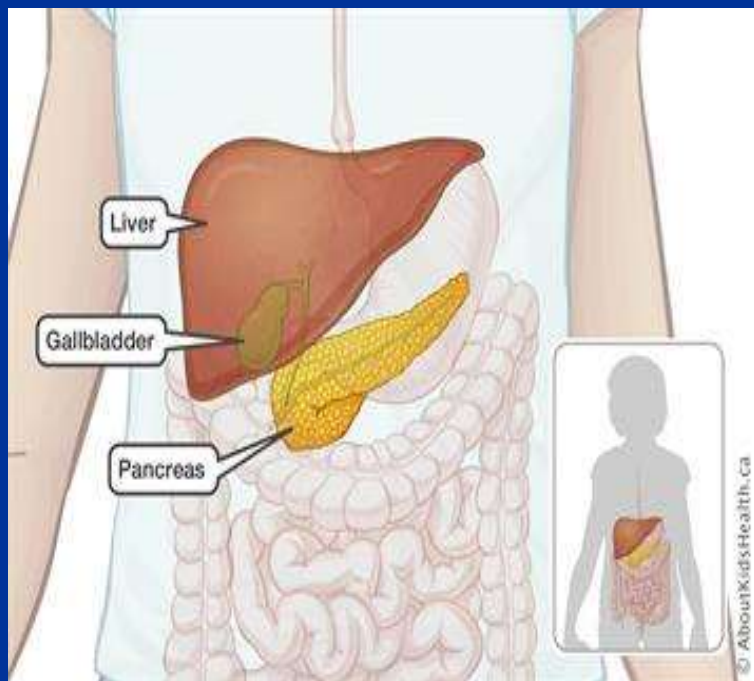


PANCREATIC SECRETION



Introduction

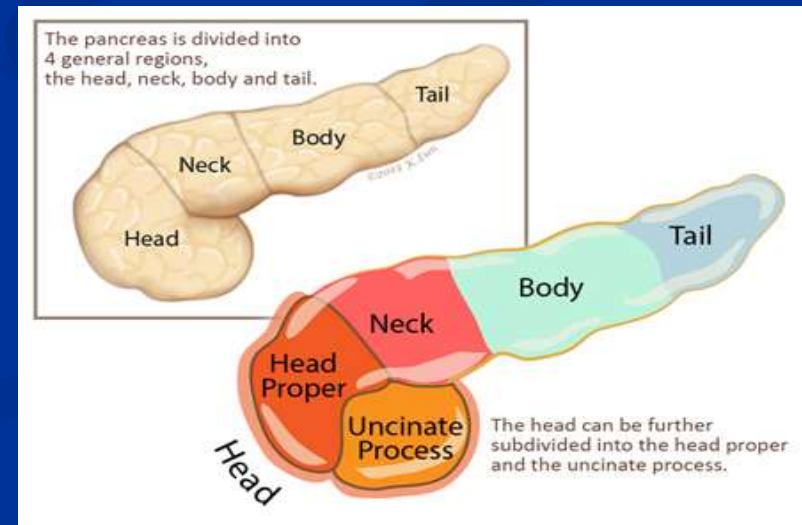
- **Pancreas is an accessory organ of the digestive system**
- **When the food enters the small intestine it is mixed with pancreatic secretion & bile**

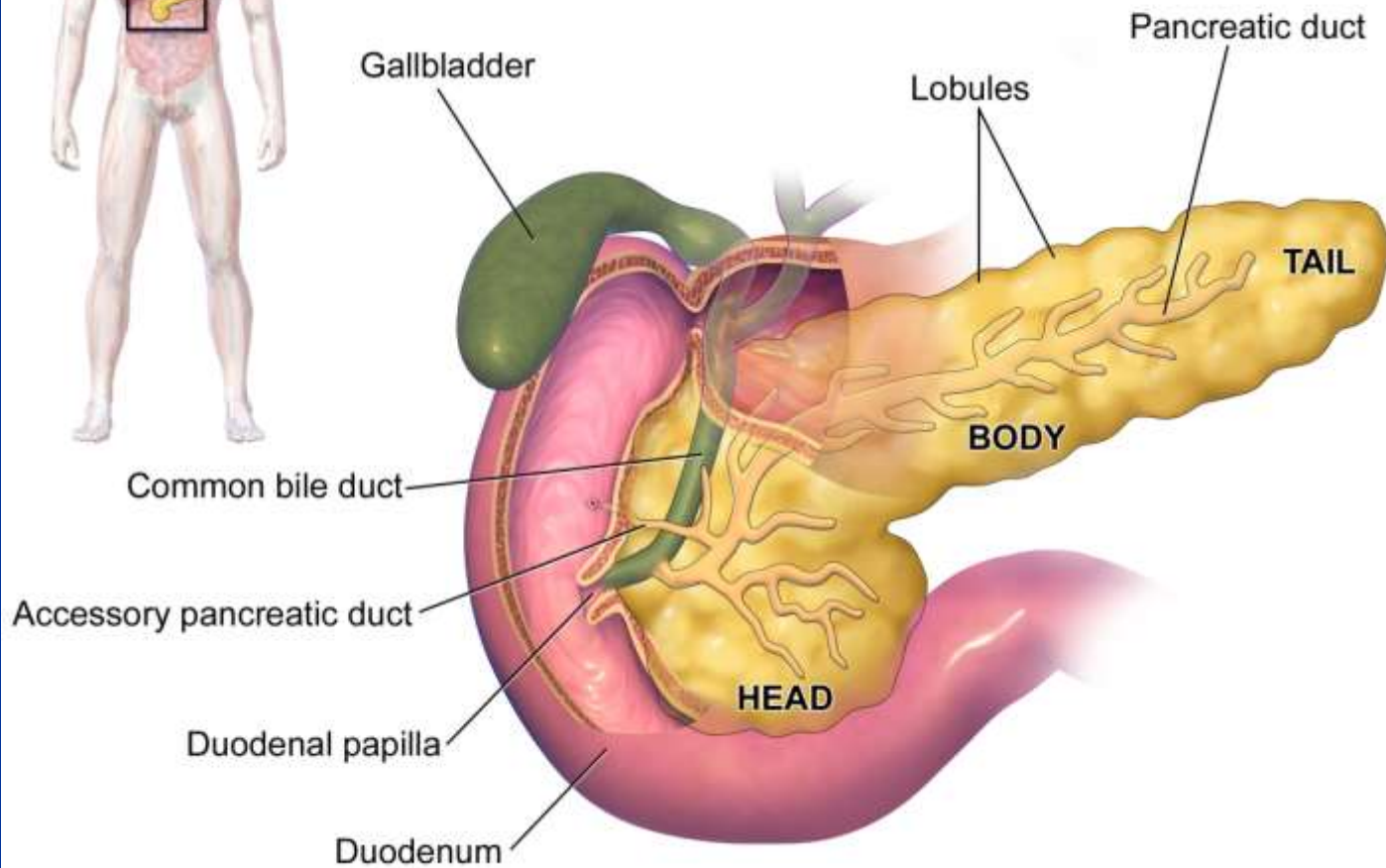
Functional Anatomy

- Pancreas is an elongated, accessory digestive gland- lies retroperitoneally
- Anatomically Pancreas is divided into- ***Head, Neck, Body & Tail***
- Physiologically (based on function) divided into-

I. Exocrine Part

II. Endocrine Part





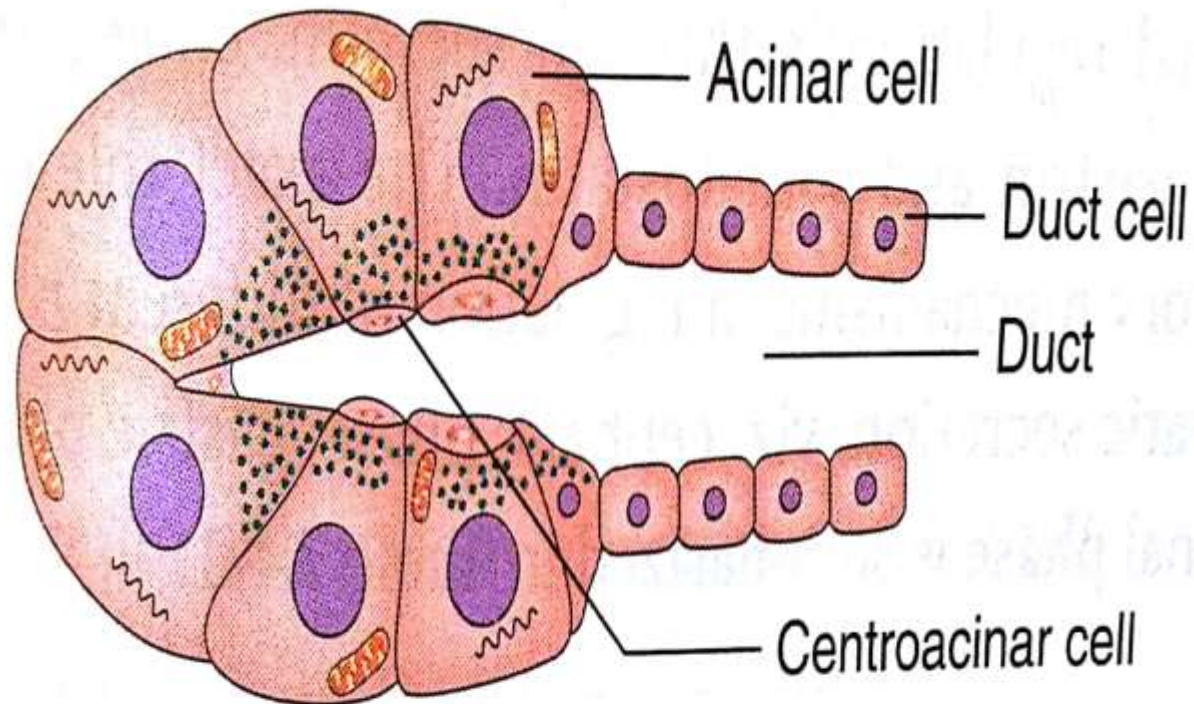
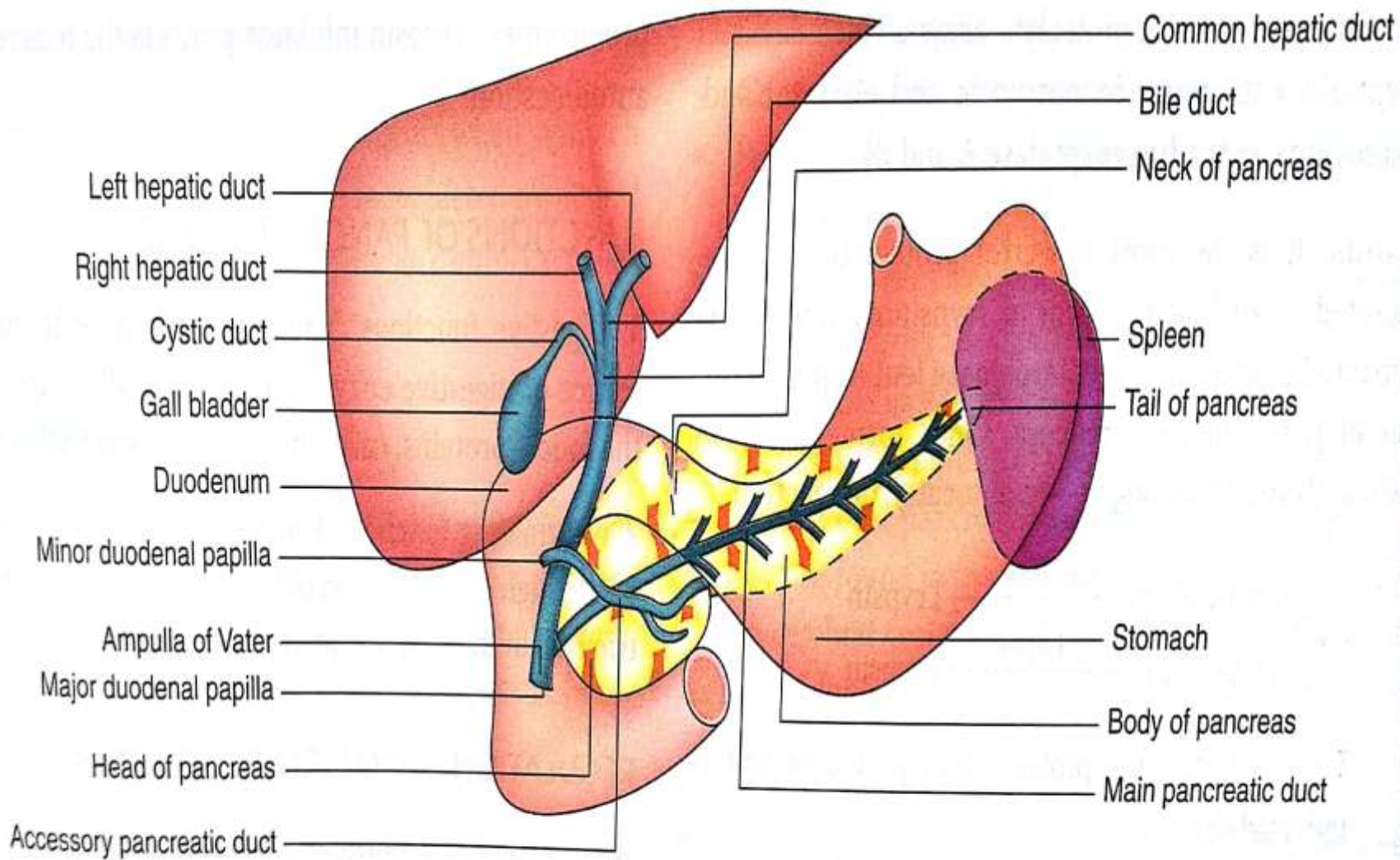


Fig. 7.4-2 Histology of functional unit of pancreas.



4-1 Anatomical relations of pancreas, pancreatic duct and extrahepatic biliary system.

Composition Of Pancreatic Juice

■ **Secreted by Acini-**

Quantity- 100-1200 ml

Colour- Colourless

pH- Alkaline (8-8.3)

Content- 99.5% water
0.5% solids

SOLIDS-

Organic Component has Enzymes & Albumin, Globulin

Inorganic components are Na, K, Ca, Cl etc

- A. Digestive enzyme for Proteins- *Trypsin, Chymotrypsin, Carboxypeptidase***
- B. Digestive enzyme for Carbohydrate- *Pancreatic Amylase***
- C. Digestive enzyme for Fats- *Pancreatic Lipase, Phospholipase, Cholesterol esterase***

Functions Of Pancreatic Juice

1. Digestion Of Protein- When synthesized in pancreatic cell, the proteolytic digestive enzymes are in inactive forms namely-

Trypsinogen, Chymotrypsinogen & Procarboxypeptidase

Trypsinogen $\xrightarrow{\text{Enterokinase}}$ Trypsin

Further,

Chymotrypsinogen $\xrightarrow{\text{Trypsin}}$ Chymotripsin

Procarboxypeptidase \longrightarrow Carboxypeptidase

2. Digestion Of Carbohydrate-

Pancreatic amylase hydrolysis starches & glycogen & most of the other carbohydrates except Cellulose

3. Digestion Of Fats-

Triglycerides are converted into fatty acids & monoglycerides by pancreatic lipase

Cholestrol esterase causes hydrolysis of cholestrol esters

Phospholipids splits fatty acids from phospholipids

4. Bicarbonate Ions-

Bicarbonate ion are secreted from pancreatic ductules

5. Trypsin Inhibitor-

Secreted by pancreas keeps the trypsin in an inactive form. It prevents autodigestion of the pancreas.

Applied

- **Acute Pancreatitis/ Chronic Pancreatitis – Inflammation Of Pancreas, due to auto digestion of pancreatic tissue by pancreatic enzyme.**

