

***Module: Introduction to Physiology
Assessment 1***

***Topic: Life style related diseases
Alcohol-related liver disease***

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Alcohol-related liver disease (ARLD) description

- *Life-style related disease depends on person's behaviours and drinking habits*
- *Refers to liver damage related to excess alcohol intake*
- *There are three stages of the disease*
- *Can be prevented by abstinence and reversed in early stage*
- *Develops over many years*

(Alcohol-related liver disease (ARLD), 2022).



Alcohol related liver disease (ARLD) is caused by unconscionable drinking. This disease is life style related, common thus preventable.

ARLD has got three stages:

1. Excess fat builds in the liver – Fatty liver
 2. Inflammation of the liver cells – Alcoholic Hepatitis
 3. Living liver tissue is replaced by non living scar tissue - Alcohol related cirrhosis
- Disease can be reversed during early stage if the person stops taking alcohol. The only cure for this disease is abstinence.

All heavy drinkers suffer from a fatty liver, 35% develop hepatitis and 10-20% develop cirrhosis which is not reversable and causes liver failure.

“Healthy lives, healthy people- Strategy for Public Health in England (2010)

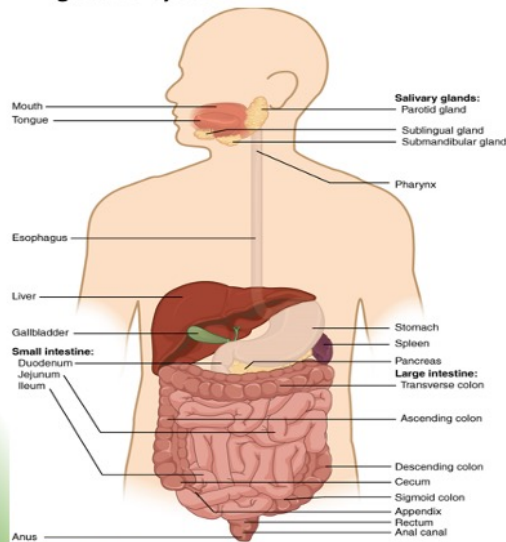
- *Caring for population general wellbeing*
- *Modifying adults behaviour leads to reduce illness and early death*
- *Major public health problem*
- *Alcohol abuse cost the NHS £2.7 billion yearly*

(HM Government, 2010)

Why is lifestyle related information important for health and social care?
Prevention and modifying people’s behavior and habits leads to healthy population, and also cuts the cost of NHS interventions and mortality among UK adults.

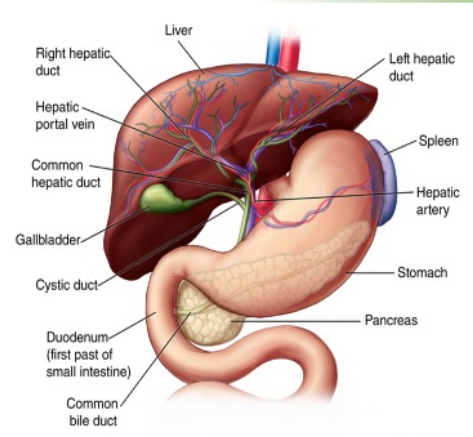
Anatomy and Physiology

Digestive system



(Lumenlearning.com,2008)

Human liver



(Liver: Anatomy and Functions, 2022)

Liver is located in the right upper abdomen and consist four lobes: bigger right lobe, smaller left, also quadrate lobe and caudate lobe which are not always mentioned. Weight between 3-3.5 pounds. Reddish-brown with a rubbery texture. Biggest organ inside of the human body and also versatile and highly important.

The structure of the liver:

Lobes (right and left) – the liver anatomical parts

Lobules – small parts building the liver (around 100,000)

Common Hepatic (Bile) Duct (right and left) –transports bile out of the liver

Falciform (Round) Ligament – separates the lobes of the liver

Glisson's Capsule – connective tissue around the liver and linked arteries and ducts

Hepatic Artery – the main blood vessel which delivers oxygenated blood to the liver

Hepatic Portal Vein – transports blood from the gastrointestinal tract, gallbladder, pancreas, and spleen to the liver

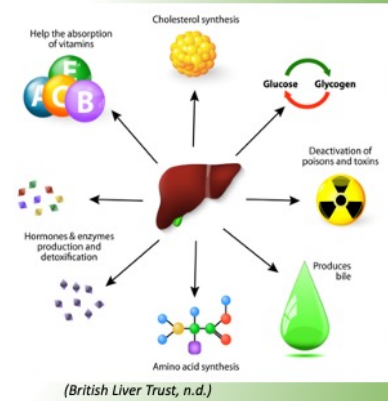
Peritoneum – membrane which covers the liver

Complexity of the liver

- *filtering toxins*
- *aiding digestion by producing bile*
- *helping fight infections*
- *regulating blood sugar and cholesterol level* (NHSinform.scot,2019)

Alcohol-related liver disease

- *Ethanol damages liver cells*
- *Inflammation of liver tissue*
- *Misuse inhibits liver regeneration*
- *Repeating the process over years results in serious and permanent damage* (NHS,2017)



The liver is a very complex organ which carries a lot of functions. it is responsible for filtering toxins in humans body. Years of regular alcohol misuse cause the liver to be inflamed and swollen. With time, it causes scarring of the tissue, as cells die and regeneration is impossible. This may lead to liver failure, which can be fatal.

The liver also absorbs nutrients, processing digested food, controlling levels of fats, storing iron and vitamins, turning food into energy, making enzymes and proteins involved in blood clotting and repairing damaged tissues and many more. There's around 400 known functions of this important body part (Columbia Surgery, 2019).

Lifestyle Questionnaire:

- *Name could suggest gender*
- *Date of birth*
- *History of Smoking*
- *Alcohol intake*
- *Family history of lifestyle related disease*
- *Medical history*
- *Ethnic Group*
- *Type of employment*
- *Activity level (walking pace)*

(moodle.uwtsd.ac.uk,n.d.)



The questionnaire allows us to screen the patients for the risk of common life style related diseases. The questions allow us to relate the patient habits and lifestyle to long term prognosis. The purpose of the check is to prevent the future diseases which could lead to serious illness, disability or early death.

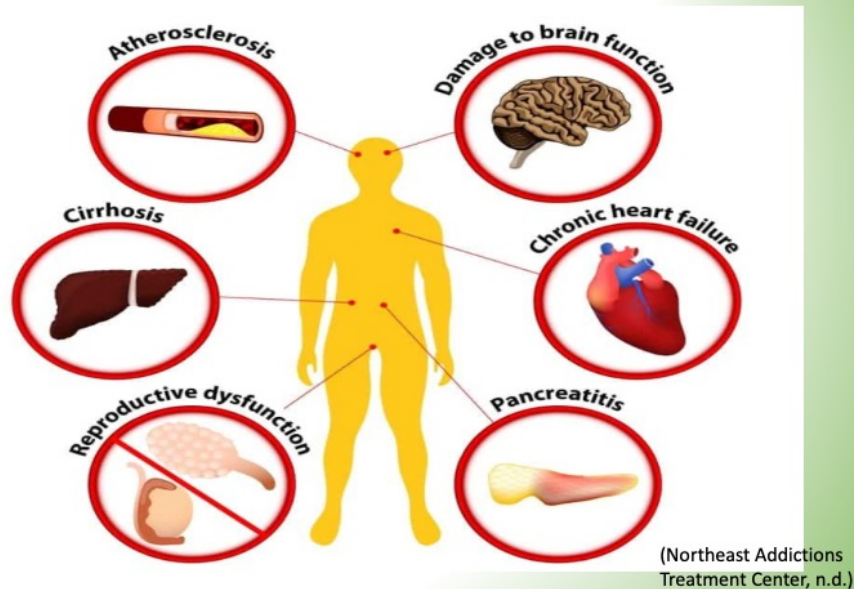
Lifestyle health-related information of the patient

- *Patient A*
- *43 years old*
- *Male*
- *Smoker 20 cigarettes/day for the past 25 years*
- *Drinking heavily one bottle of spirit a day, a few bottles of beer,*
- *No history of heart disease before the age of 60 in the family*
- *No history of angina, heart attack or stroke*
- *White other (European - Polish)*
- *Construction worker (added self employed, work irregular)*
- *No physical activity*
- *Slow pace walking*



Patient A has a history of overdrinking for the past few years, known to the GP, who is concerned and many times suggested him to cut down. The irregular job doesn't help, as when he doesn't work, he drinks all day.

Health risks of alcohol misuse



Alcohol misuse affects many body systems, however following the questionnaire for a patient without a family history of heart disease, the most common would be liver damage. The damage of liver tissue can lead to liver failure and be fatal. Alcohol is a toxin and the liver must flush it out of the body, however with too much drinking in a short period of time the liver cannot keep up. Alcohol kills liver cells and the liver can't function properly. This leads to fatty liver, hepatitis and cirrhosis.

There are also other digestive problems like stomach inflammation, digestive problems, and problems with vitamin and nutrient absorbance. The building up of digestive enzymes in the pancreas leads to pancreatitis and increases the risk of diabetes.

Other health risks are heart disease, risk of blood clots and high cholesterol.

The brain and nervous system can also be affected, as alcohol affects brain communication pathways, and has a negative effect on speech, memory, and body movement.

Mental health can be also affected, as drinking triggers depression (Slivinski, 2019)

Suggestions for future care

NHS Alcohol Support

- *Change of lifestyle*
- *Help with alcohol dependency*
- *Psychological therapy*
- *Social prescribing service*
- *Balanced diet*
- *Medication, hospital admission*

(NHS, 2019)



British Liver Trust

- *Nurse led helpline and online forum*
- *Support groups*
- *Practical support*
- *Promoting a healthy lifestyle*

(British Liver Trust, n.d.)



Patients with overdrinking problems can seek help from many government and private organizations and charities. They are based on supporting individuals to stop drinking, to avoid serious problems in the future and minimize the risk of serious diseases.

NHS primary care gives advice and uses medical treatment, however there are psychological therapies (CBT) available free of charge which can help with alcohol dependency. Also, social prescribing services are supporting Patients by connecting them to groups available within the area of living. The most known groups are Alcoholics Anonymous (AA), which support during group meetings, We Are With You which supports whole families or SMART Recovery which helps individuals to recognize the problem and slowly support their recovery (NHS, 2019).

British Liver Trust is the biggest UK liver charity for adults with liver disease. The support is offered not only to the patient but also to the family affected by the condition. All services are confidential. The charity also offers support groups, where patients can speak to one another and share experiences, and with practical issues like employment, money and travel. They also signpost to other services offering different kinds of support related to alcohol misuse problems like: Abbeycare – residential alcohol treatment, Action on Addiction - charity which offers effective

rehab, AA and many more (British Liver Trust, n.d.)

Conclusion

- *Alcohol-related liver disease can be prevented and reverted at early stage*
- *It requires a change of behaviour and lifestyle*
- *When not treated, it can lead to serious disease or be fatal*
- *There are many organisations within the UK offering help for people with alcohol problems leading to liver disease*

Alcoholic Liver Disease is the most common chronic liver disease worldwide. This disease can be prevented by reducing alcohol intake. Without lifestyle changes, it is usually fatal. There's no treatment available for alcoholic patients, as liver transplantation is sometimes the only option, which is not possible for patients who cannot or are unwilling to change their drinking habits. New therapies are urgently needed (Seitz et al., 2018).

References

- British Liver Trust. 2022. *Alcohol-related liver disease (ARLD)*. [online] Available at: <<https://britishlivertrust.org.uk/information-and-support/living-with-a-liver-condition/liver-conditions/alcohol/>> [Accessed 30 March 2022].
- British Liver Trust. (n.d.). *About the liver*. [online] Available at: <https://britishlivertrust.org.uk/information-and-support/liver-health-2/abouttheliver/>.
- British Liver Trust. (n.d.). *Useful links*. [online] Available at: <https://britishlivertrust.org.uk/information-and-support/living-with-a-liver-condition/living-with-liver-disease/useful-links/> [Accessed 30 Mar. 2022].
- Columbia Surgery (2019). *The Liver and its Functions | Columbia University Department of Surgery*. [online] Columbiasurgery.org. Available at: <https://columbiasurgery.org/liver/liver-and-its-functions>.
- HM Government (2010). *Healthy Lives, Healthy People: Our strategy for public health in England*. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/216096/dh_127424.pdf.
- Lumenlearning.com. (2008). *Overview of the Digestive System | Anatomy and Physiology II*. [online] Available at: <https://courses.lumenlearning.com/ap2/chapter/overview-of-the-digestive-system/>.
- moodle.uwtsd.ac.uk. (n.d.). *UWTSd Moodle 2021/22: Log in to the site*. [online] Available at: <https://moodle.uwtsd.ac.uk/course/view.php?id=7775> [Accessed 30 Mar. 2022].

- NHS (2019). *Treatment - Alcohol misuse*. [online] NHS. Available at: <https://www.nhs.uk/conditions/alcohol-misuse/treatment/>.
- nhs.uk. 2022. *Alcohol-related liver disease*. [online] Available at: <<https://www.nhs.uk/conditions/alcohol-related-liver-disease-arld/>> [Accessed 30 March 2022].
- NHS (2017). *Alcohol-related liver disease*. [online] nhs.uk. Available at: <https://www.nhs.uk/conditions/alcohol-related-liver-disease-arld/#:~:text=Each%20time%20your%20liver%20filters>
- Nhsinform.scot. (2019). *Alcohol-related liver disease*. [online] Available at: <https://www.nhsinform.scot/illnesses-and-conditions/stomach-liver-and-gastrointestinal-tract/alcohol-related-liver-disease>.
- Northeast Addictions Treatment Center. (n.d.). *Top 7 Life Consequences of Alcohol Abuse | What You Should Know*. [online] Available at: <https://neaddictions.com/addiction/alcohol/abuse-life-effects/>.
- Seitz, H.K., Bataller, R., Cortez-Pinto, H., Gao, B., Gual, A., Lackner, C., Mathurin, P., Mueller, S., Szabo, G. and Tsukamoto, H. (2018). Alcoholic liver disease. *Nature Reviews Disease Primers*, 4(1).
- Slivinski, N. (2019). *Health Risks of Chronic Heavy Drinking*. [online] WebMD. Available at: <https://www.webmd.com/mental-health/addiction/addiction-heavy-drinking>.
- Wedro, B. (2019). *Liver Disease*. [online] MedicineNet. Available at: https://www.medicinenet.com/liver_disease/article.htm.