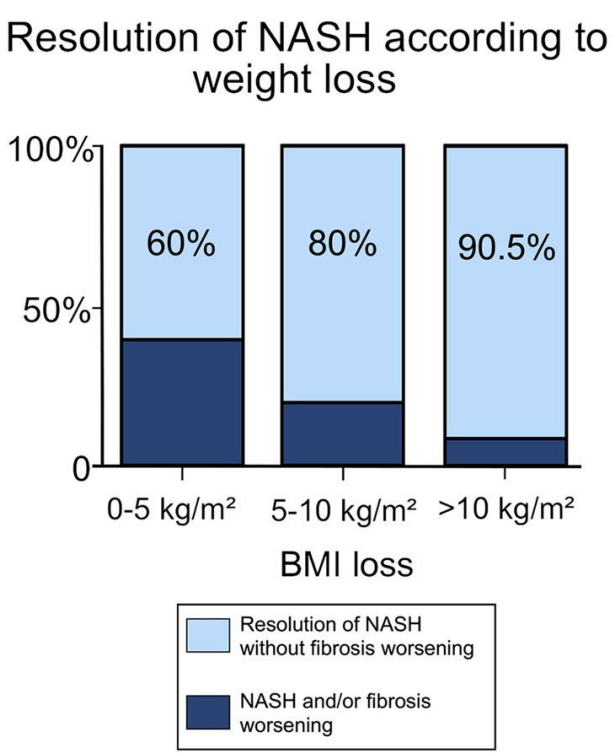


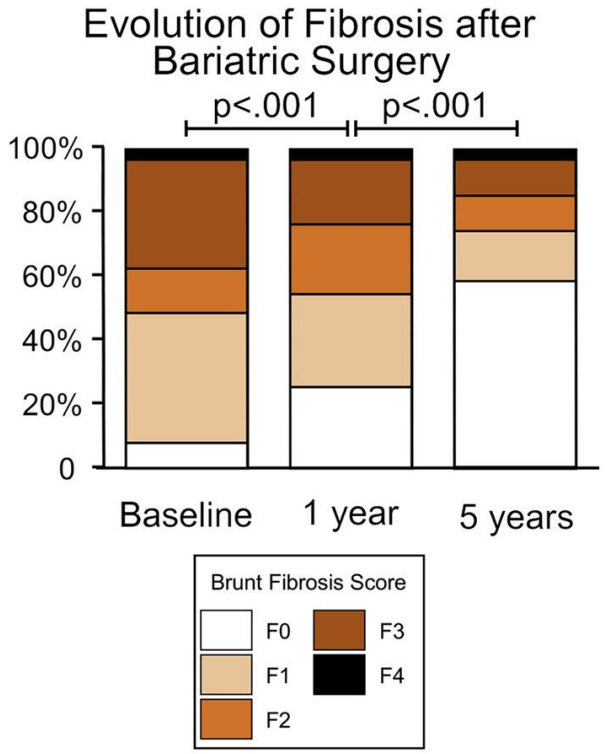
AUD treatment improves survival

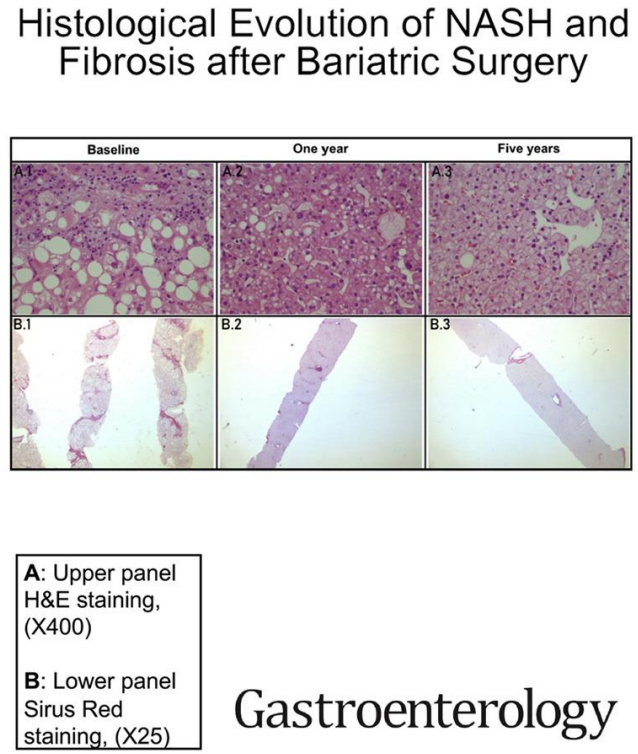
Rogal, S. et al. Hepatology 71, 2080–2092 (2020).

Bariatric surgery and MASLD

- **MASH resolution** in **84%** of patients at **5 years.**
- **Reduction of fibrosis is progressive**, beginning during the first year and continuing through 5 years.







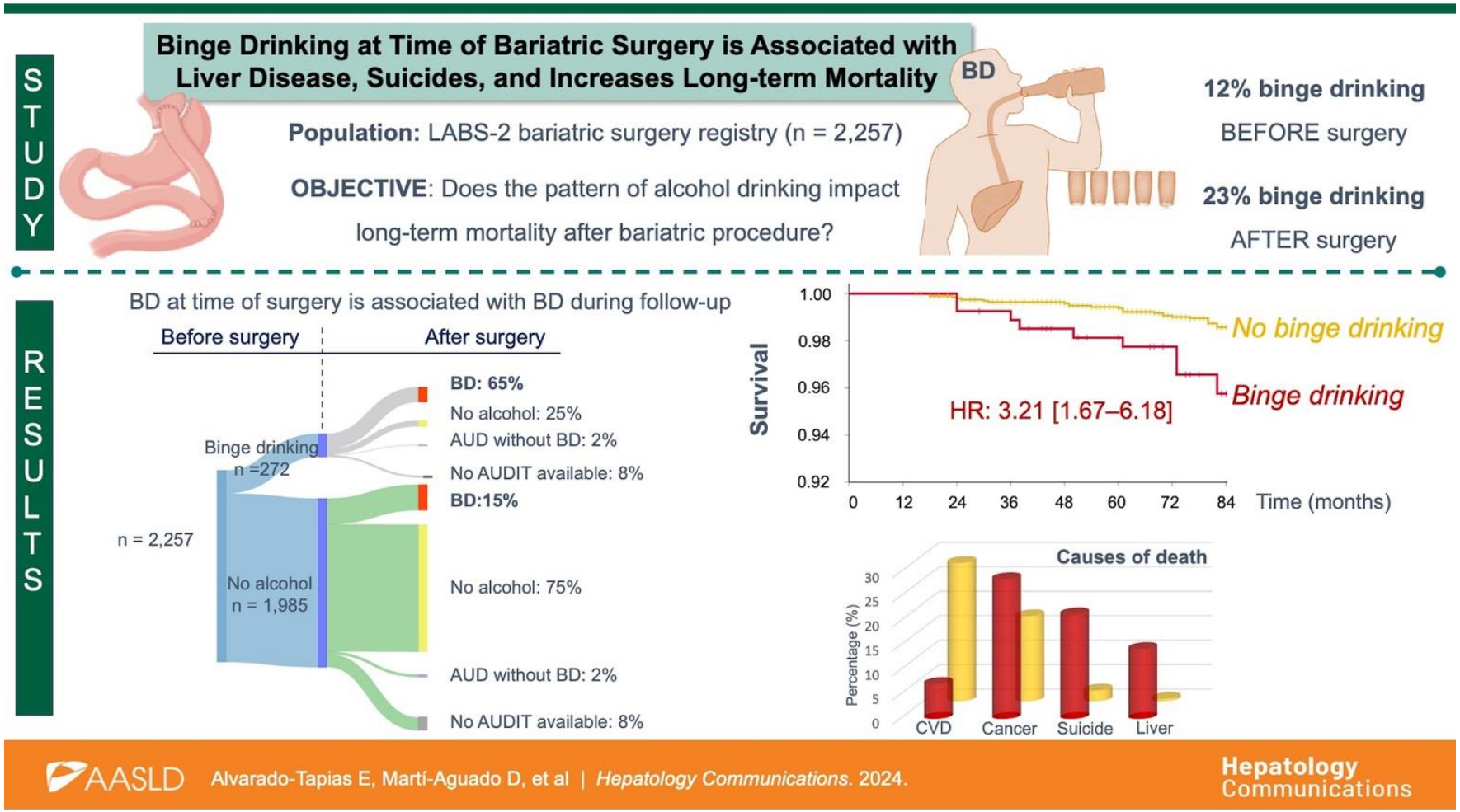
Gastroenterology

Lassailly G et al. Gastroenterology. 2020 Oct;159(4):1290-1301.e5.

Bariatric surgery and AUD

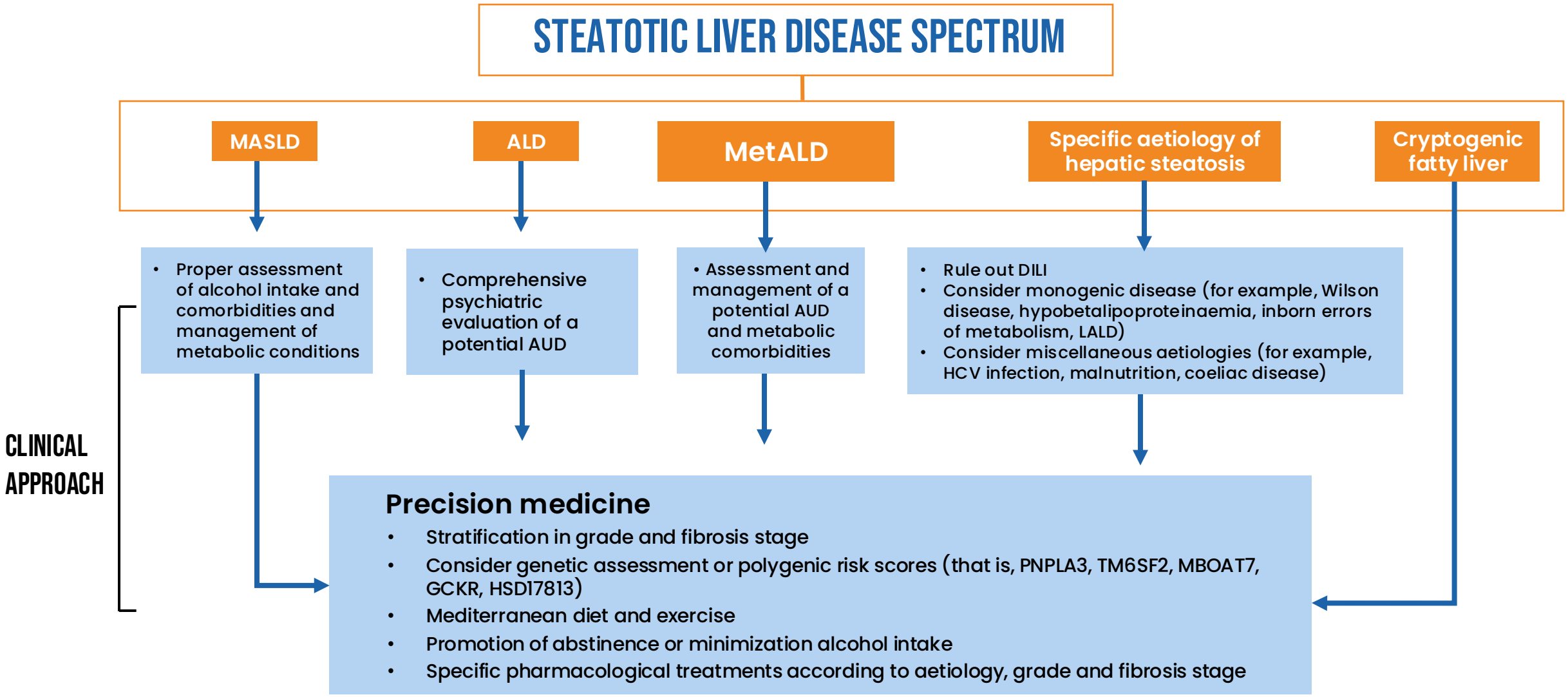
Binge drinking at time of **bariatric surgery** is associated with:

- Liver disease
- Suicides
- Increases long-term mortality



Alvarado-Tapias E et al. Hepatol Commun. 2024 Jul 22;8(8):e0490.

CLINICAL CONSIDERATIONS FOR MANAGEMENT



Díaz LA, et al. Nature Reviews Gastroenterol Hepatol. 2023 Aug 15.

PHP Alcohol Global: Development of a Preparedness Index

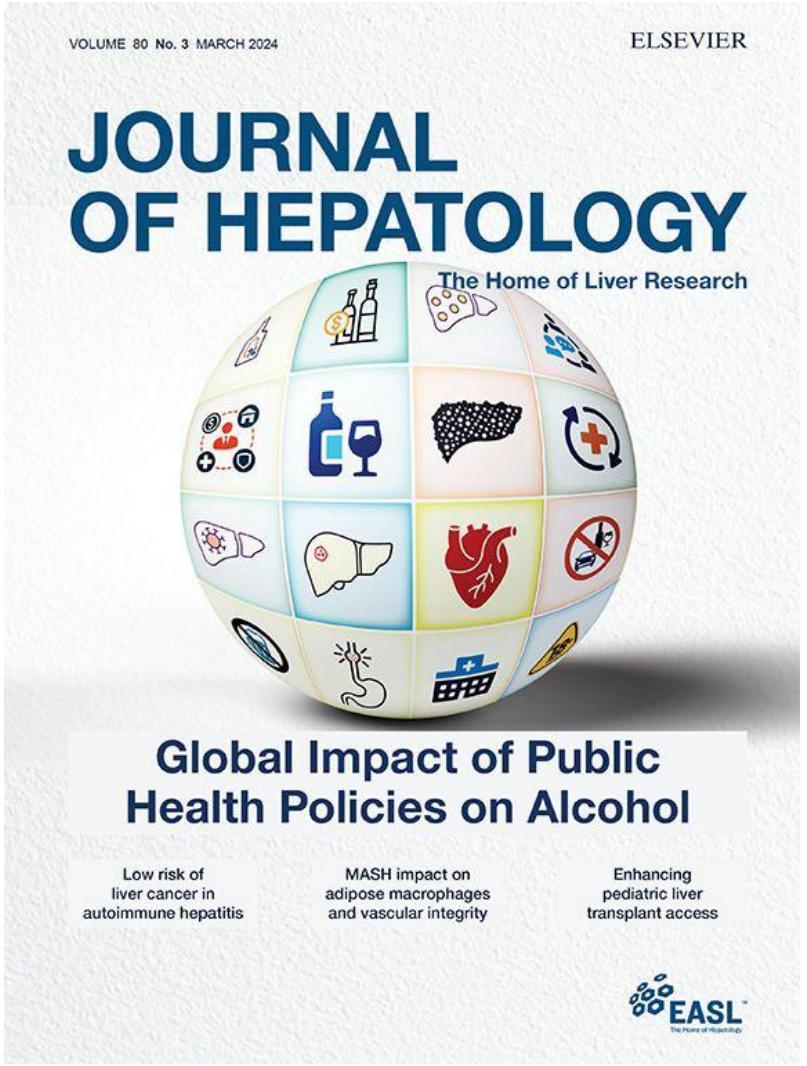
169 countries

Africa (50), America (35), Asia (33),
Europe (46), Oceania (5)

Median GDP per capita: US$ 6,146

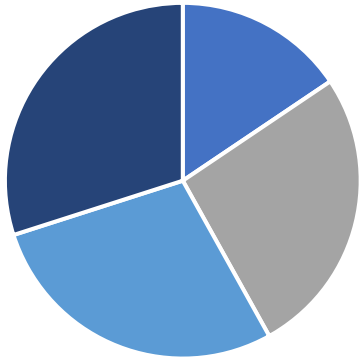
Median alcohol per capita: 6.6 liters

- Recorded: 4.7 liters
- Unrecorded 1.2 liters



Diaz LA et al. J Hepatol. 2024 Mar;80(3):409-418.

Income level



Low
Lower-middle
Upper-middle
High

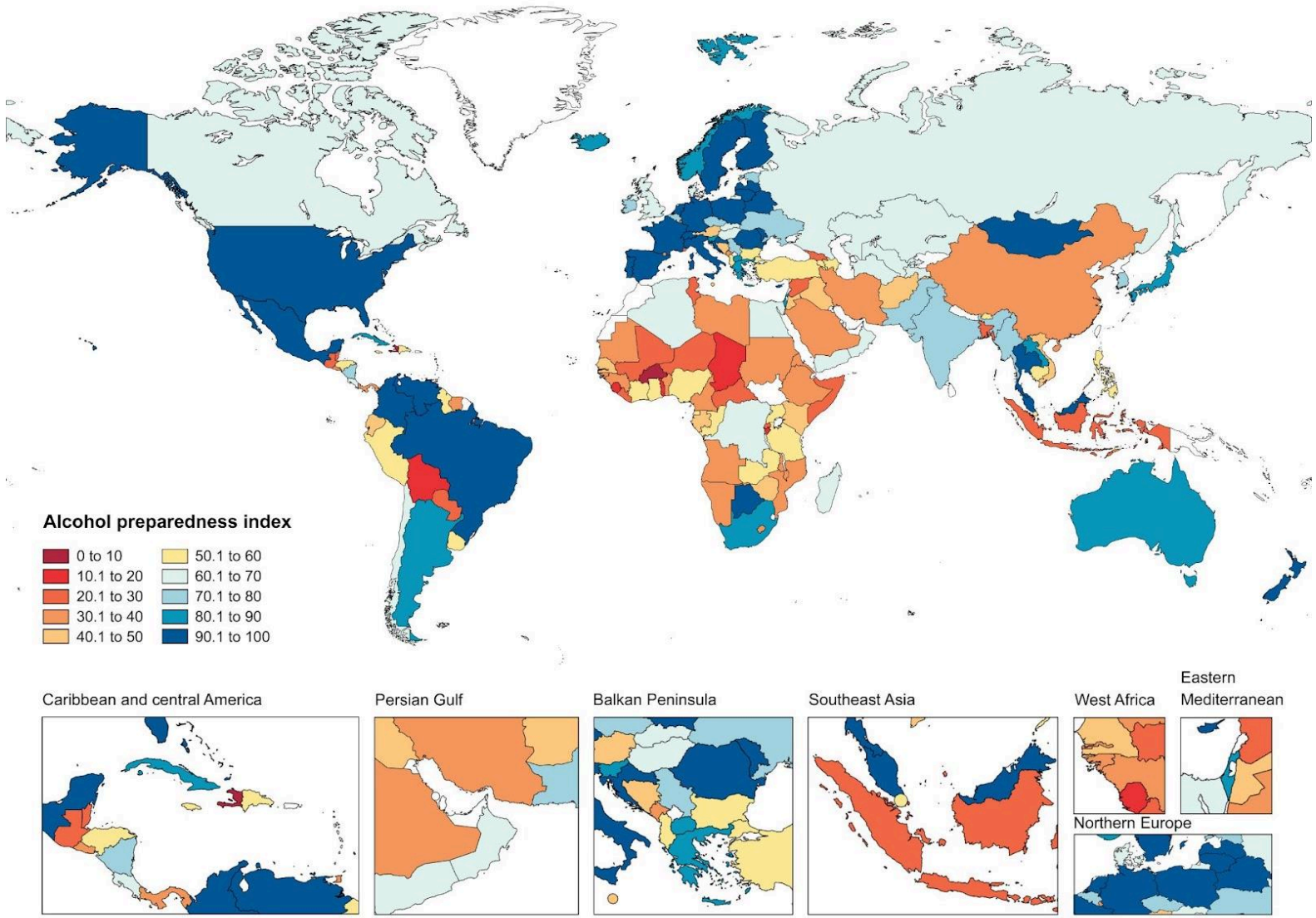
Median score
54 [34.9-76.8]

Important heterogeneity in the establishment of PHP:

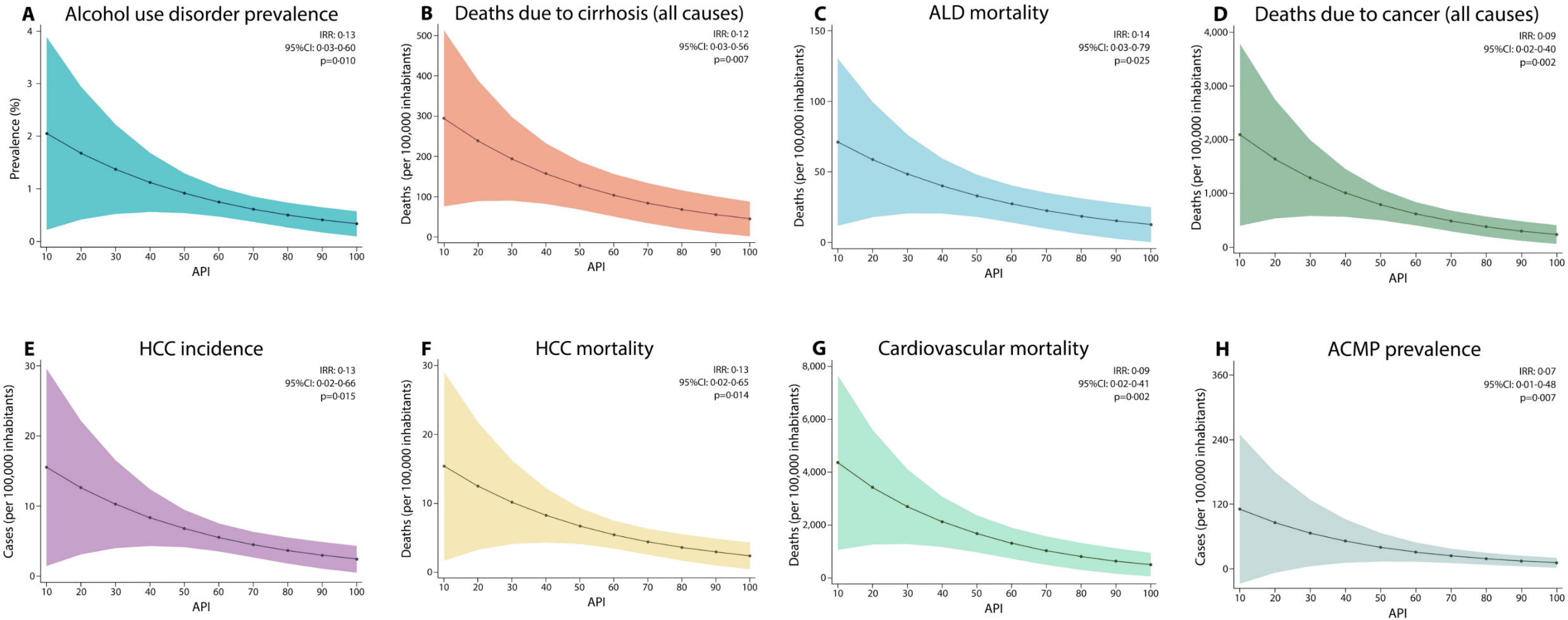
Highest: Europe

Lowest: Africa

Alcohol preparedness index (API) to assess public health policies on alcohol worldwide

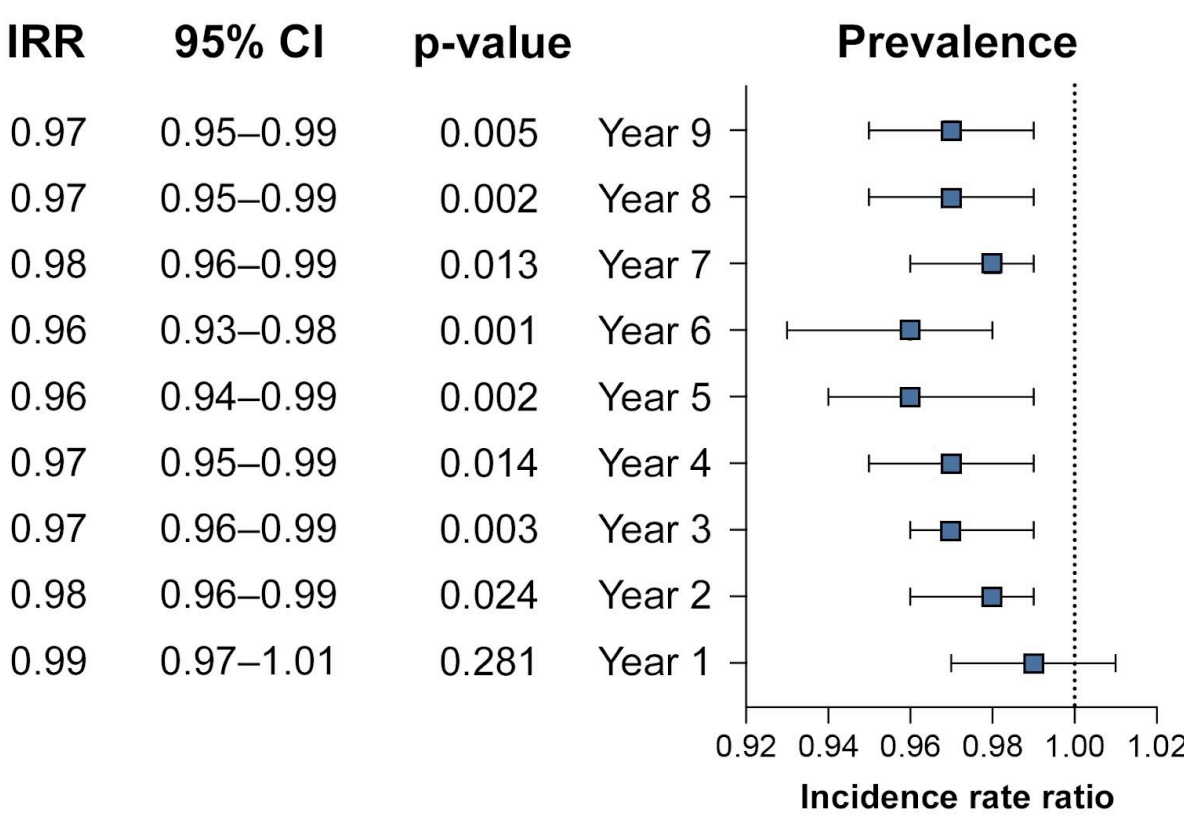


Diaz LA et al. J Hepatol. 2024 Mar;80(3):409-418.

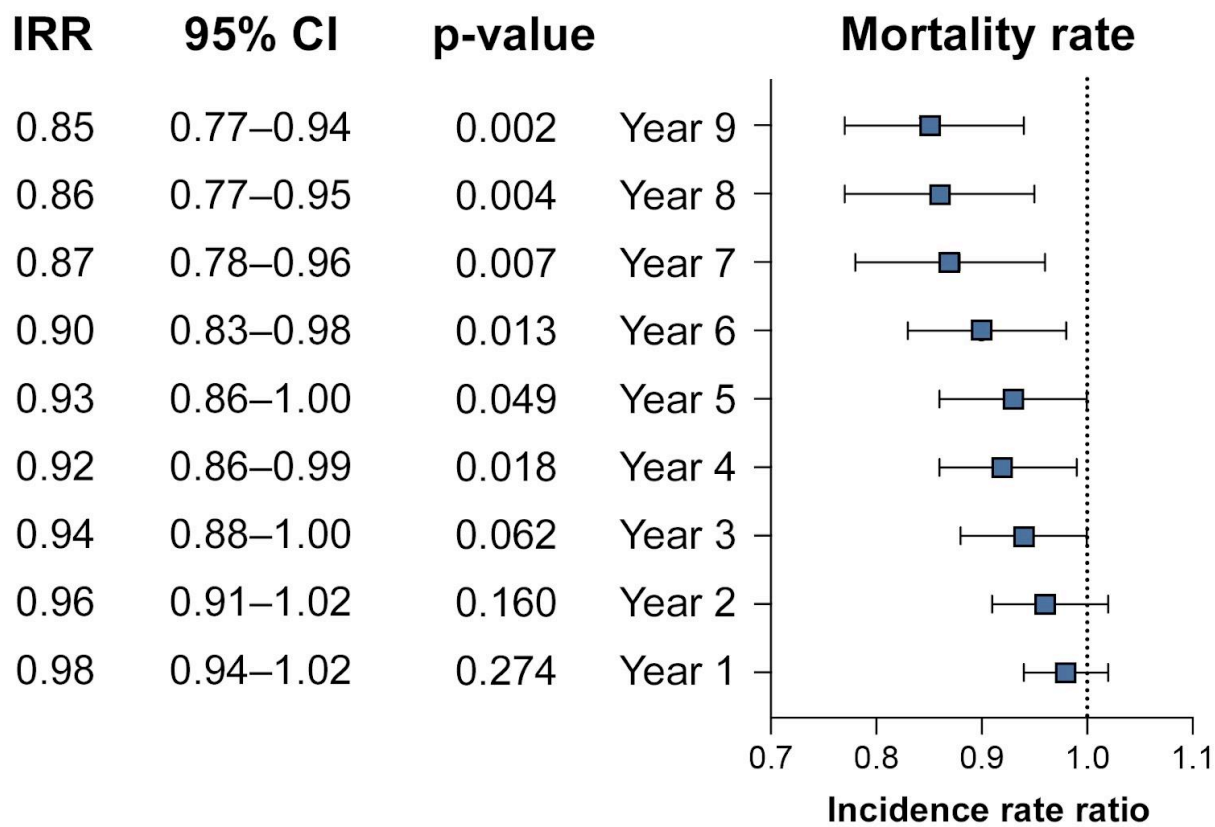


Diaz LA et al. J Hepatol. 2024 Mar;80(3):409-418.

Association between alcohol-related PHP and AUD prevalence rate over time



Association between alcohol-related PHP and ALD mortality rate over time



Diaz LA et al. J Hepatol. 2024 Mar;80(3):409-418.

Take home messages

- **MASLD and ALD** are the leading causes of chronic liver disease worldwide
  - They are frequently overlapped
- New definition: **MetALD**:
  - MASLD and increased alcohol intake: 140–350 g and 210–420 g per week for women and men
- Identifying **under-reported alcohol consumption** in patients with presumed MASLD using standardized questionnaires and alcohol biomarkers is highly desirable
- Promotion of **abstinence or minimization of alcohol intake** should be recommended in addition to diet and exercise
- MetALD needs a whole-society approach and implementation of PHP.