

Alcoholic Liver disease

- How does it occur?

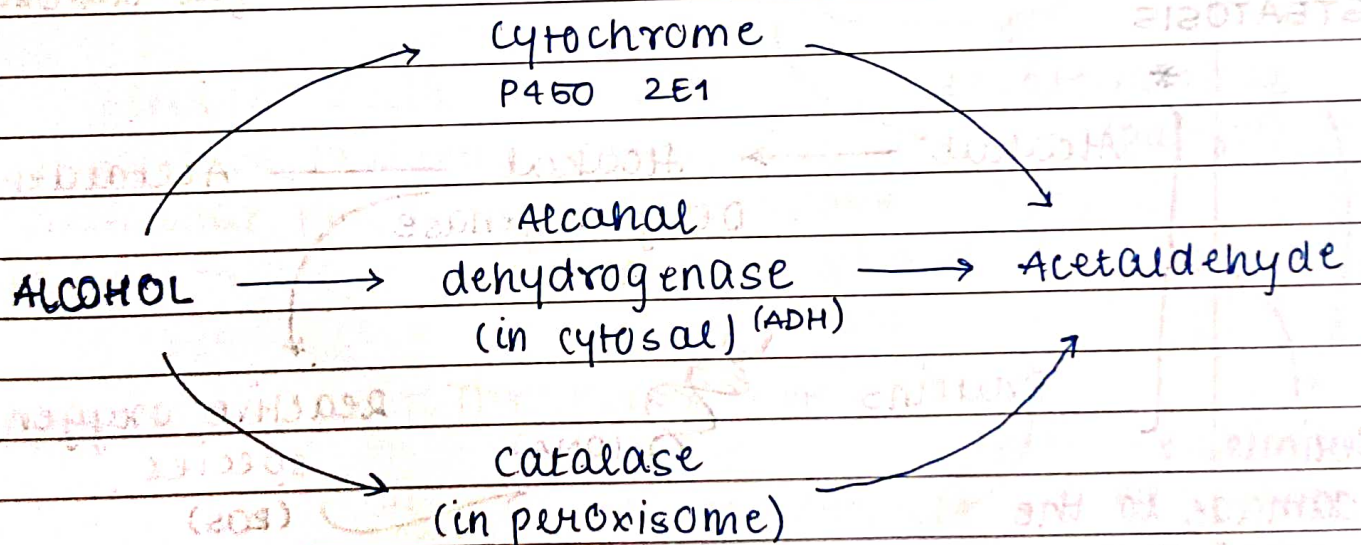
When you consume alcohol, most of it is sent to your liver for further processing

* very small amounts * \rightarrow **Relatively harmless**

* Excessive use * \rightarrow **serious liver problems**

leading cause of
liver disease
in the WEST

Once the alcohol enters the liver cells, it can take one of three pathways which include:



* Once the ADH enzyme is used to convert the alcohol, it needs another compound called NAD^+ which is then converted to NADH .

As NADH levels increase and NAD^+ decreases, it has two effects:

(1) High $\text{NADH} \rightarrow$ Make more fatty acids

(2) LOW NAD^+ \rightarrow less fatty acid oxidation

LOW NAD^+ HIGH NADH^+

\rightarrow Increased fat production in liver.

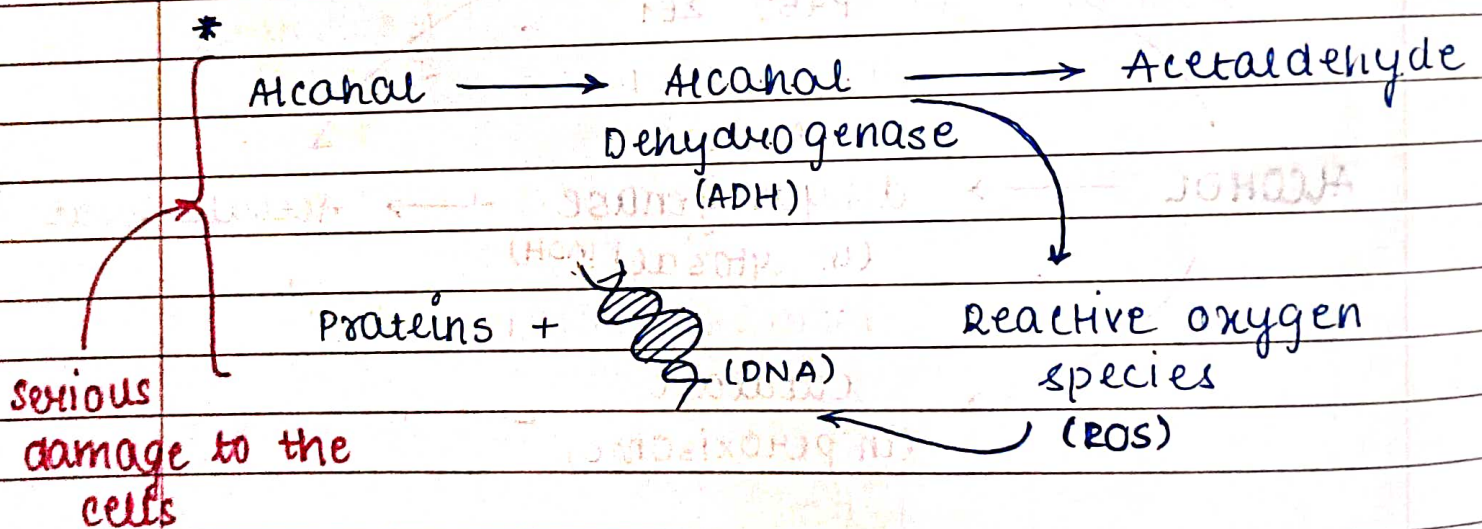
• Excessive fat in the liver is also called fatty change or fatty liver.

Fat build-up is also known as **STEATOSIS**

patients don't have symptoms except this

large ; heavy ; greasy ; tender.

yellowish liver (due to fat deposition)



Besides the reactive oxygen species, we also have acetaldehyde to worry about. It can bind to macromolecules and all sorts of other compounds inside the cell.

When they bind to any of these, they inhibit that molecule; and they form

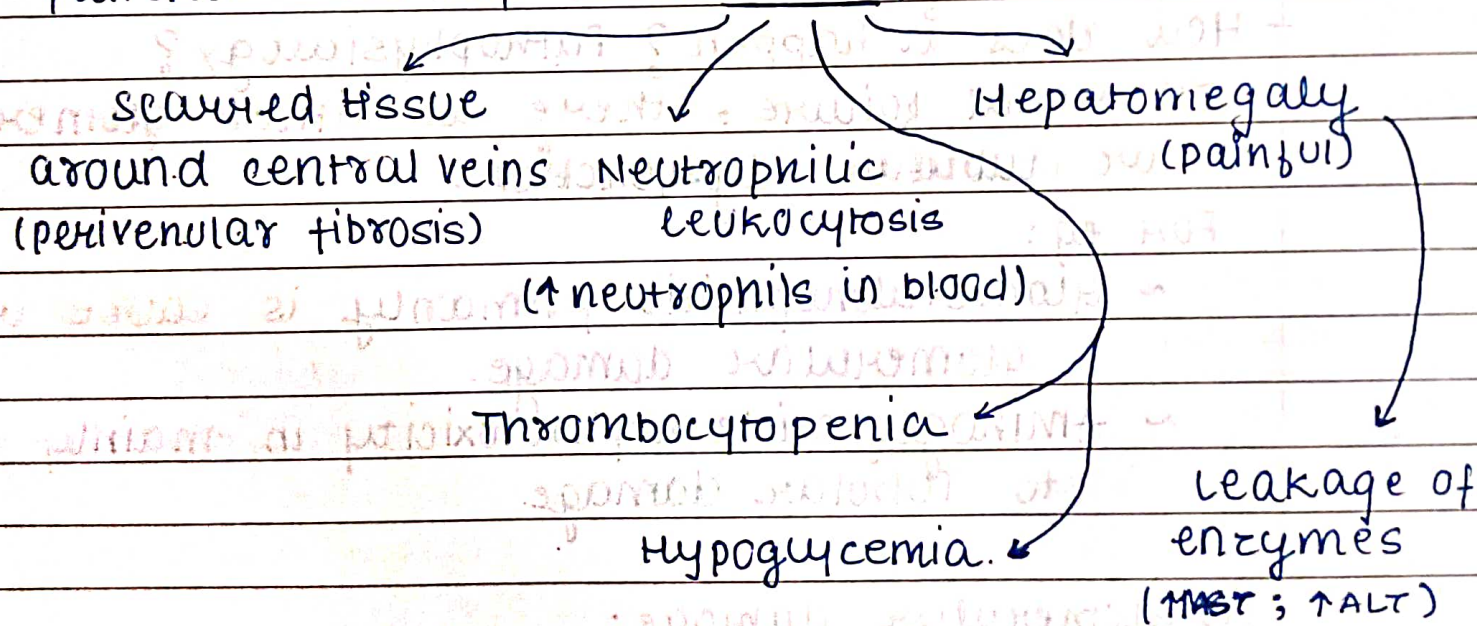
Acetaldehyde adducts. When these are formed, your immune system recognizes these adducts as foreign compounds and start sending neutrophils to clear up the damage.

Here, two things are happening:

(1) The adducts binding to macromolecules and disturbing the function of these molecules in the cell.

(2) Destruction of hepatocytes by neutrophilic infiltration.

As the cells become inflamed and damaged, patients develop alcoholic hepatitis.



TREATMENT:

- Complete cessation of alcohol
- In some cases, corticosteroids help suppress the immune system.
- If allowed to progress far enough, chronic alcohol-induced liver damage may lead to **CIRRHOSIS** and **LIVER FAILURE**.