# Absorption & Assimilation

## Absorption

- Process of absorption of end products of digestion into the blood or lymph from intestinal mucosa
- Occurs by active, passive or facilitated transport mechanisms

## Assimilation

- Process of synthesis of macromolecules from simple absorbed molecules
- Helps in cell growth, development & new cell production

## Duodenum

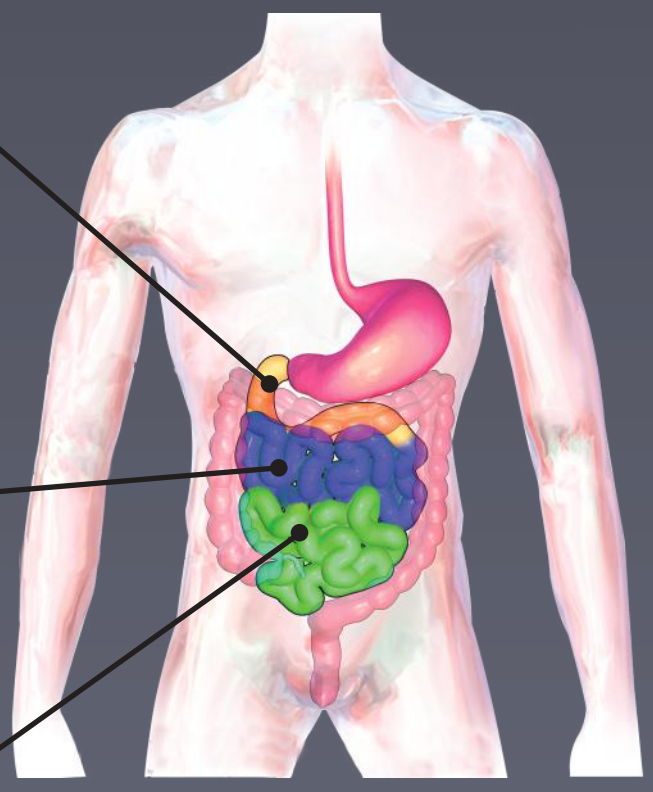
- First section of small intestine
- Connects to pyloric sphincter of the stomach
- Bile & pancreatic juices mix with chyme

## Jejunum

- Middle section of small intestine
- Primary site of nutrient absorption & is 3 ft in length

## Ileum

- Terminal section of small intestine
- Empties into large intestine
- Completes remaining nutrient absorption & is 6 ft in length

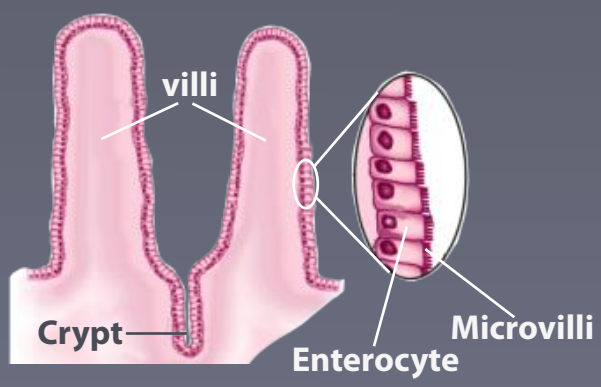


## Small Intestine

- 10 ft convoluted tube-like structure
- Mesentery surrounds it & anchors it in place
- Special cells help absorb nutrients from intestinal lining to bloodstream

## Absorptive Area

- Huge surface area due to presence of mucosal folds, villi, and microvilli.




- Villi & microvilli are exposed to lumen.
- Microvilli: Creates brush-like border that increases rate of nutrient absorption.
- Villi: Digested food particles pass from lumen of intestine to blood capillaries or lacteal.
- Amino acids & monosaccharides enter blood capillary network.
- Larger molecules of digested fat enter lacteal & are emptied into lymphatic system.
- Water & fatty acids are absorbed by osmosis & diffusion.
- Glucose, amino acids & minerals are absorbed by active transport.