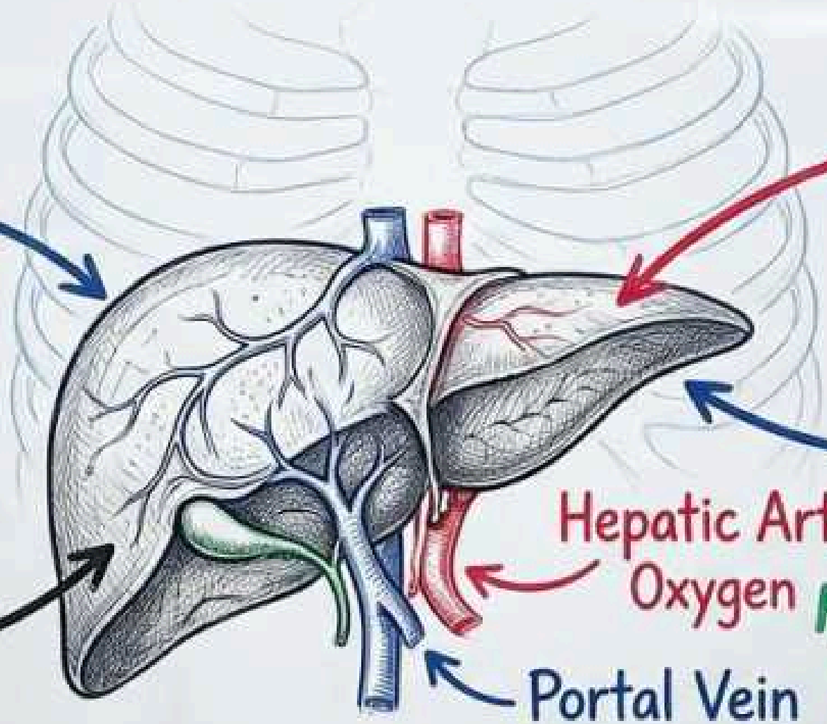
¶ 5.1

The Hepatic Hub: Anatomy & Function

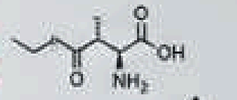
Metabolism:
Stores & releases glucose between meals.
Glucose ⟷ Glycogen

Synthesis:
Makes albumin & clotting factors.



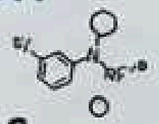


Lipids:
Processes fats & cholesterol.





Detoxification:
Breaks down drugs & toxins.

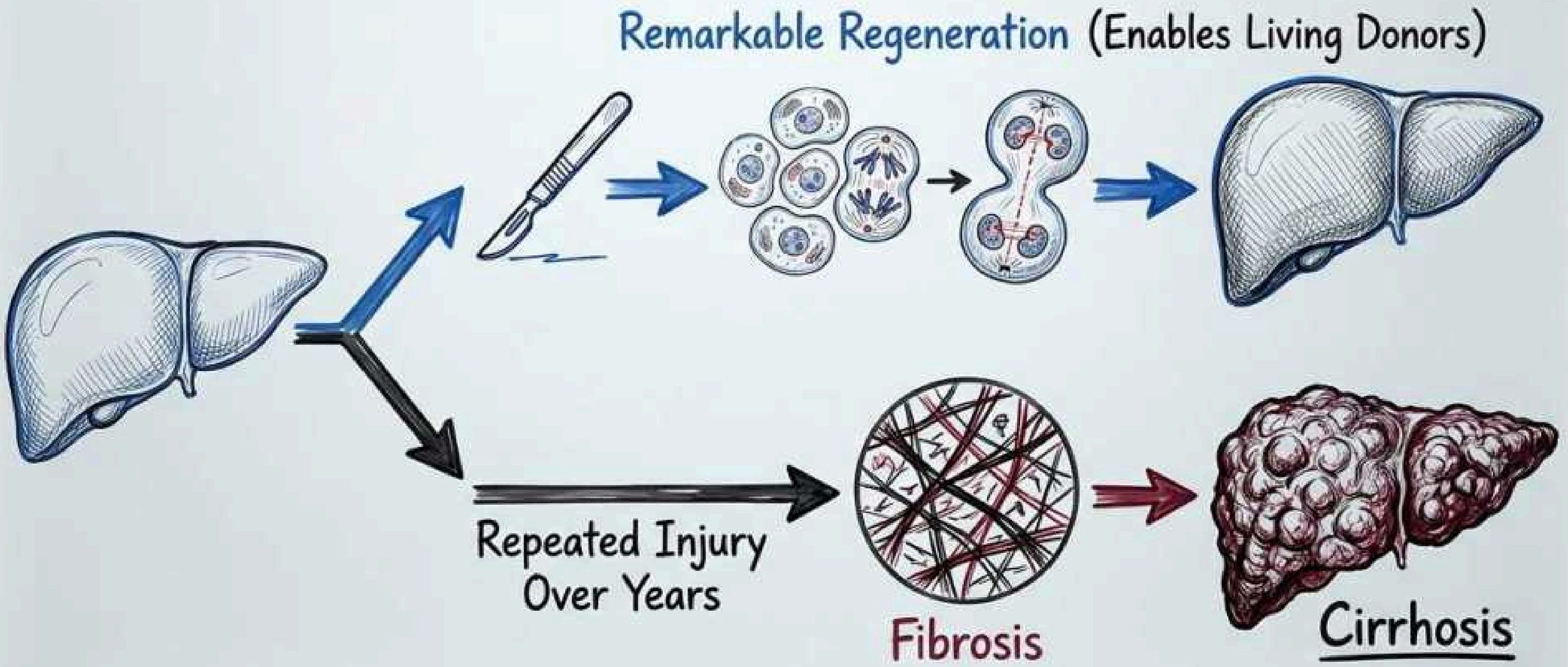


Digestion:
Produces bile to digest fat.

Gemini Notebook

The Balance: Regeneration vs. Scarring

¶ 5.2

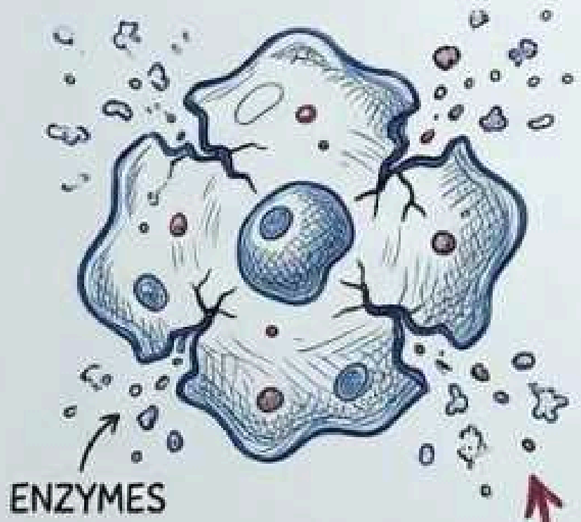


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Deciphering Liver Blood Tests

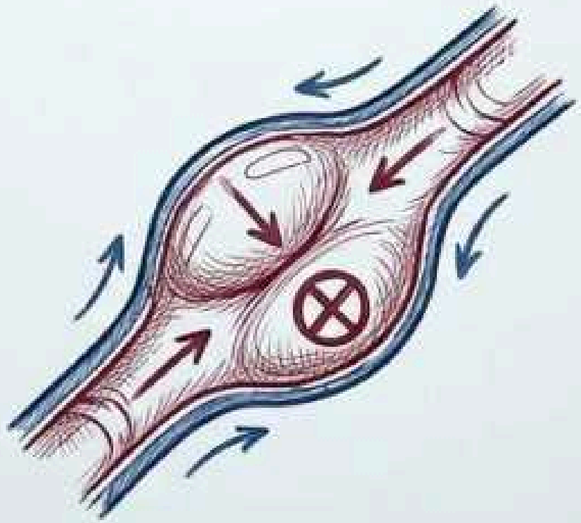
¶ 5.3

Hepatocellular Injury (Hepatitis)



ALT & AST

Cholestasis (Obstruction)



Alkaline Phosphatase (ALP)

True Liver Function

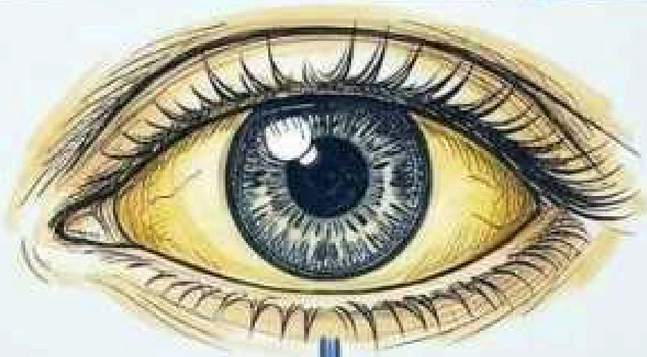


Albumin, Bilirubin, Clotting Time

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The Mechanics of Jaundice

¶ 5.4

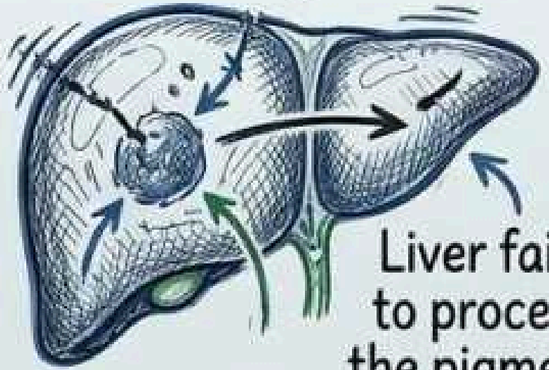


1. Pre-Hepatic
(Overproduction)



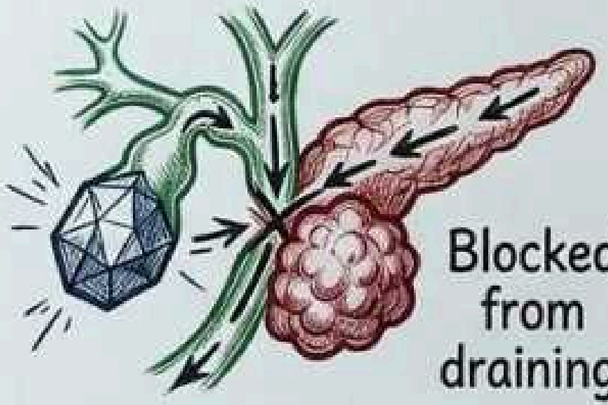
Releasing excess yellow pigment (Bilirubin).

2. Hepatic
(Processing Failure)



Liver fails to process the pigment.

3. Post-Hepatic
(Drainage Block)

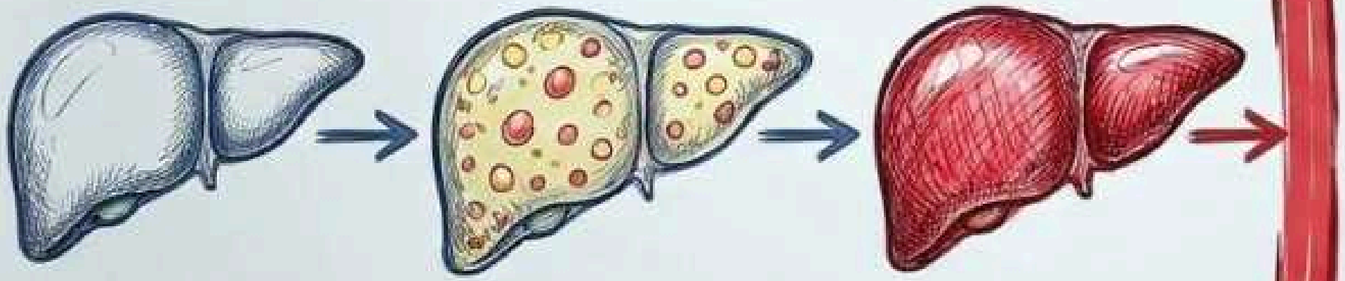


Blocked from draining.

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Alcohol-Related Liver Disease

¶ 5.5



Healthy Liver

Fatty Liver [Reversible]

Alcoholic Hepatitis (Severe & life-threatening)

Cirrhosis

ABSTINENCE:

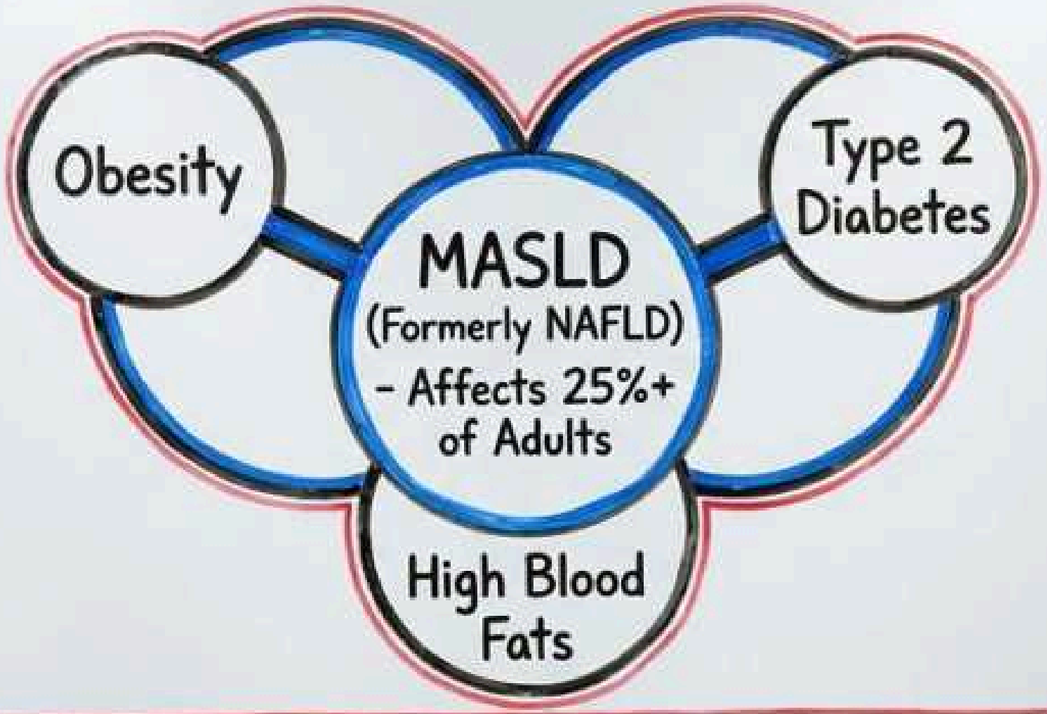
Stopping drinking is the most important treatment at every stage.

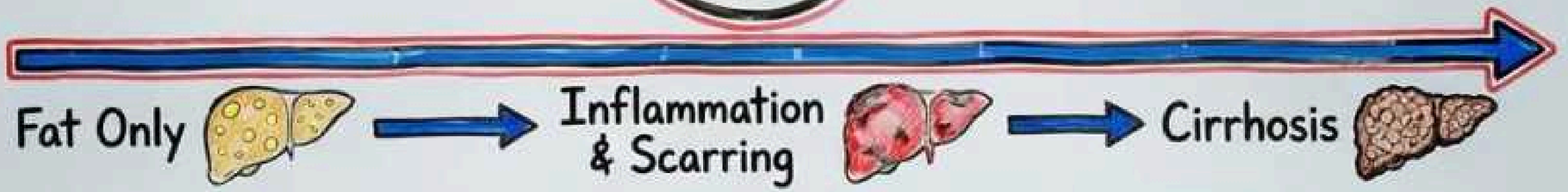
Crucial Clinical Integration:
Support for alcohol use disorder is a mandatory part of liver care.

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¶ 5.6

MASLD (Metabolic Dysfunction-Associated Steatotic Liver Disease)

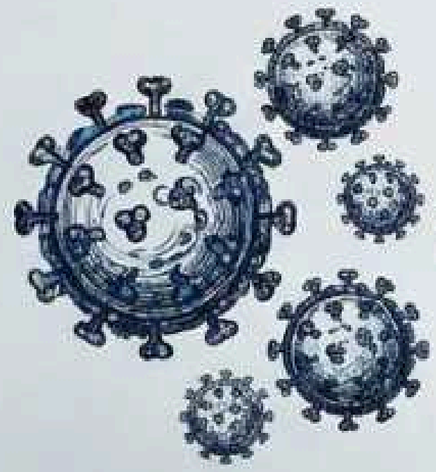




Primary Treatment = Weight Loss

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The Threat of Viral Hepatitis



Viral Particles
(e.g., HBV, HCV)

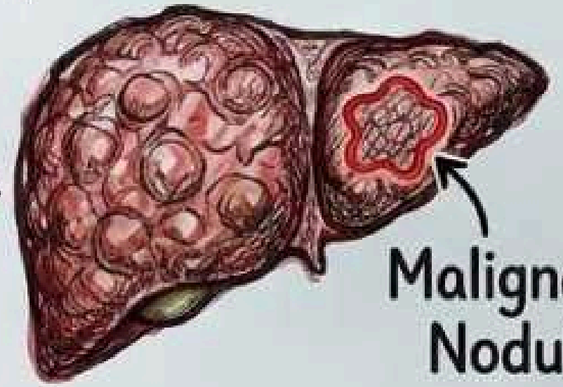
Short-Lived



Immune
Clearance

Decades (Often Asymptomatic)
- HBV & HCV

Cirrhosis & Liver Cancer
(Hepatocellular Carcinoma)



Malignant
Nodule

*Gary Anderson Policy (Med 512 B):
Discussed at general clinical level only

Gemini Notebook

The Clinical Response to Viruses

Prevention



Hepatitis A & B: Vaccines (HBV routine for infants globally).

Control



Hepatitis B: Chronic control via antiviral drugs.

Cure



Hepatitis C: Short courses of oral antivirals (Curing most since mid-2010s).

Goal: Eliminate viral hepatitis as a public health threat.

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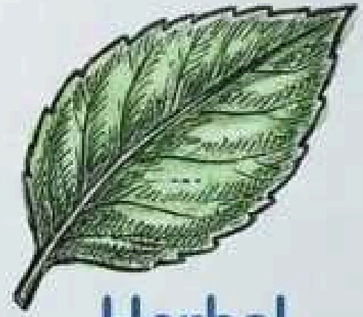
Drug-Induced Liver Injury (DILI)



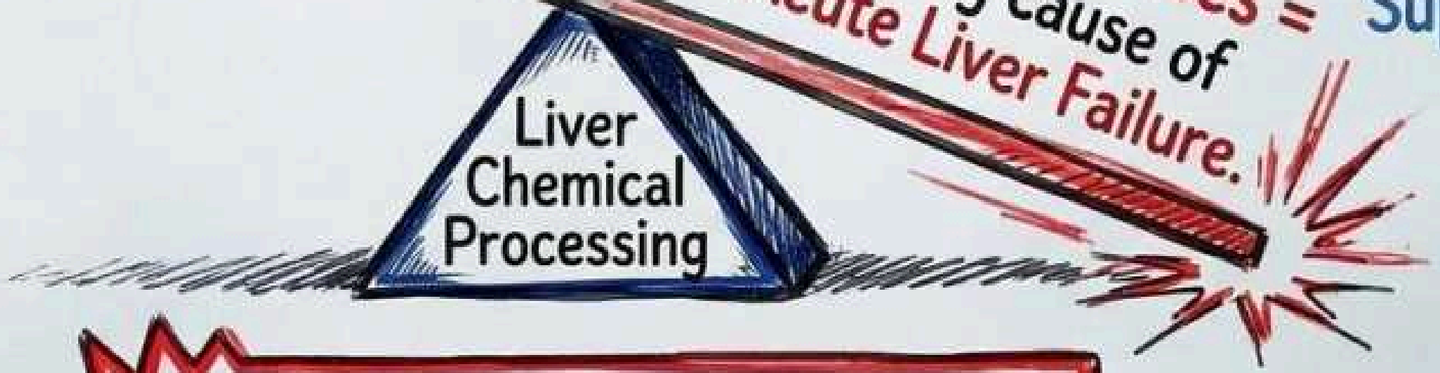
Paracetamol
(Acetaminophen)

Recommended Doses = Safe.

Exceeded Doses = Leading cause of Acute Liver Failure.



Herbal Supplements



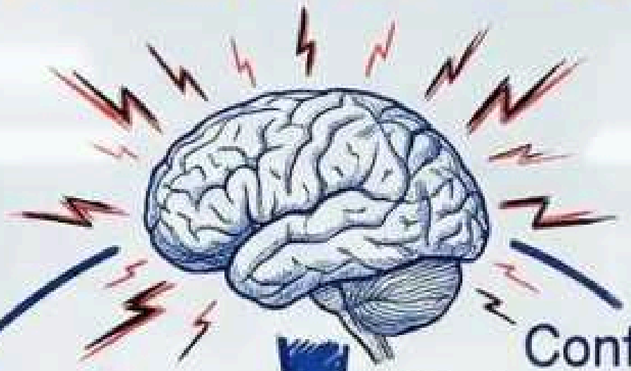
Suspected Overdose?
Seek medical help or contact a Poison Centre immediately.

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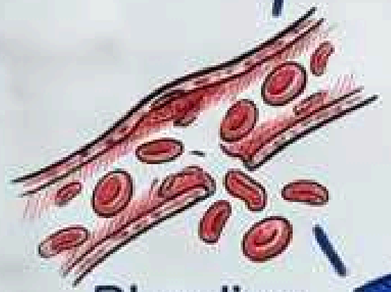
Acute Liver Failure

¶ 5.10

Triad of Failure

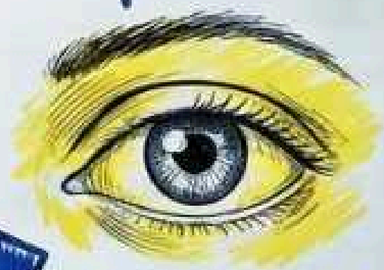


Confusion
(Toxins normally cleared reach the brain)



Bleeding
(Failure to make clotting factors)

Rapid Loss of Liver Function



Jaundice
(Bilirubin build-up)

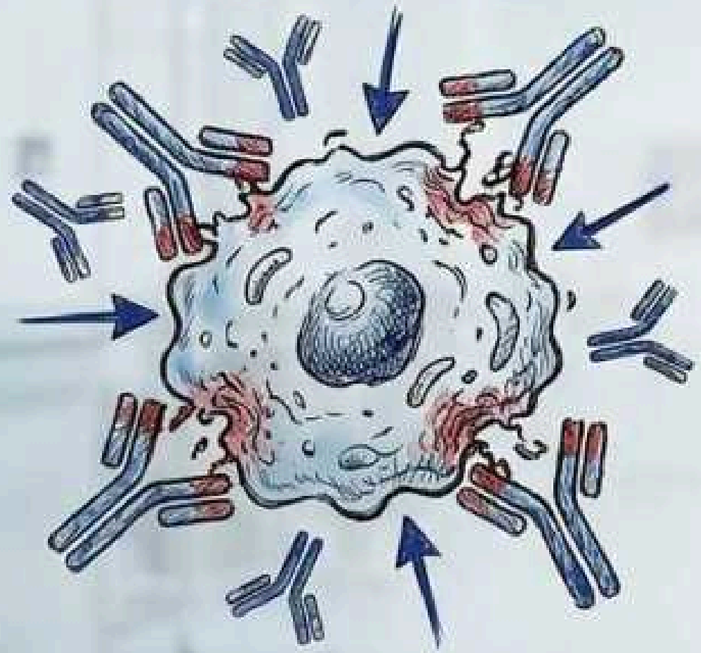
Rare but often fatal. Specialist care and Liver Transplantation can be lifesaving.

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¶ 5.11

Autoimmune & Inherited Conditions

Autoimmune Hepatitis



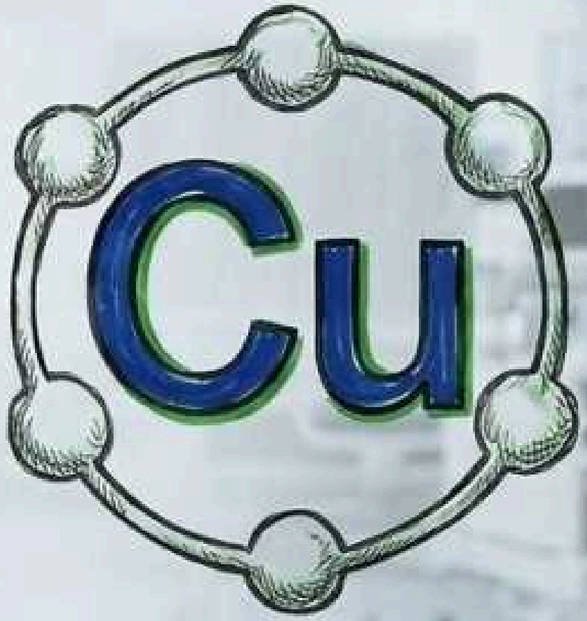
Immune system attacks own liver cells.

Haemochromatosis



Inherited excess absorption. Builds up in liver/organs. Treatment: Regular blood removal (Phlebotomy).

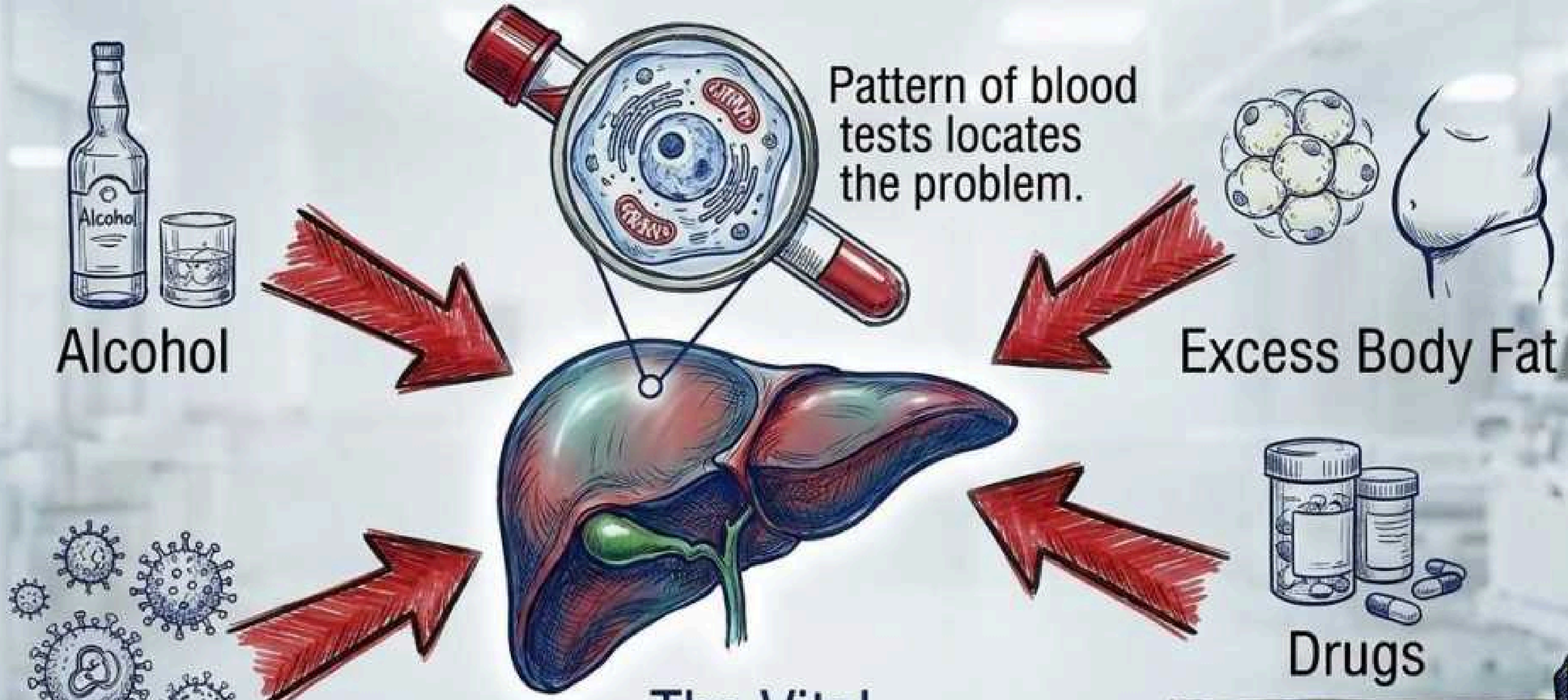
Wilson's Disease



Rarer inherited condition of copper accumulation.

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The Resilient Chemical Factory ¶ 5.12



Gemini Notebook