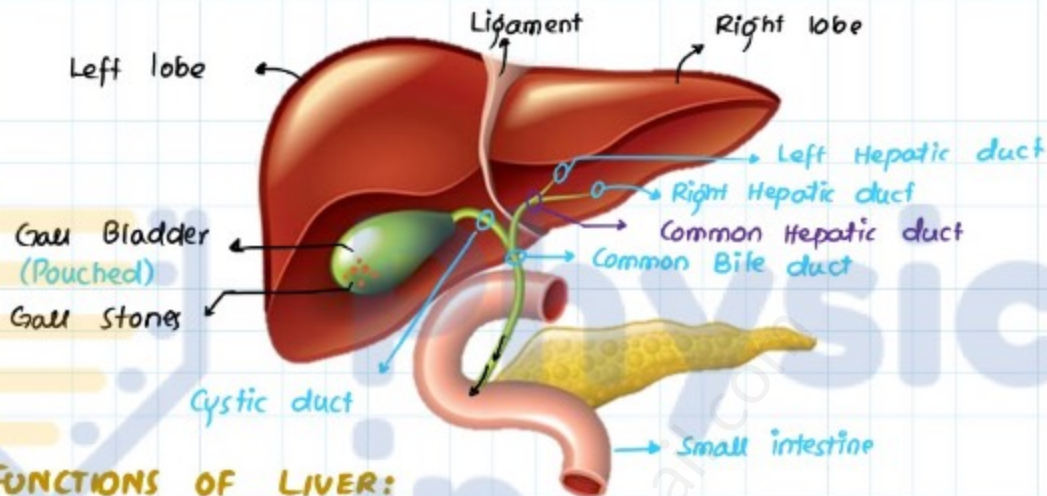


## Accessory Glands/Liver and Pancreas

### LIVER

→ largest internal organ  
largest gland

• Located below diaphragm



### FUNCTIONS OF LIVER:

#### → DETOXIFICATION

- Drugs + Endogenous Harmful Substances

+ Kupffer cells (Phagocytic)

#### → CARBOHYDRATE METABOLISM

- Glycogenesis (Glucose → Glycogen)
- Gluconeogenesis / Glycogenolysis  
Glycogen → Glucose
- Gluconeogenesis

Protein/Lipids → Glucose

#### → STORAGE

- Vitamins (A, D, E, K)
- Minerals (Iron, Copper)
- Glycogen

#### → FAT METABOLISM

- Cholesterol metabolism

#### → PROTEIN METABOLISM

- Amino Acid

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### BILE JUICE → Digestive System

Has no Enzyme (Enzymatic digestion) ×

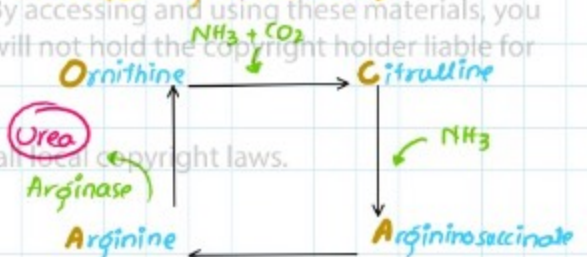
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Emulsification of Fats (Mechanical)

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### Urea cycle (CAAO)



### COMPONENTS:

- Water, Bile salts (Na<sup>+</sup>-salts), Bile Pigments (Bilirubin, Biliverdin)
- Cholesterol, Phospholipids (lecithin), Electrolytes, Cell debris

### PANCREAS

→ Elongated Organ, Located besides duodenum  
Colour (light tan, Pinkish)

Exocrine (Acinar cells)

Endocrine (Islets of Langerhans)

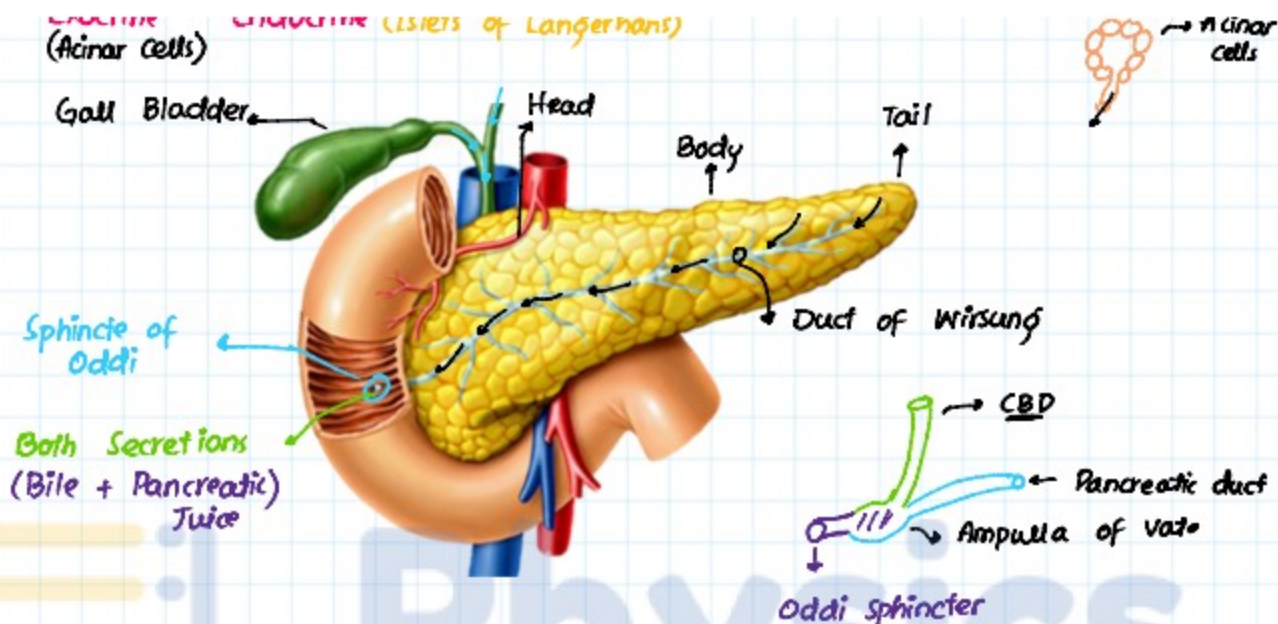
Gall Bladder

Head

Tail







**PANCREATIC JUICE** → Alkaline pH (8)  
(500-800 ml/day) Colourless, Odourless

• Responsible for all types food content breakdown.

- Pancreatic Amylase (Amylopsin)

Starch / Glycogen → Maltose / Iso-maltose

- Pancreatic Lipase (pH 7-9)

Emulsified Fats → Fatty Acids + Glycerol

- Trypsinogen  $\xrightarrow{E-K}$  Trypsin

Proteins → Polypeptides + Peptides

- Chymotrypsinogen → Chymotrypsin

- $\text{NaHCO}_3$  (Neutralization)

- Procarboxypeptidase → Carboxypeptidase

- Nucleases

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