

STUDENT NAME: PRATHAM RAVINDRAKUMAR LUHAR

STUDENT ID: 2426580

MODULE NAME: COMMUNITY CARE AND MANAGEMENT OF LONGER-TERM
CONDITIONS

MODULE CODE: LCHS7003

ASSIGNMENT TITLE: CHRONIC LIVER DISEASE (CLD)

LECTURER NAME: DR. BRIAN MASHUMBA



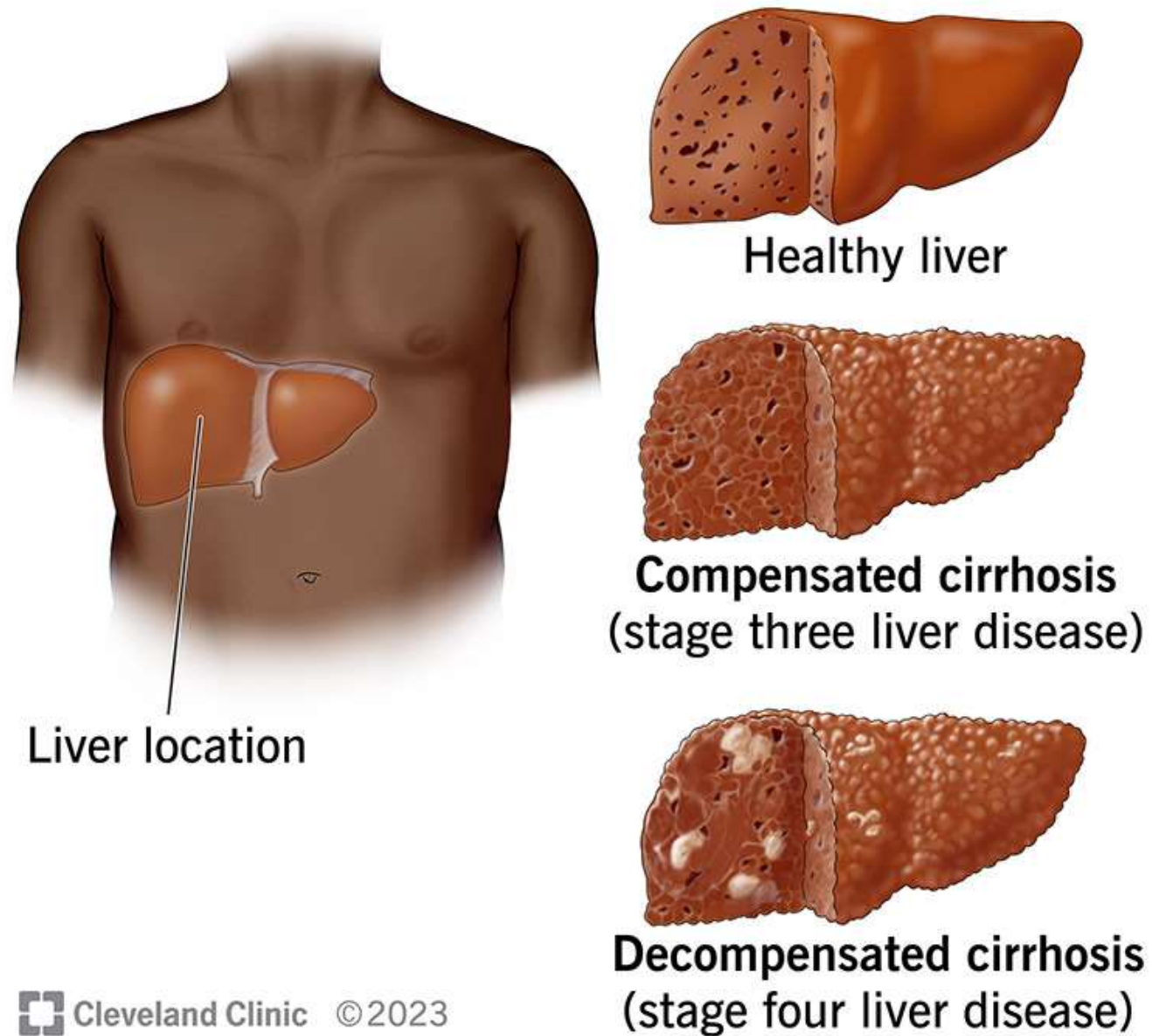
CHRONIC LIVER DISEASE (CLD)





Cirrhosis of the liver

Late stage liver disease



INTRODUCTION

What is Chronic Liver Disease

- Chronic Liver Disease (CLD) is a set of disorders with chronic evolution that is characterized by the gradual destruction of the liver, the development of fibrosis, cirrhosis and possible liver failure (Sharma and Nagalli, 2023).
- It is a chronic disease of the structure and functioning of the liver, which remains silent during many years, until later in the course of its development.
- CLD comprises a spectrum: chronic hepatitis, fatty liver disease, cirrhosis, and end stage liver disease (Linden-Torres et al., 2022).
- CDL is a silent killer because many individuals are not diagnosed before they develop complications.
- Impact: morbidity and mortality can be minimized by early recognition, prevention and control.



ETIOLOGY & CAUSES OF CLD

Part 1 (Viral, Alcohol, NAFLD)

CIRRHOSIS



CAUSES

- * **CHRONIC HEPATITIS B or C INFECTION**
- * **ALCOHOLIC LIVER DISEASE**
- * **NON ALCOHOLIC LIVER DISEASE**
- * **GENETIC DISORDERS**
 - ~ hemochromatosis
 - ~ Wilson disease
 - ~ α 1 antitrypsin deficiency
- * **AUTOIMMUNE HEPATITIS**
- * **BILIARY DISORDERS**
 - ~ primary sclerosing cholangitis
 - ~ primary biliary cholangitis

COMPLICATIONS

PORTAL HYPERTENSION

- ASCITES
- SPLENOMEGALY
- PORTOSYSTEMIC COLLATERALS
- HEPATOPULMONARY or HEPATORENAL SYNDROME

↓↓ LIVER FUNCTION

- HEPATIC ENCEPHALOPATHY
- ↑↑ ESTROGEN
- JAUNDICE
- EDEMA
- EASY BRUISING

LEARN MORE on  **OSMOSIS.org!**

- Major causes: chronic viral hepatitis (e.g. Hepatitis B, Hepatitis C), alcohol-related liver disease (ALD), and non-alcoholic fatty liver disease (NAFLD).
- Epidemiological transition: in the recent decades NAFLD became a predominant cause of CLD in the world (Duo et al., 2025).
- Alcohol use is still important especially in the cases of ALD and alcohol related cirrhosis (Luo et al., 2025).
- Viral hepatitis (B & C): they play a significant role, particularly in areas with a high prevalence of HBV/HCV (Zhang et al., 2025).

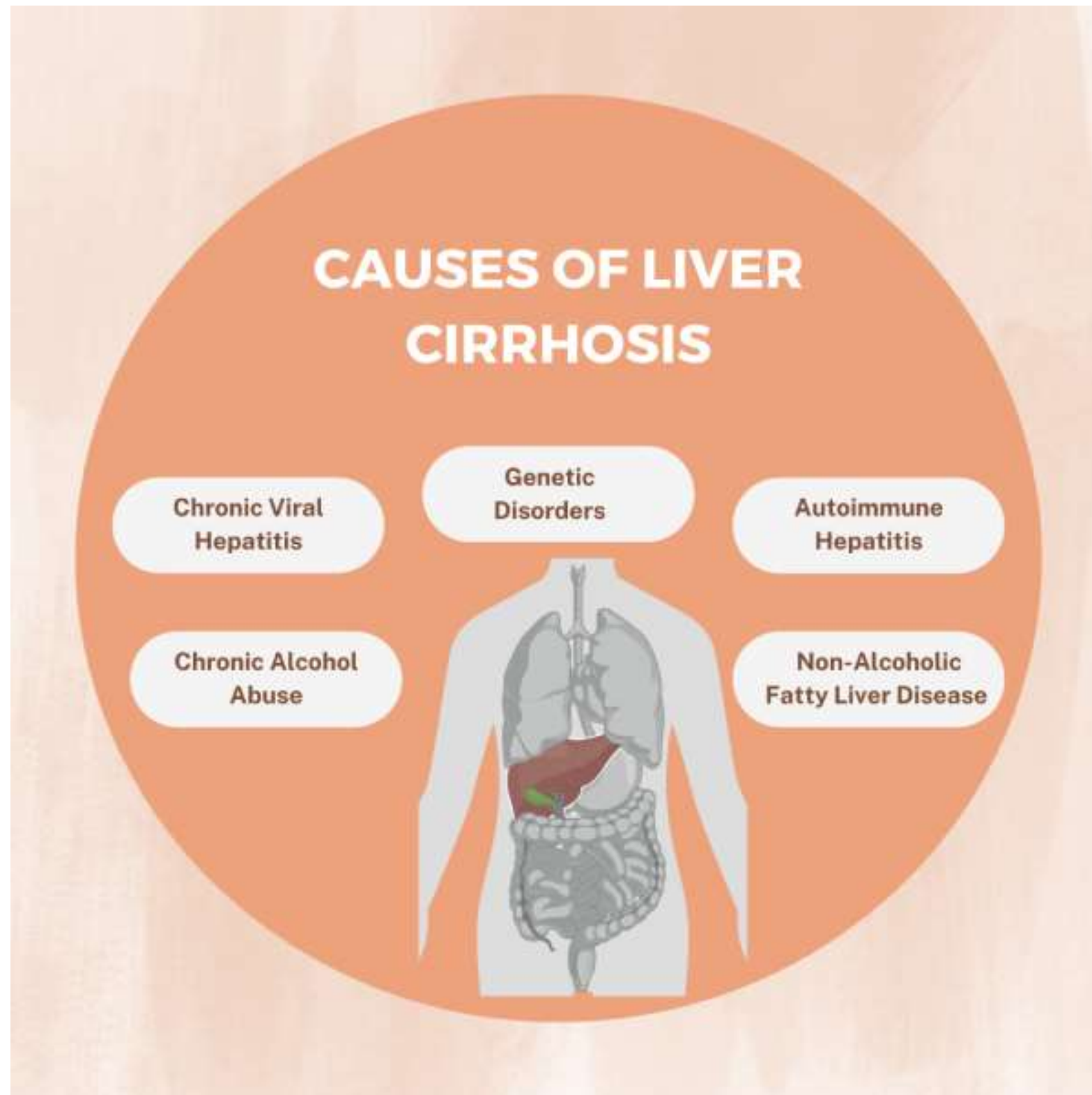


ETIOLOGY & CAUSES OF CLD



Part 2 (Autoimmune, Genetic, Others)

- Other causes: autoimmune liver diseases (e.g. autoimmune hepatitis, cholangitis), metabolic/genetic (e.g. hemochromatosis, Wilson's), drug- or toxin-induced liver damage, biliary diseases (Linzay et al., 2021).
- These non-alcoholic, non-viral causes combined together account for a number of cases of CLD in the world (Zhang et al., 2025).
- Relevance: non-viral/non-alcohol causes outline the necessity of wide diagnostic awareness in addition to traditional risk factors.
- Significance of taking into account the comprehensive etiology with diagnosis of CLD not all CLD secondary to lifestyle or to virus.





Signs and Symptoms of

Liver Cirrhosis

Signs and Symptoms of Liver cirrhosis are as follows:

- Fatigue
- Easy bruising or bleeding
- Itchy skin
- Yellow discoloration in the skin and eyes (**Jaundice**)
- Fluid accumulation in the abdomen (**Ascites**)
- Loss of appetite
- Nausea and vomiting
- Fluid buildup in the legs, ankles, and feet (**Edema**)
- Unexplained weight loss
- Confusion, drowsiness and slurred speech (**Hepatic Encephalopathy**)
- Spider like blood vessels on the skin
- Redness in the palms of the hands, and more



Jaundice



Nausea



Weight loss



Swelling in your legs



Fatigue



Ascites
(Abdominal fluid build up)



SYMPTOMS OF CHRONIC LIVER DISEASE

- In early CLD, it is often asymptomatic – a patient can be in good health until further destruction occurs (ArcHealthCare.UK, 2019).
- Symptomatic manifestations: fatigue, weakness, loss of appetite, nausea.
- However, when the disease progresses: jaundice (yellow skin/eyes), dark urine, pale stools, abdominal swelling (ascites), easy bruising, itchiness (Tholey, 2019).
- Advanced disease can cause complications: bleeding (varices), hepatic encephalopathy, liver failure.
- Late diagnosis prevalent – emphasizes the role of screening among high-risk people.



RISK FACTORS

Modifiable and Non-Modifiable

Risk factors of

Liver failure

Numerous risk factors can harm the liver gradually or all at once, leading to liver failure. The following are some of the main risk factors for liver failure:

- Alcohol consumption
- Non-steroidal anti-inflammatory drugs (NSAIDS) abuse
- Type 2 diabetes
- Family history of liver disease.
- Unprotected intercourse
- Toxins exposure

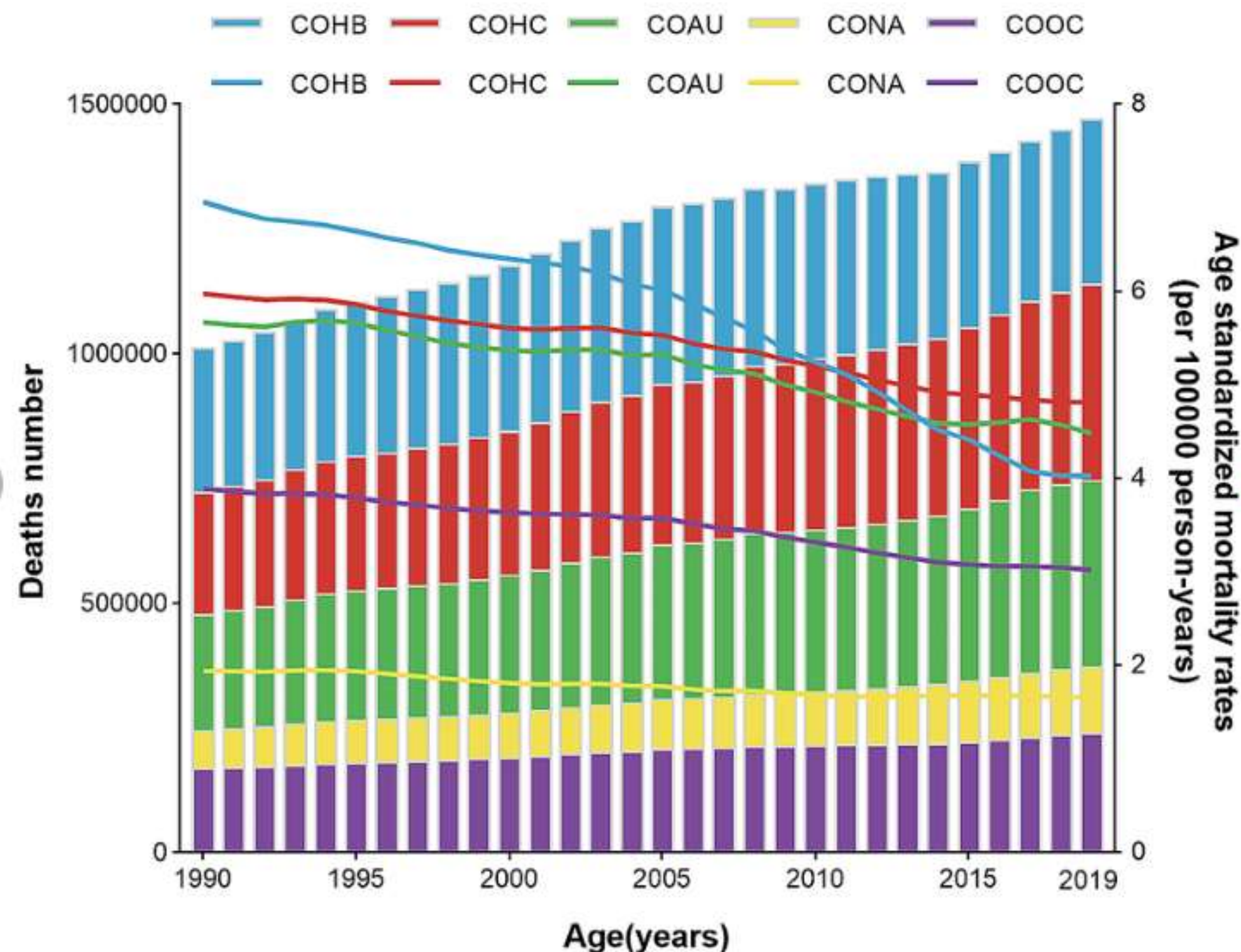


Modifiable Risk Factors	Non-Modifiable Risk Factors
• Alcohol use (major contributor to ALD and cirrhosis)	• Age (risk increases with advancing age)
• Dietary patterns — obesity, high-fat, high-sugar intake contributing to NAFLD	• Sex (males at higher risk for ALD; females more vulnerable to alcohol toxicity)
• Sedentary lifestyle / metabolic syndrome (central obesity, diabetes, hypertension)	• Ethnicity (e.g., higher NAFLD prevalence in South Asians; higher HBV in East Asians)
• Poor lifestyle habits affecting liver inflammation and fat accumulation	• Genetic predisposition — inherited metabolic, autoimmune, or cholestatic conditions
• Modifiable factors account for a large proportion of preventable CLD cases, underscoring the importance of lifestyle interventions.	• Non-modifiable factors influence susceptibility and disease progression, requiring personalised monitoring.

PREVALENCE & MORTALITY

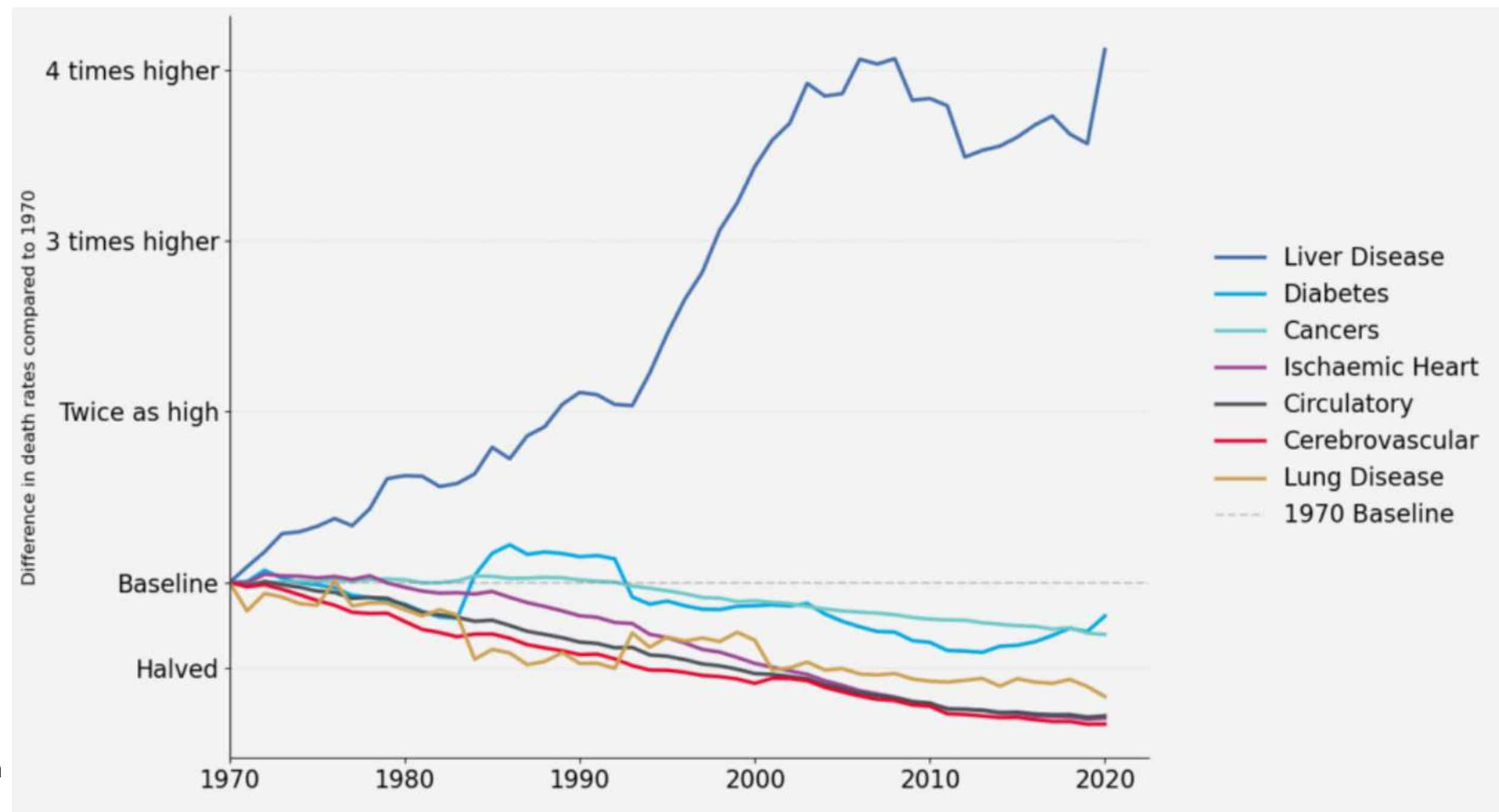
• GLOBAL OVERVIEW (2021)

- As of 2021, CLD (cirrhosis and other chronic liver diseases) prevalence was 1.70 95% UI 1.581.82 bn) across the world (Zhang et al., 2025).
- Incidence (new cases) in the world in 2021: $\approx$ 58.4 million (95% UI 54.2 -62.8 M) cases (Duo et al., 2025).
- CDL-related deaths in the world in 2021: 1.43 (1.31 1.56 M).
- Even though the absolute numbers are increasing, age-standardized death rate has been decreasing throughout the decades – which means that medical care has improved over the years around the world.

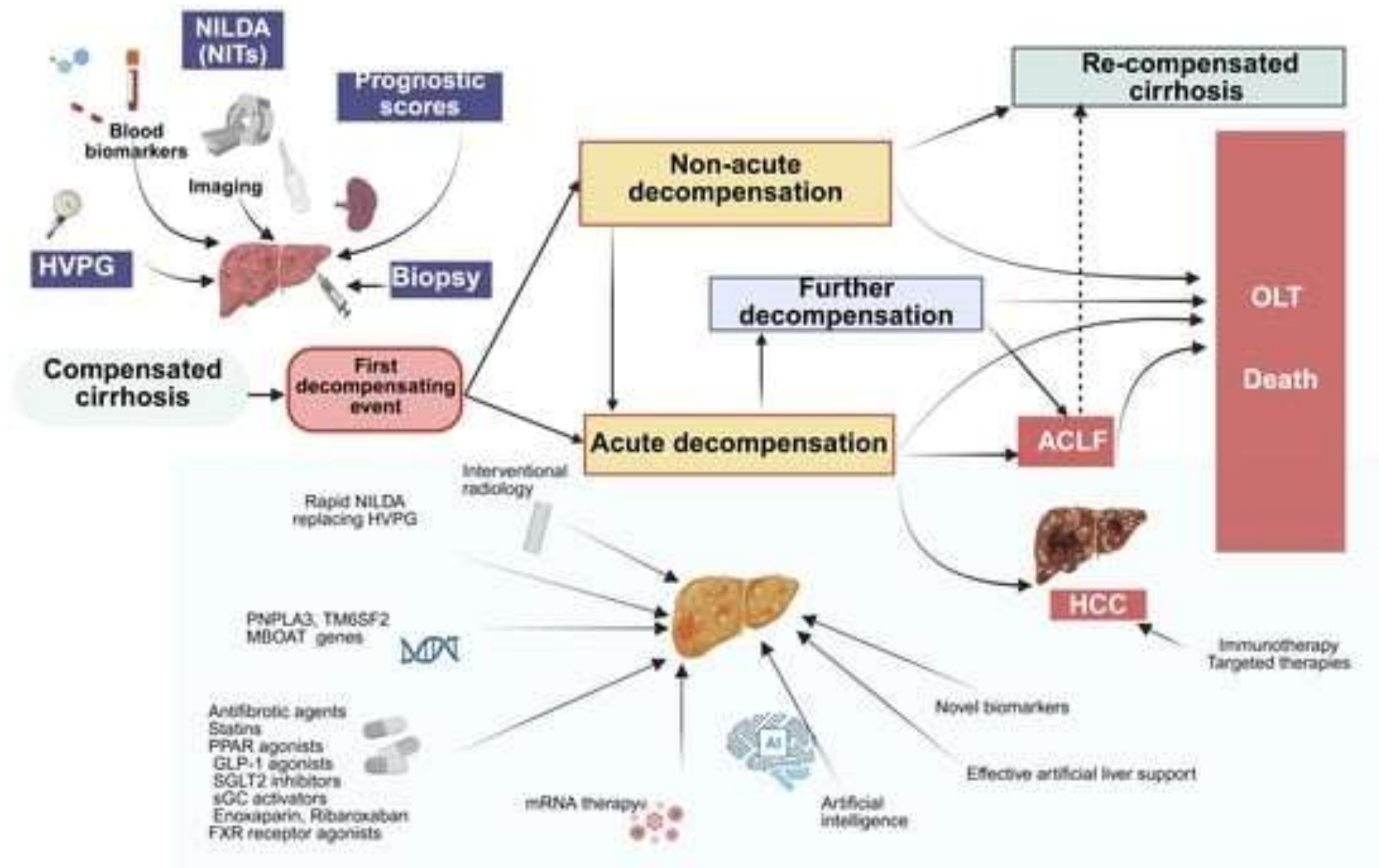


Number of mortality and ASMR at the global level by etiology of liver cirrhosis and other chronic liver diseases, 1990–2019. COHB, liver cirrhosis and other chronic liver diseases due to hepatitis B. COHC, liver cirrhosis and other chronic liver diseases due to hepatitis C. COAU, liver cirrhosis and other chronic liver diseases due to alcohol use. CONA, liver cirrhosis and other chronic liver diseases due to NAFLD. COOC, liver cirrhosis and other chronic liver diseases due to other cause. ASMR, age-standardized mortality rate

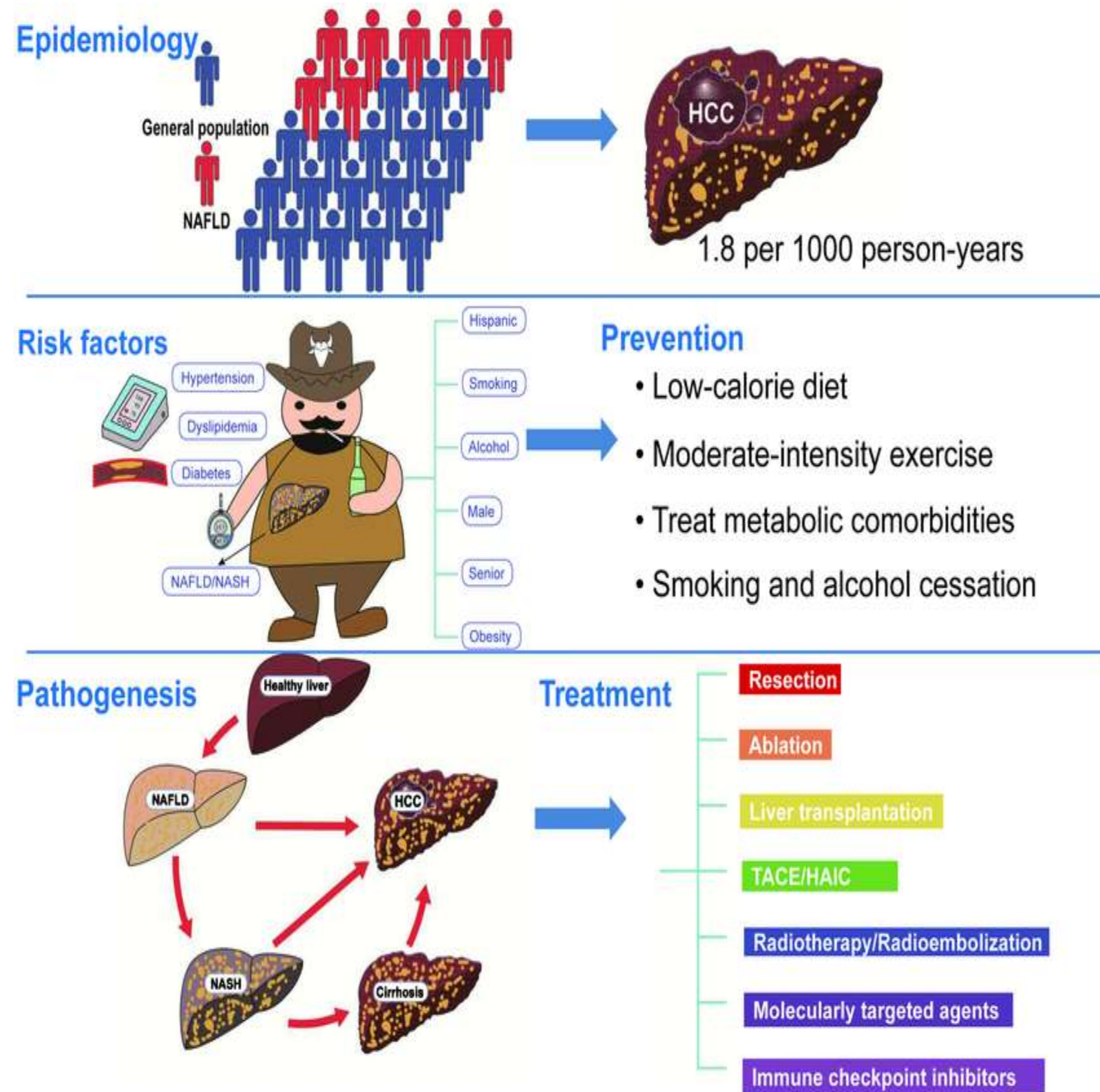
- In the UK, more than 11,000 liver disease related deaths per annum (i.e. 31 per day on average) (British Liver Trust, 2025).
- Mortality caused by liver disease in UK has risen by an average of 400 percent since the 1970s.
- Numerous situations can be avoided, but the death rates keep increasing, particularly due to alcohol abuse and obesity (Berger, 2023).
- Premature deaths (below 75 years) associated with liver disease are on the rise: in 2023, the rate in England has hit 21.9 per 100,000 (compared with 15.4 per 100,000 in 2001) (GOV.UK, 2024).



CHANGING PATTERNS — SHIFT IN CLD ETIOLOGY OVER TIME



- During the period 1990–2021, the world cases of CLD were on a steep rise– majorly fueled by the escalation of NAFLD (non-alcoholic fatty liver disease) (Luo et al., 2025).
- On the one hand, the incidence of cirrhosis caused by viruses (HBV/HCV) decreased, but on the other hand, there was an increase in the metabolic and lifestyle-associated liver disease (Devarbhavi et al., 2023).
- In most of the high-and middle-income nations, NAFLD has recently become the leading cause of CLD – as a testament to worldwide obesity and metabolic syndrome tendencies (Guo et al., 2025).
- Implication: there should be a shift in the way of viewing the issue of hepatitis in the community – metabolic and lifestyle risk factor control, rather than viral hepatitis only.



ECONOMIC & SOCIAL BURDEN OF CLD

- CLD is costly to the hospital in direct terms: hospitalization, treatment of complications, liver transplant, LTC (Ufere et al., 2022).
- Indirect costs: loss of productivity, disability, premature mortality, diminished quality of life, social stigma, in particular, related to alcohol related disease.
- Mortality due to liver diseases is much greater in more deprived areas in the UK, which is an indication of social inequalities (Newton et al., 2015).
- Late diagnosis (when complications have already developed) is associated with poor health and economic burden, which can be prevented to a large extent with early detection and prevention (Ratnapradipa et al., 2023).

DIAGNOSIS OF CHRONIC LIVER DISEASE (OVERVIEW)

- Diagnostic techniques are: blood (liver functioning tests, viral markers, autoantibodies), imaging (ultrasound, CT, MRI), non-invasive fibrosis (e.g. elastography / FibroScan) assessment, liver biopsy (gold standard but invasive) (Jimmy Che-To Lai et al., 2023).
- It is difficult to detect the illness at an early stage since a lot of people do not show any symptoms till the severe illness has developed (Raphael et al., 2025).
- Significance of screening people at risk (e.g. heavy alcohol consumers, obese individuals, metabolic syndrome, viral hepatitis) at an early age (Ginès et al., 2021).
- Early detection will help avoid the development of cirrhosis, decompensated liver disease or liver cancer (Mayo Clinic, 2023).



MANAGEMENT AND PREVENTION STRATEGIES

- Treat the risk factors that can be changed: promote alcohol intake reduction/quitting, healthy nutrition, weight loss, exercise — to prevent or delay NAFLD and ALD (Hadebi et al., 2023).
- Viral causes can be controlled: vaccination (e.g. against HBV), screening and antiviral therapy of viral hepatitis (Connors et al., 2023).
- Early diagnosis and frequent observation of fibrosis/damage, prompt treatment of complications (ascites, varices, encephalopathy) (Tapper and Parikh, 2023).
- Public health actions: health education, awareness, inequality decrease in deprived places, availability of screening (A. Altova et al., 2024).
- Goal: lessening of burden through prevention, early intervention as opposed to late-stage treatment.

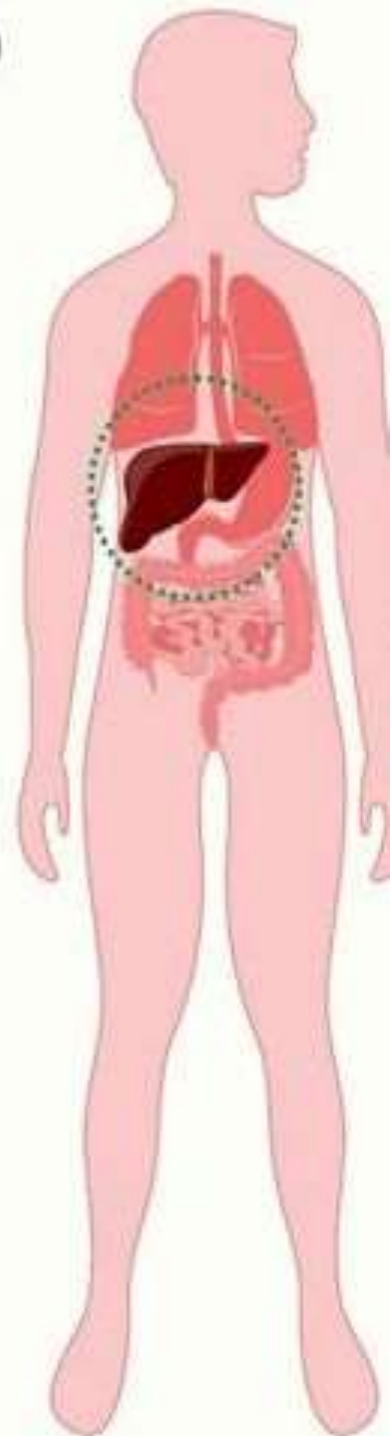
Prevention of

Liver Cirrhosis



Preventative care can be divided into three steps:

- Healthy lifestyle adoption
- Regular health screening
- Care optimisation, especially in risk populations



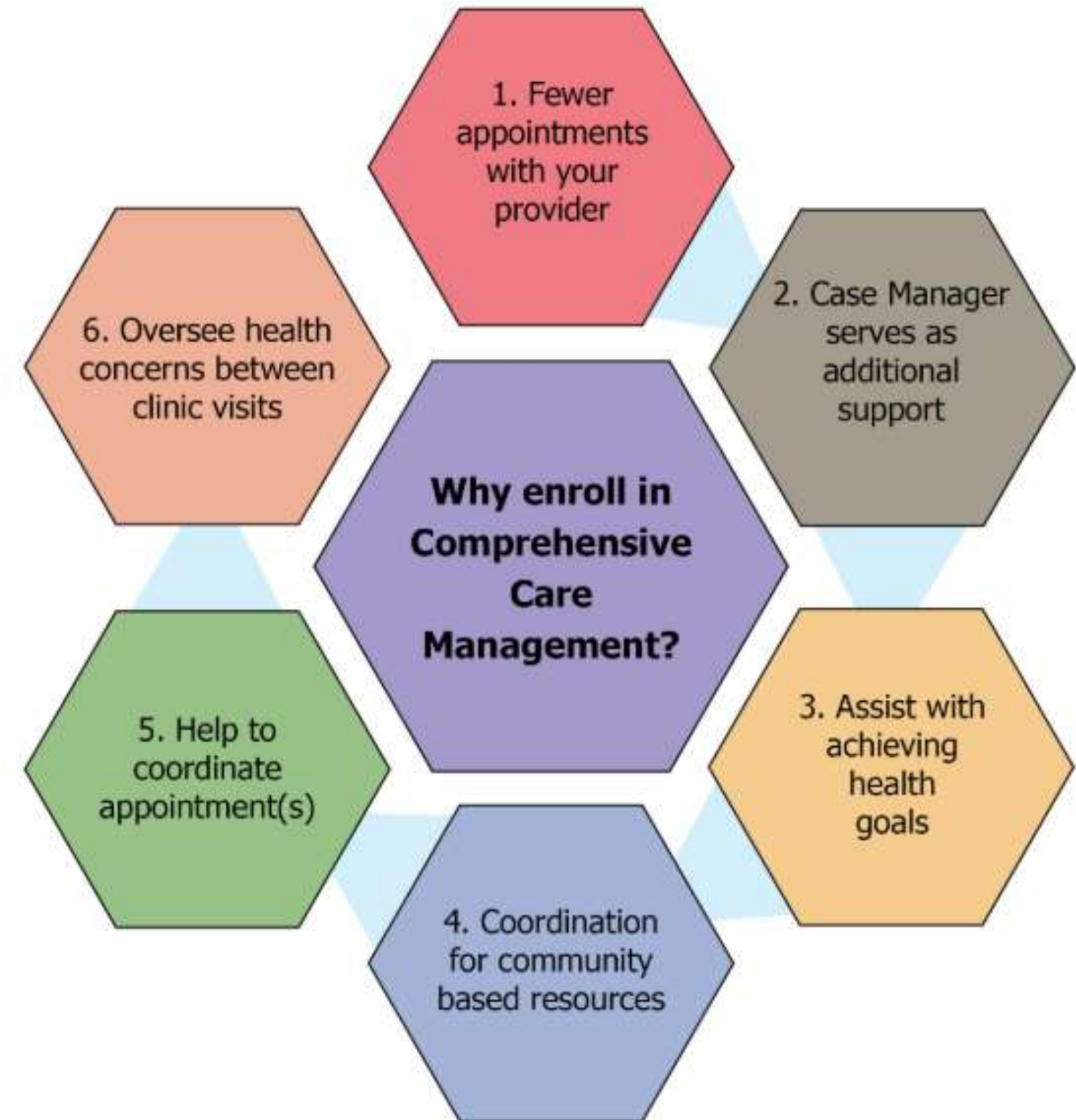
CARE MODELS FOR CLD: HOUSE OF CARE MODEL

- House of Care model is focused on partnership between patient and multidisciplinary care team based on the long-term management of the condition in a patient-centred approach (Coulter et al., 2016).
- Some important features are: collaborative care planning, self-management support, continuity between primary and secondary care, coordinated services (Murtagh et al., 2021).
- In the case of CLD, this model is beneficial in terms of routine surveillance, lifestyle education, early prevention – to prevent the development and hospitalization.
- Promotes patient empowerment to lead healthier lifestyle, comply with treatment and screening regimen – imperative in chronic illnesses such as CLD.



INTEGRATED CARE : COMPREHENSIVE CARE MODEL FOR CLD

- CLD Comprehensive Care model means multidisciplinary approach: hepatologists, dieticians, primary care physicians, social care, mental health, patient education (James and Liou, 2015).
- Cover prevention, early diagnosis, complications management, and rehabilitation, and long-term follow-up.
- Received especially successfully in complex CLD patients (several risk factors, comorbidities, advanced disease) - provides care that is holistic.
- This, together with House of Care model, provides the health care system with solid framework to minimize morbidity, mortality, and social/economic burden of CLD.



Six components of the comprehensive model of personalised care

1. Shared decision-making

- Patients and professionals work together to choose the best care options.

2. Personalised care & support planning

- Care plans are created based on the patient's goals, needs, and preferences.

3. Supported self-management

- Patients are helped to confidently manage their condition in daily life.

4. Social prescribing & community support

- Patients are connected to community services that improve their wellbeing.

5. Personal health budgets

- Patients can use allocated NHS funds to choose personalised care services.

6. Enabling choice

- Patients are given real options about where, how, and by whom their care is delivered.



CONCLUSION

- CLD is a significant health problem in the world as it has an estimated 1.7 billion individuals and a death rate of 1.4 billion deaths per year (Cheemerla and Balakrishnan, 2021).
- The rate of deaths caused by liver diseases in the UK is over 11,000 per year; the number of deaths has risen by approximately 400 percent since 1970 (DHANJAL, 2022).
- Examples include risk factors, some modifiable (alcohol, diet, lifestyle), and non-modifiable (age, sex, genetics, ethnicity) – can be prevented. Early diagnosis and risk factors management and integrated care (House of Care + Comprehensive Care) play a crucial role.
- Healthcare system preparedness, patient education, and public health action were required to decrease future burden of CLD (Pryke and Guha, 2023).

REFERENCES

A. Altová, I. Kulhánová, Reisser, K., P. Netrdová, J. Brož, T.A. Eikemo, Balaj, M. and M. Lustigová (2024). Educational inequalities in cervical cancer screening participation in 24 European countries. *Public health*, 233, pp.1–7. doi:<https://doi.org/10.1016/j.puhe.2024.04.036>.

ArcHealthCare.UK (2019). The alarming impact of liver disease in the UK. [online] Available at: <https://archhealthcare.uk/wp-content/uploads/2023/10/The-alarming-impact-of-liver-disease-FINAL-June-2019.pdf?> [Accessed 8 Dec. 2025].

Berger, D. (2023). Medical complications: Common alcohol-related concerns. [online] www.niaaa.nih.gov. Available at: <https://www.niaaa.nih.gov/health-professionals-communities/core-resource-on-alcohol/medical-complications-common-alcohol-related-concerns>.

British Liver Trust (2025). Liver disease in numbers – key facts and statistics. [online] British Liver Trust. Available at: <https://britishlivertrust.org.uk/information-and-support/statistics/?>.

Cheemerla, S. and Balakrishnan, M. (2021). Global Epidemiology of Chronic Liver Disease. *Clinical Liver Disease*, 17(5), pp.365–370. doi:<https://doi.org/10.1002/cld.1061>.

Conners, E.E., Panagiotakopoulos, L., Hofmeister, M.G., Spradling, P.R., Hagan, L.M., Harris, A.M., Rogers–Brown, J.S., Wester, C., Nelson, N.P., Rapposelli, K., Sandul, A.L., Choi, E., Coffin, C., Marks, K., Thomas, D.L. and Wang, S.H. (2023). Screening and Testing for Hepatitis B Virus Infection: CDC Recommendations — United States, 2023. *MMWR. Recommendations and Reports*, 72(1), pp.1–25. doi:<https://doi.org/10.15585/mmwr.rr7201a1>.

Coulter, A., Kramer, G., Warren, T. and Salisbury, C. (2016). Building the House of Care for People with long-term conditions: the Foundation of the House of Care Framework. *British Journal of General Practice*, [online] 66(645), pp.288–290. doi:<https://doi.org/10.3399/bjgp16x684745>.

Devarbhavi, H., Asrani, S.K., Arab, J.P., Nartey, Y.A., Pose, E. and Kamath, P.S. (2023). Global Burden of Liver Disease: 2023 Update. *Journal of Hepatology*, [online] 79(2). doi:<https://doi.org/10.1016/j.jhep.2023.03.017>.

DHANJAL, A. (2022). EASL declares ongoing commitment to fighting hepatitis. [online] EASL–The Home of Hepatology. Available at: <https://easl.eu/news/liver-disease-uk-deaths-soar-by-400-since-1970/>.

Duo, H., You, J., Du, S., Yu, M., Wu, S., Yue, P., Cui, X., Huang, Y., Luo, J., Pan, H. and Ye, Q. (2025). Liver cirrhosis in 2021: Global Burden of Disease study. *PubMed*, 20(7), pp.e0328493–e0328493. doi:<https://doi.org/10.1371/journal.pone.0328493>.

GOV.UK (2024). Liver disease profile, December 2024 update. [online] GOV.UK. Available at: <https://www.gov.uk/government/statistics/liver-disease-profile-december-2024-update/liver-disease-profile-december-2024-update?> [Accessed 8 Dec. 2025].

Ginès, P., Castera, L., Lammert, F., Graupera, I., Serra-Burriel, M., Allen, A.M., Wong, V.W., Hartmann, P., Thiele, M., Caballeria, L., Knegt, R.J., Grgurevic, I., Augustin, S., Tsochatzis, E.A., Schattenberg, J.M., Guha, I.N., Martini, A., Morillas, R.M., Garcia-Retortillo, M. and Koning, H.J. (2021). Population screening for liver fibrosis: Toward early diagnosis and intervention for chronic liver diseases. *Hepatology*, 75(1), pp.219–228. doi:<https://doi.org/10.1002/hep.32163>.

Guo, Z., Wu, D., Mao, R., Yao, Z., Wu, Q. and Wenliang Lv (2025). Global burden of MAFLD, MAFLD related cirrhosis and MASH related liver cancer from 1990 to 2021. *Scientific Reports*, [online] 15(1). doi:<https://doi.org/10.1038/s41598-025-91312-5>.

Hadefi, A., Arvanitakis, M., Trépo, E. and Zelber-Sagi, S. (2023). Dietary strategies in non-alcoholic fatty liver disease patients: From evidence to daily clinical practice, a systematic review. *United European gastroenterology journal*. doi:<https://doi.org/10.1002/ueg2.12443>.

James, J. and Liou, I.W. (2015). Comprehensive Care of Patients with Chronic Liver Disease. *Medical Clinics of North America*, 99(5), pp.913–933. doi:<https://doi.org/10.1016/j.mcna.2015.05.001>.

Jimmy Che–To Lai, Lilian Yan Liang and Grace Lai–Hung Wong (2023). Noninvasive tests for liver fibrosis in 2024: are there different scales for different diseases? *Gastroenterology report*, 12. doi:<https://doi.org/10.1093/gastro/goae024>.

Linden–Torres, E., Zambrano–Galván, G., Sahebkar, A., Ríos–Mier, M. and Simental–Mendía, L.E. (2022). Coffee consumption has no effect on circulating markers of liver function but increases adiponectin concentrations: A systematic review and meta-analysis of randomized controlled trials. *Nutrition Research*, 106, pp.24–34. doi:<https://doi.org/10.1016/j.nutres.2022.07.010>.

Linzay, C.D., Sharma, B. and Pandit, S. (2021). Autoimmune Hepatitis. [online] *PubMed*. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK459186/>.

Luo, X., He, Y., Jiang, Z. and Liao, J. (2025). Global burden of liver cirrhosis: trends from 1990–2021 and projections to 2060. *Journal of Health, Population and Nutrition*, 44(1). doi:<https://doi.org/10.1186/s41043-025-01109-5>.

Mayo Clinic (2023). Cirrhosis – diagnosis and treatment – mayo clinic. [online] [Mayoclinic.org](https://www.mayoclinic.org). Available at: <https://www.mayoclinic.org/diseases-conditions/cirrhosis/diagnosis-treatment/drc-20351492>.

Murtagh, S., McCombe, G., Broughan, J., Carroll, Á., Casey, M., Harrold, Á., Dennehy, T., Fawsitt, R. and Cullen, W. (2021). Integrating Primary and Secondary Care to Enhance Chronic Disease Management: a Scoping Review. *International Journal of Integrated Care*, [online] 21(1). doi:<https://doi.org/10.5334/ijic.5508>.

Newton, J.N., Briggs, A.D.M., Murray, C.J.L., Dicker, D., Foreman, K.J., Wang, H., Naghavi, M., Forouzanfar, M.H., Ohno, S.L., Barber, R.M., Vos, T., Stanaway, J.D., Schmidt, J.C., Hughes, A.J., Fay, D.F.J., Ecob, R., Gresser, C., McKee, M., Rutter, H. and Abubakar, I. (2015). Changes in health in England, with analysis by English regions and areas of deprivation, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*, [online] 386(10010), pp.2257–2274. doi:[https://doi.org/10.1016/s0140-6736\(15\)00195-6](https://doi.org/10.1016/s0140-6736(15)00195-6).

Pryke, R. and Guha, I.N. (2023). Time to focus on chronic liver diseases in the community: A review of primary care hepatology tools, pathways of care and reimbursement mechanisms. *Journal of Hepatology*, [online] 78(3), pp.663–671. doi:<https://doi.org/10.1016/j.jhep.2022.10.010>.

Raphael, M.J., Wildgoose, P., Brenner, D., Brezden–Masley, C., Burkes, R., Grant, R.C., Pettit, A., Macaulay, C., D’Angelo, M.S. and Servidio–Italiano, F. (2025). Prioritizing the Timely Detection and Diagnosis of Early–Age Onset Cancer to Enable Optimal Disease Management and Outcomes. *Current Oncology*, 32(7), pp.396–396. doi:<https://doi.org/10.3390/curroncol32070396>.

Ratnapradipa, K.L., Jadhav, S., Kabayundo, J., Wang, H. and Smith, L.C. (2023). Factors associated with delaying medical care: cross-sectional study of Nebraska adults. *BMC Health Services Research*, [online] 23(1), pp.1–10. doi:<https://doi.org/10.1186/s12913-023-09140-0>.

Sharma, A. and Nagalli, S. (2023). Chronic Liver Disease. [online] *PubMed*. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK554597/>.

Tapper, E.B. and Parikh, N.D. (2023). Diagnosis and Management of Cirrhosis and Its Complications: A Review. *JAMA*, [online] 329(18), pp.1589–1602. doi:<https://doi.org/10.1001/jama.2023.5997>.

Tholey, D. (2019). Jaundice in Adults. [online] MSD Manual Consumer Version. Available at: <https://www.msdmanuals.com/home/liver-and-gallbladder-disorders/manifestations-of-liver-disease/jaundice-in-adults>.

Ufere, N.N., Satapathy, N., Philpotts, L., Lai, J.C. and Serper, M. (2022). Financial burden in adults with chronic liver disease: A scoping review. *Liver Transplantation*, 28(12), pp.1920–1935. doi:<https://doi.org/10.1002/lt.26514>.

Zhang, Y., Luo, M. and Ming, Y. (2025). Global burden of cirrhosis and other chronic liver diseases caused by specific etiologies from 1990 to 2021. *BMC Gastroenterology*, 25(1). doi:<https://doi.org/10.1186/s12876-025-04264-5>.

OUR CONTACT

THANK YOU AND STAY HEALTHY

