

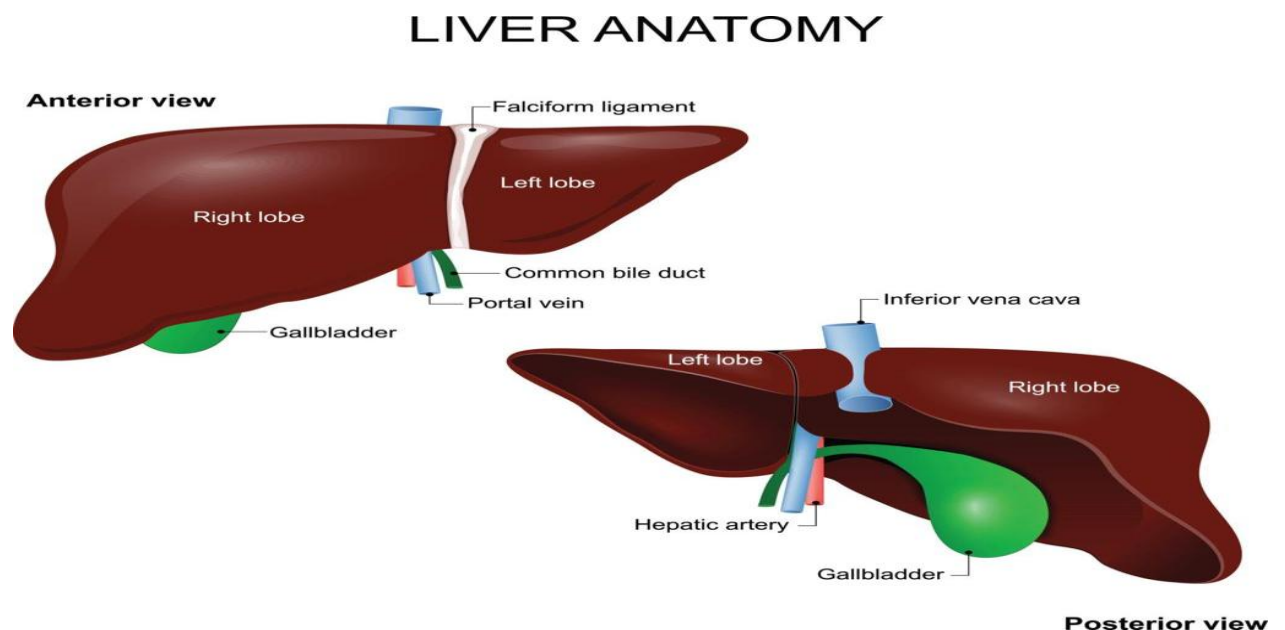
Lecture: Liver, Pancreas, Intestine,

1. The Liver

Structure and Location

The liver is the largest internal organ, located in the upper right abdomen. It is divided into lobes and made up of functional units called lobules.

The liver is a central metabolic organ that interacts with almost every system in the body. Because of its roles in metabolism, detoxification, and immune regulation, many **systemic diseases** directly or indirectly affect liver function.



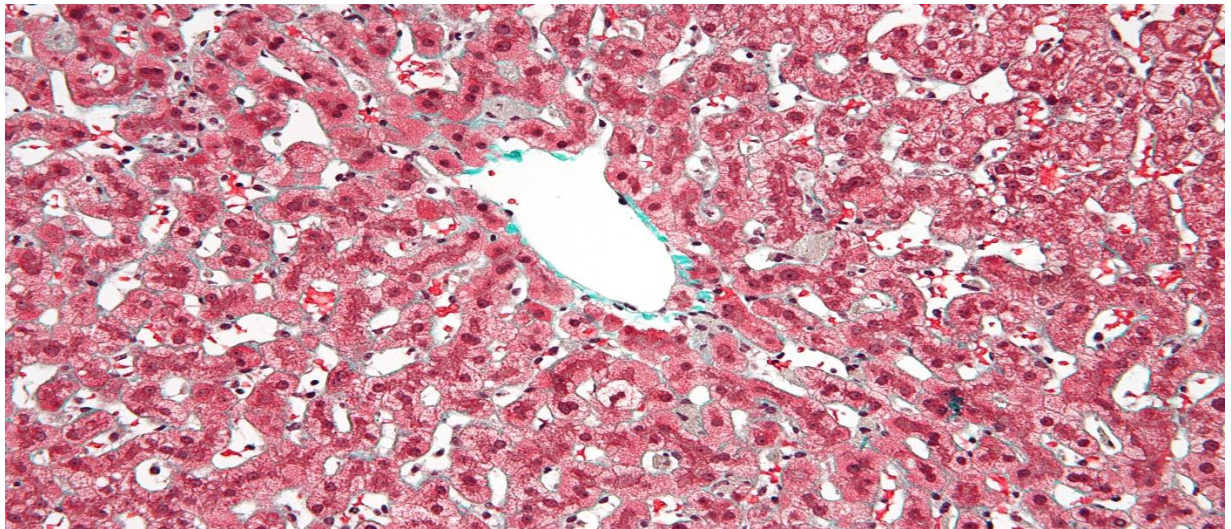
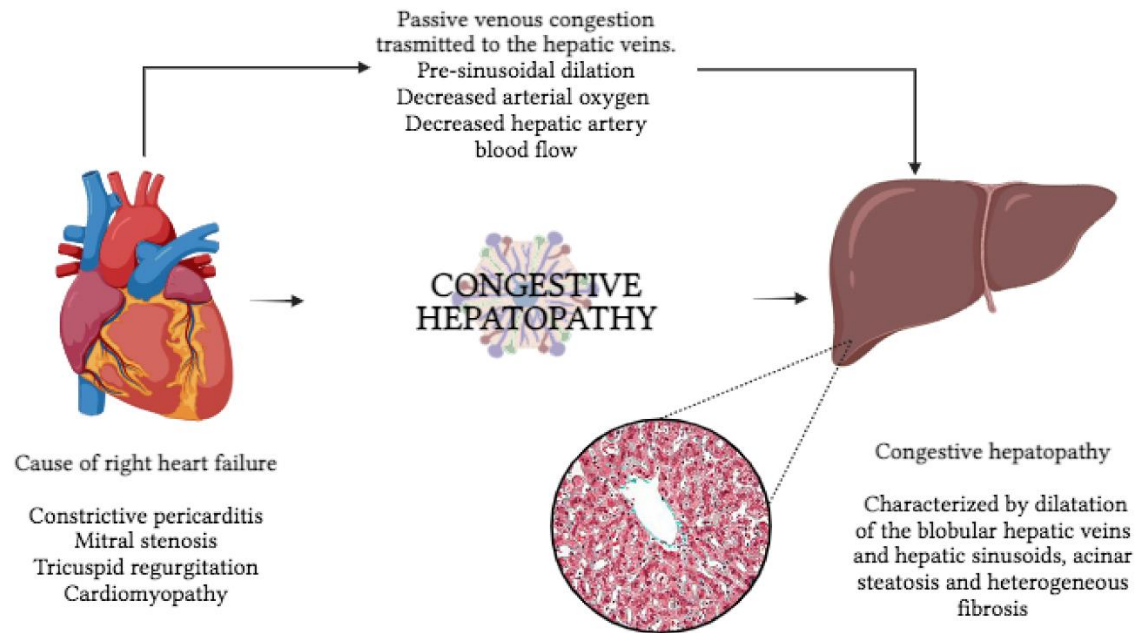
Functions of the Liver

- Metabolism of carbohydrates, fats, and proteins
- Detoxification of drugs and toxins
- Production of bile (important for fat digestion)
- Storage of glycogen, vitamins, and minerals
- Synthesis of plasma proteins (albumin, clotting factors)

Functions of the Liver Relevant to Systemic Disease

- Metabolism of carbohydrates, proteins, and lipids
- Detoxification of drugs and toxins
- Production of clotting factors
- Immune regulation (Kupffer cells)
- Storage of vitamins and minerals

1.Cardiovascular Diseases and the Liver



Effects

- Congestive heart failure can lead to **congestive hepatomegaly**
- Chronic congestion causes “**nutmeg liver**” appearance

Mechanism

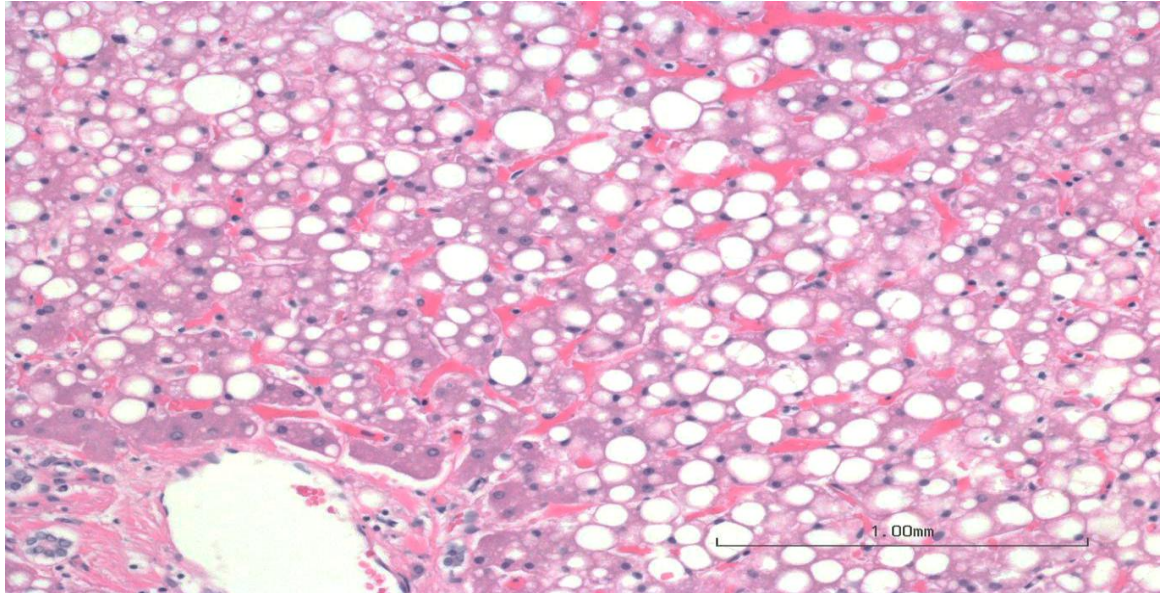
- Increased central venous pressure → impaired blood flow → hypoxia

Clinical Features

- Enlarged liver

- Mild jaundice
- Elevated liver enzymes

2. Metabolic Diseases

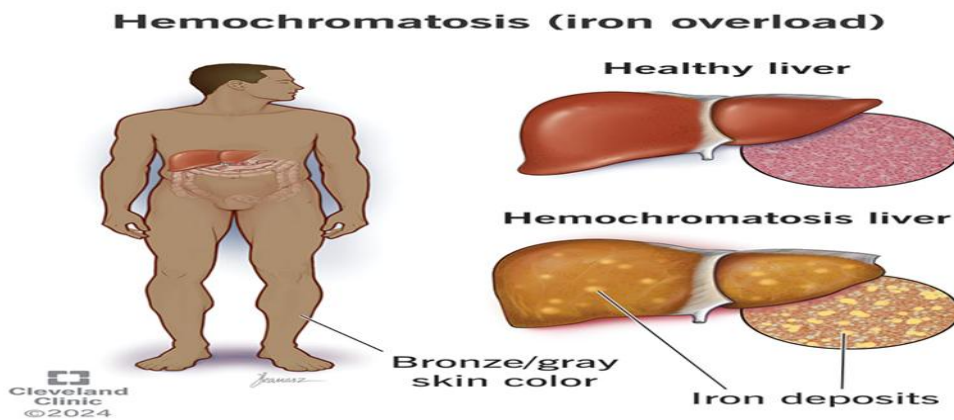


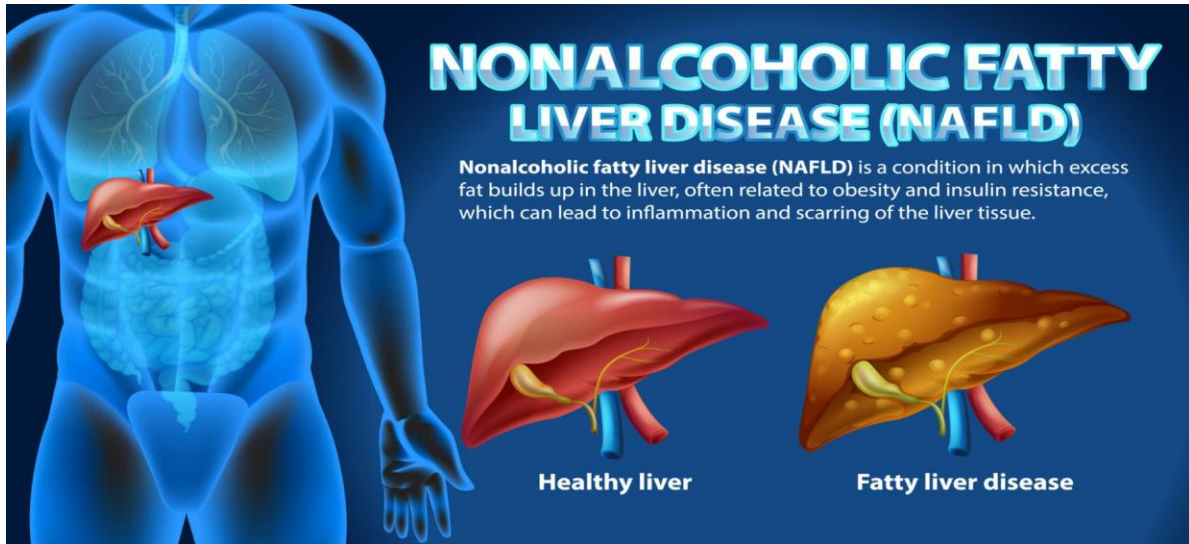
Examples

- **Non-alcoholic fatty liver disease (NAFLD)**
- Diabetes mellitus
- Hemochromatosis (iron overload)
- Wilson's disease (copper accumulation)

Effects

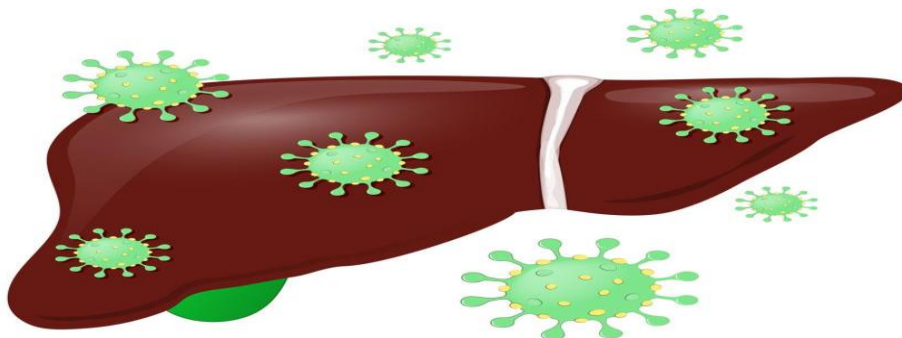
- Fat accumulation (steatosis)
- Inflammation → fibrosis → cirrhosis





3. Infectious Diseases

Hepatitis
(inflammation of the liver tissue that caused by viral infection)



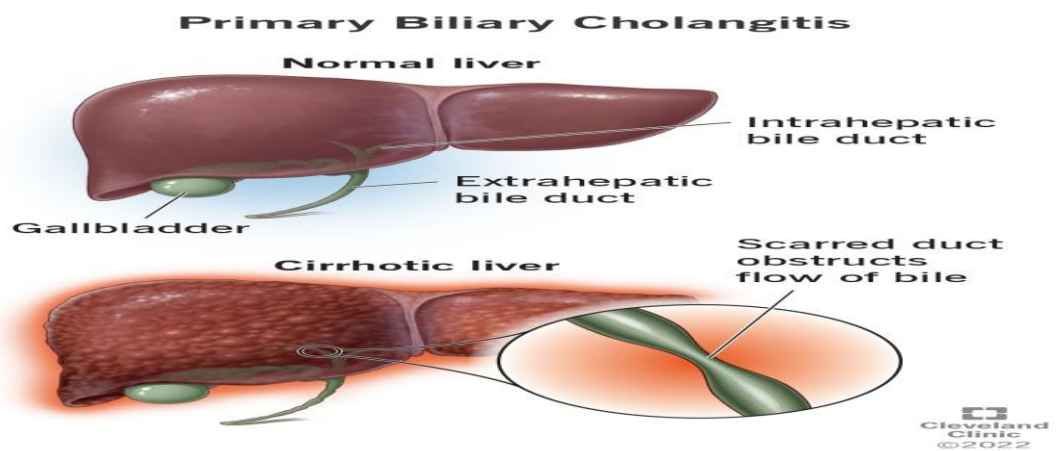
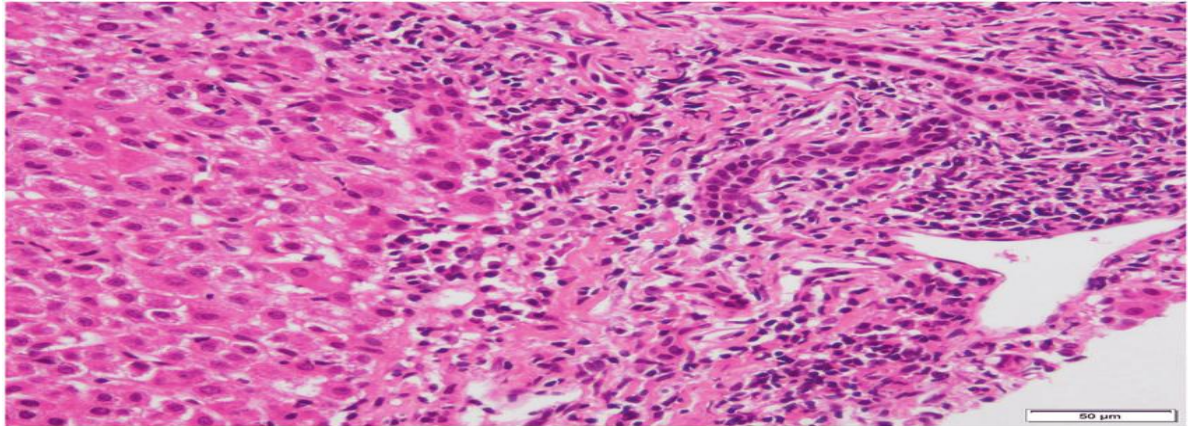
Causes

- Viral infections (Hepatitis A, B, C)
- Bacterial infections (liver abscess)
- Parasitic infections (e.g., amoebiasis)

Effects

- Liver inflammation
- Hepatocellular damage
- Chronic infection may lead to cirrhosis

4. Autoimmune Diseases



Examples

- Autoimmune hepatitis
- Primary biliary cholangitis
- Primary sclerosing cholangitis

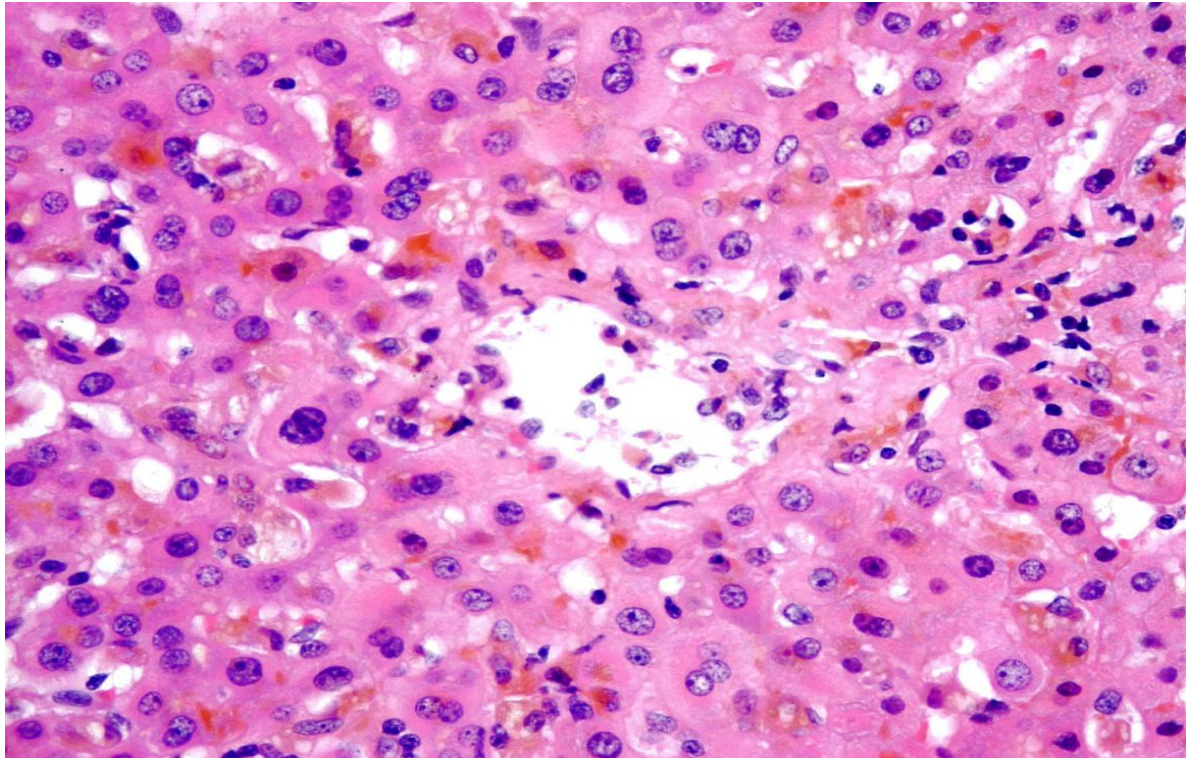
Mechanism

- Immune system attacks liver cells or bile ducts

Outcome

- Chronic inflammation → fibrosis → cirrhosis

5. Hematological Disorders



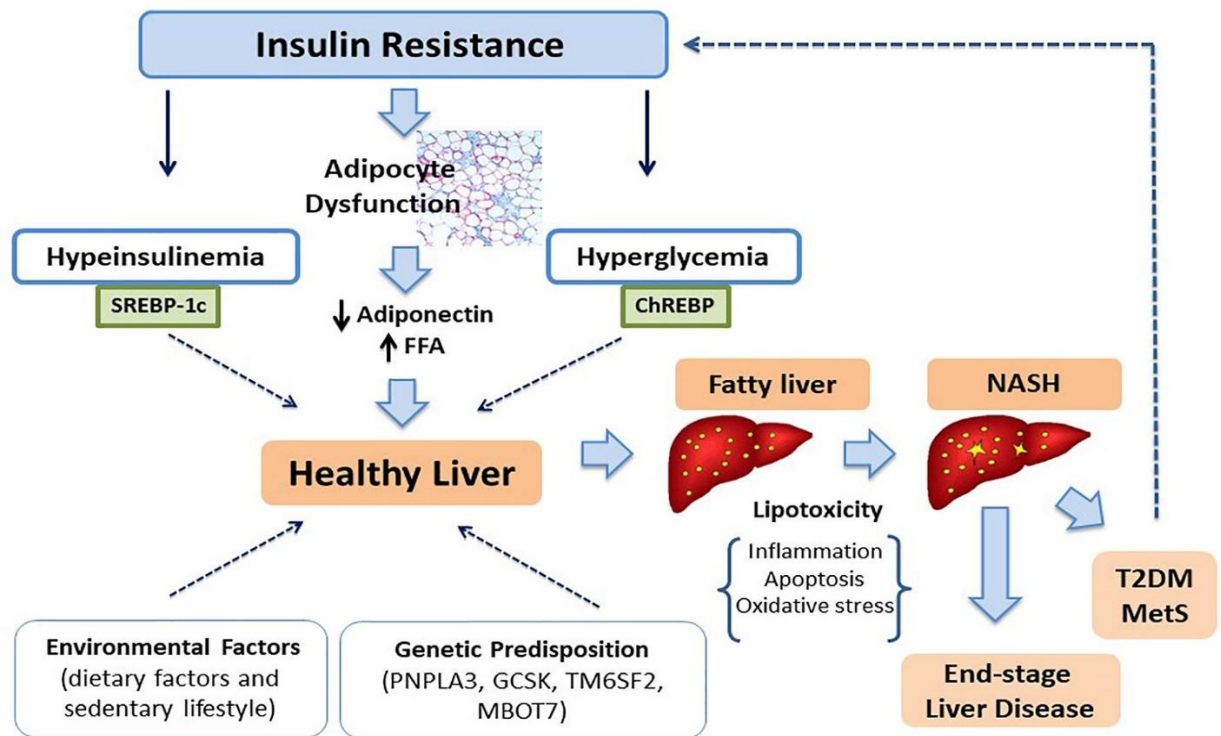
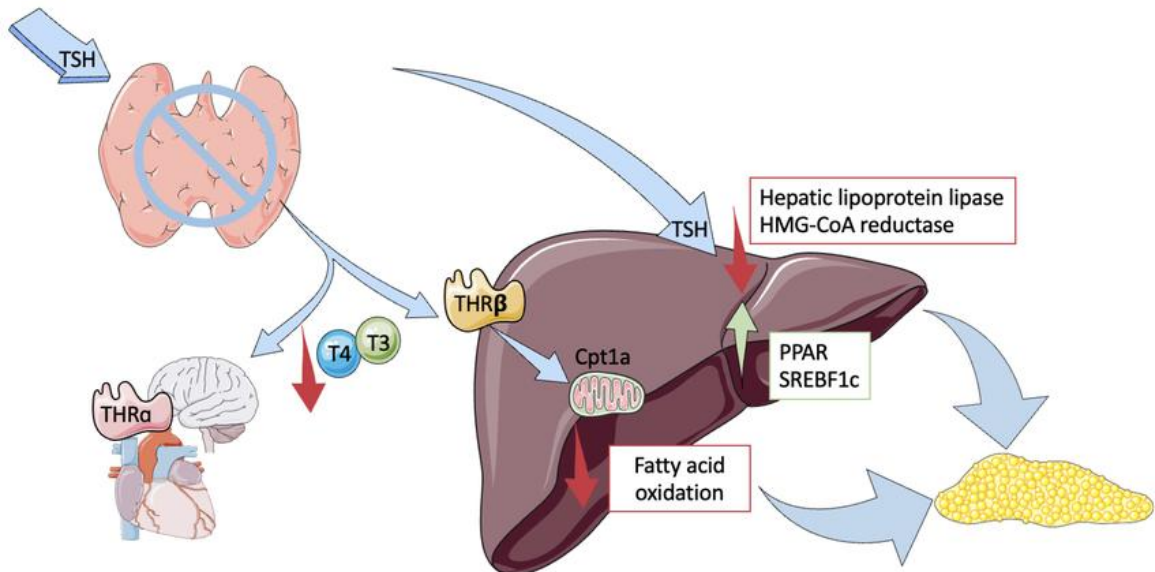
Causes

- Medications (e.g., paracetamol overdose)
- Herbal toxins

Types

- Acute liver failure
- Chronic liver damage

7. Endocrine Disorders



Examples

- Diabetes mellitus
- Thyroid disorders

Effects

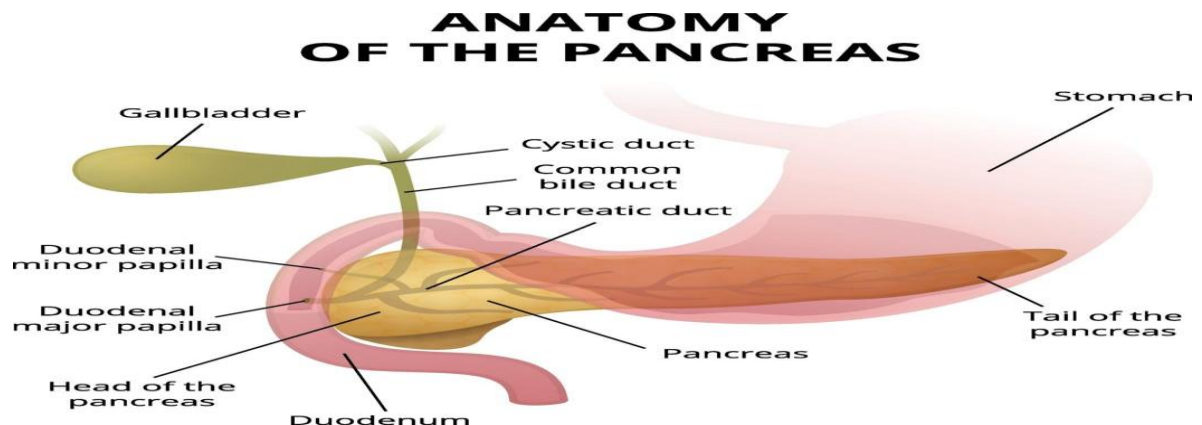
- Fatty liver disease
- Altered metabolism

Clinical Manifestations of Liver Involvement

- Jaundice
- Hepatomegaly
- Ascites
- Fatigue
- Abnormal liver function tests (ALT, AST, ALP)

2. The Pancreas

The pancreas is both an exocrine and endocrine gland located behind the stomach.



Functions

Exocrine function:

- Secretes digestive enzymes (amylase, lipase, proteases)

Endocrine function:

- Produces hormones such as:
 - Insulin (lowers blood glucose)
 - Glucagon (raises blood glucose)

Systemic Diseases & Aesthetic/Laser Relevance

□ Liver (incl. Cirrhosis & Hepatitis)

- **Systemic effects:** toxin buildup, hormonal imbalance, poor clotting

- **Skin signs:** jaundice, spider angiomas, bruising
- **Aesthetic risk:** ✗ high bleeding risk, poor healing → **avoid or limit laser**

□ **Pancreas**

- **Systemic effects:** diabetes, poor metabolism
- **Skin signs:** infections, slow healing, acanthosis nigricans
- **Aesthetic risk:** delayed healing, infection risk → **control glucose first**

□ **Intestine**

- **Systemic effects:** malabsorption, inflammation
- **Skin signs:** pallor, dry skin, hair loss
- **Aesthetic risk:** weakened in healing → **evaluate nutrition**

Key Takeaway

- These systemic diseases affect **skin quality + healing + safety**
- Before laser/aesthetic procedures:
 - ✓□ Check medical history
 - ✓□ Ensure disease is controlled
 - ✓□ Use conservative settings

☞ In severe cases (especially cirrhosis/hepatitis): **postpone treatment**