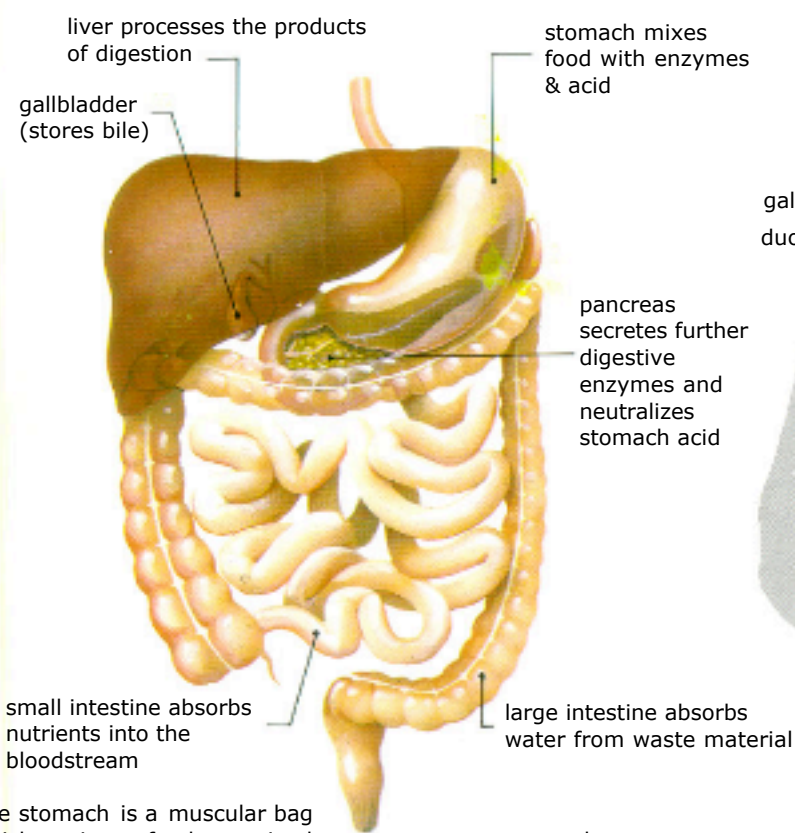
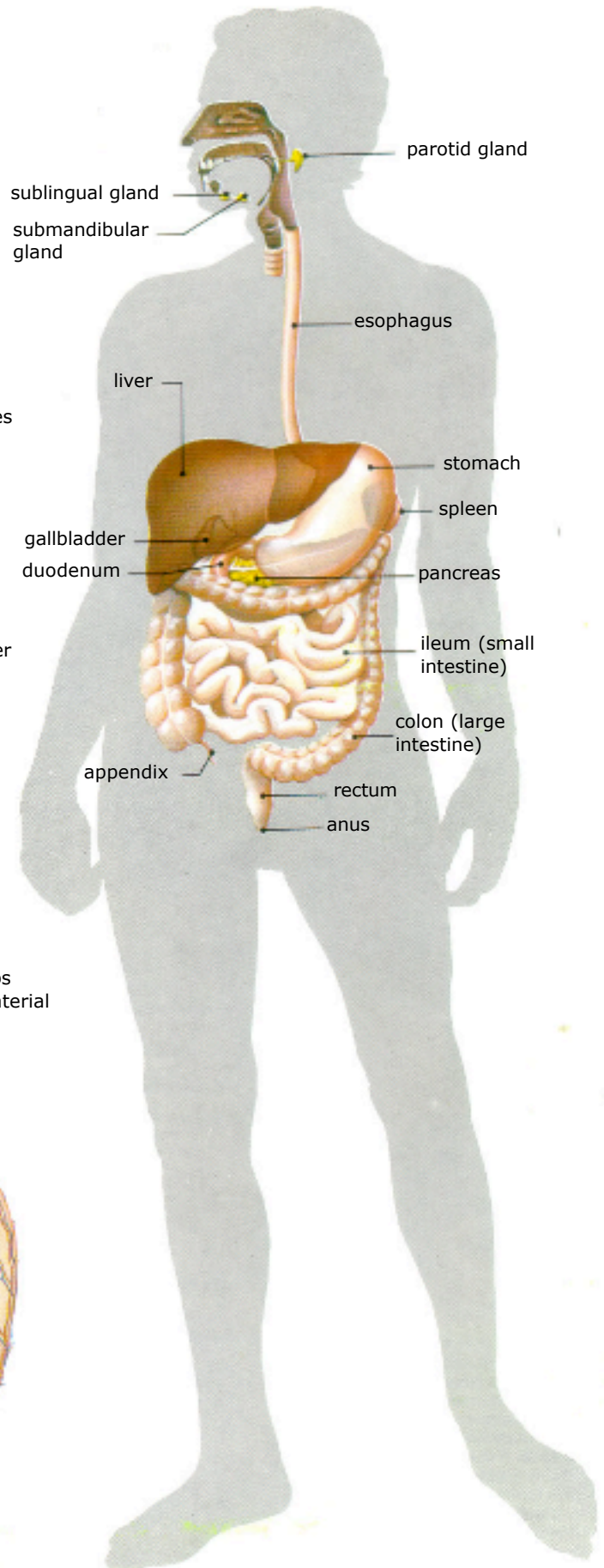
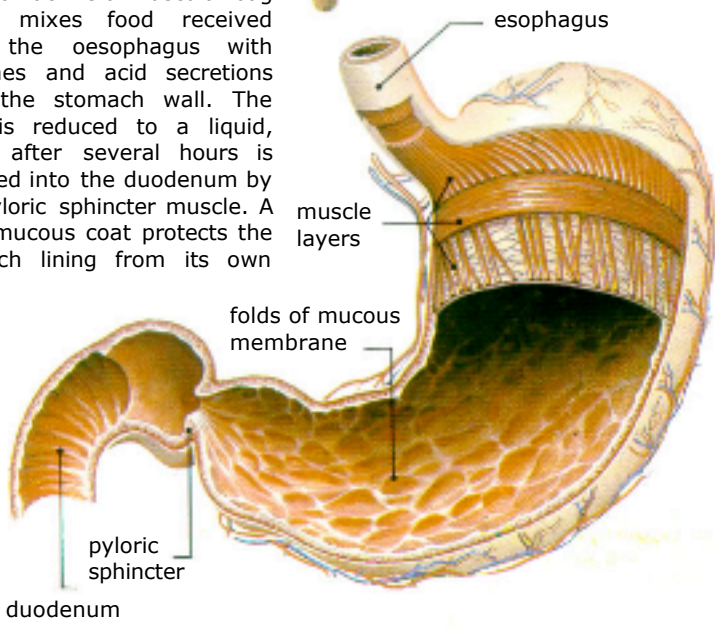


# The Digestive System 1

Digestion consists of reducing food to its constituent parts and then absorbing the essential nutrients. Food is broken down in the stomach and duodenum by the action of enzymes released from the glands in the mouth, stomach and pancreas. The absorption of nutrients into the blood stream occurs mainly in the small intestine. In the small intestine, water is absorbed to leave semisolid waste which is passed via the rectum as feces. The liver is the largest gland in the body and is responsible for utilising the products of digestion absorbed into the blood.



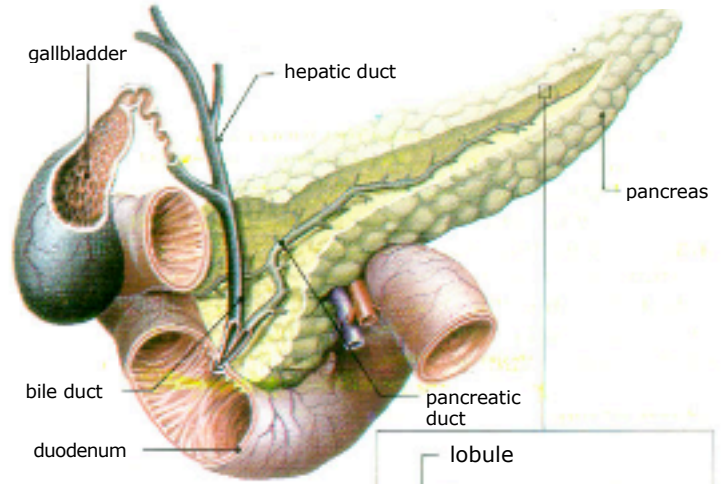
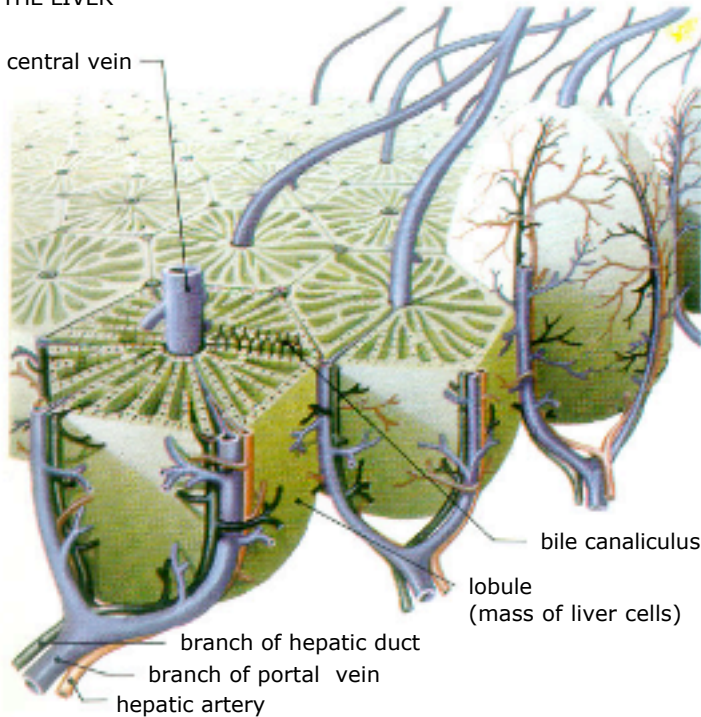
The stomach is a muscular bag which mixes food received from the oesophagus with enzymes and acid secretions from the stomach wall. The food is reduced to a liquid, which after several hours is released into the duodenum by the pyloric sphincter muscle. A thick mucous coat protects the stomach lining from its own acid.



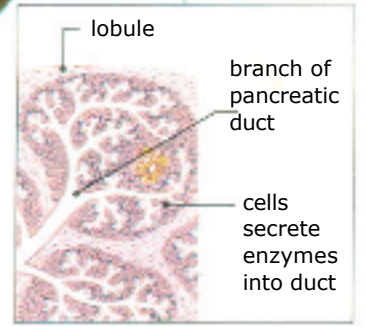
# The Digestive System 2



A CROSS SECTION THROUGH THE LIVER

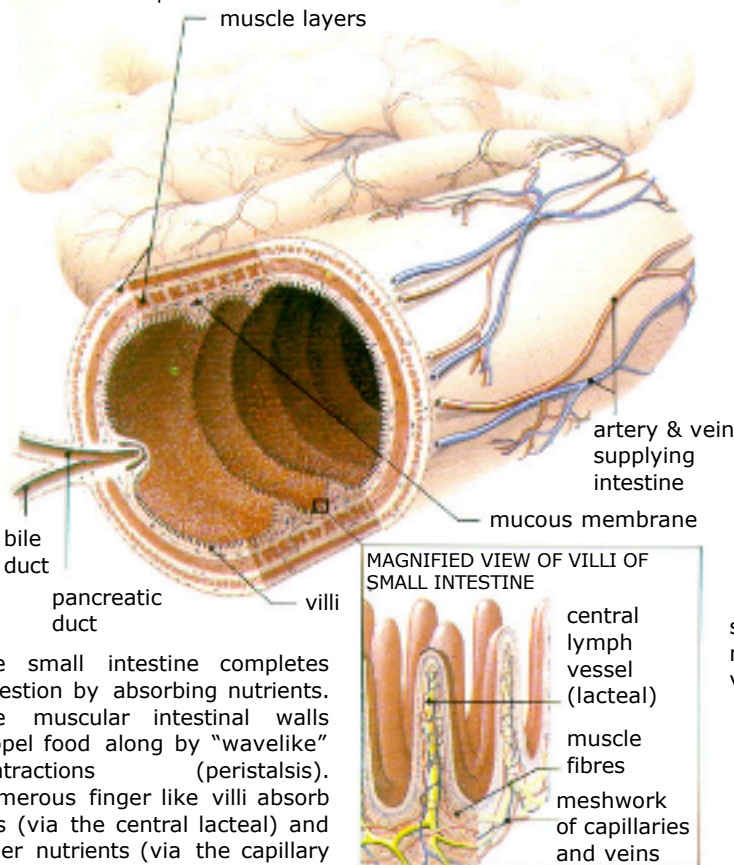


The gallbladder stores bile made by the liver and is released into the duodenum in response to a fatty meal. The pancreas secretes a number of enzymes involved in the digestion of proteins, carbohydrates and fats. These enzymes pass via the pancreatic duct, which joins the bile duct, into the duodenum.

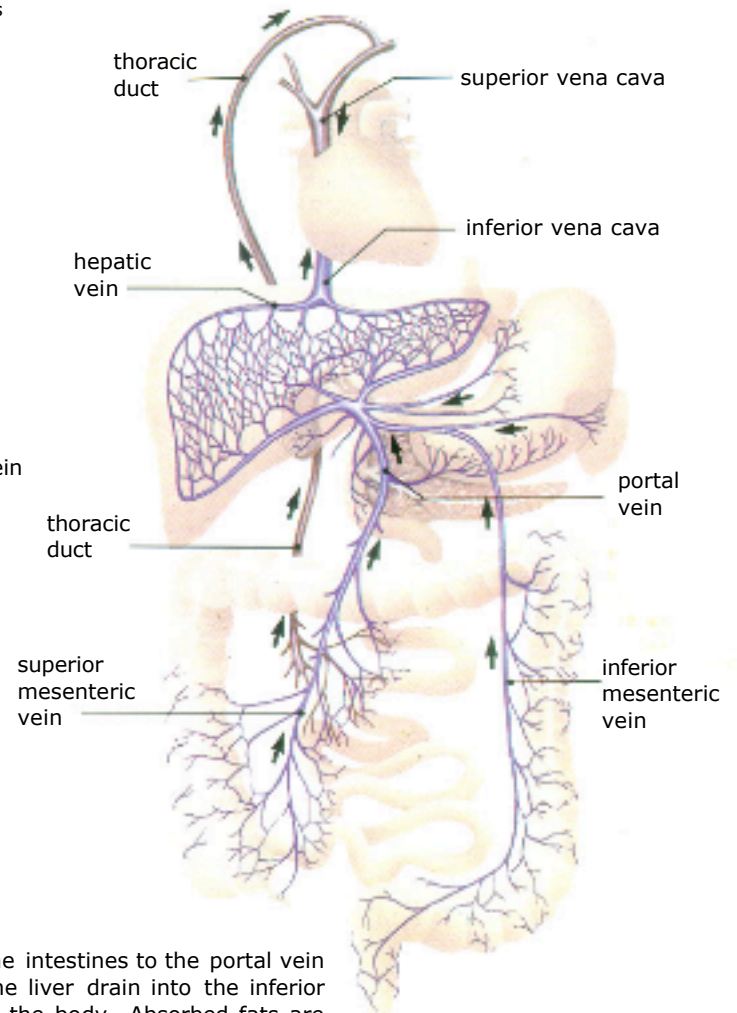


The liver is an extremely complex gland with many vital functions. Through the portal vein it receives nutrients absorbed from the intestines. It converts poisonous ammonia compounds into nontoxic urea; it stores sugar for release into the bloodstream when necessary; it synthesises complex proteins from simple ones absorbed from food; it makes bile which is stored in the gallbladder and is essential for fat absorption.

## TRANSPORTATION OF NUTRIENTS



The small intestine completes digestion by absorbing nutrients. The muscular intestinal walls propel food along by "wavelike" contractions (peristalsis). Numerous finger like villi absorb fats (via the central lacteal) and other nutrients (via the capillary network).



Numerous veins (right) transport nutrients from the intestines to the portal vein which enters the liver. Materials processed by the liver drain into the inferior vena cava for transport to the heart and around the body. Absorbed fats are carried to the heart by the thoracic duct.