

# MODULE 10 L02

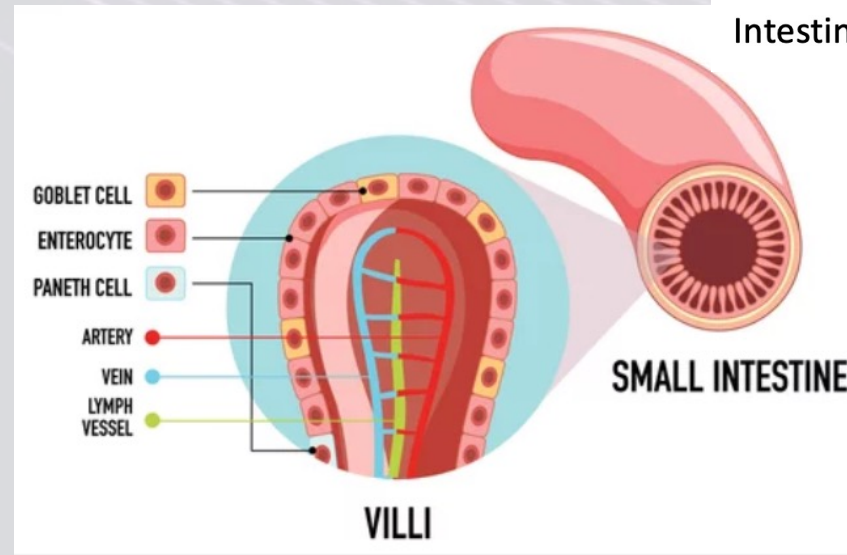
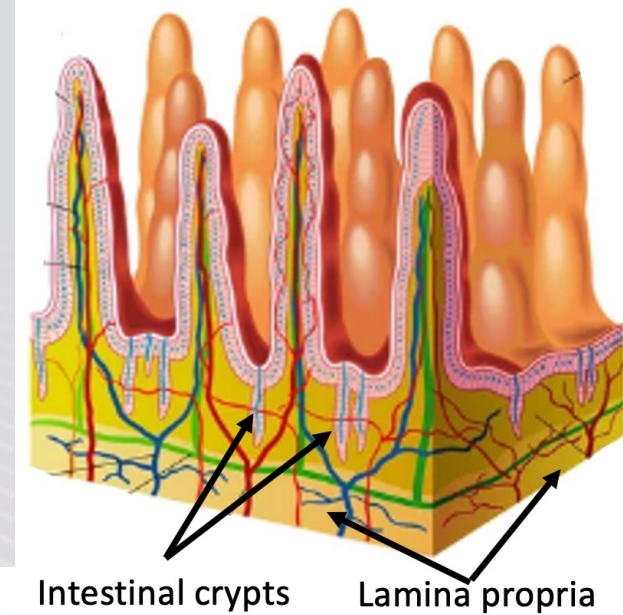
## Digestive System: Small Intestinal Functions

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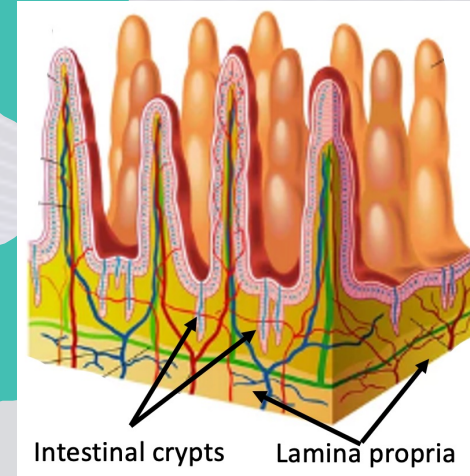
# Mucosal Cells

- Enterocytes (absorptive cells)
  - ❖ Represent 80% of total epithelial cells
  - ❖ Functions:
    - Nutrient absorption
    - Secretion of salts, nutrients, and water
- Goblet cells
  - ❖ Secrete mucus
    - Lubricate chyme
    - Protective barrier



# Intestinal Crypts

- Enteroendocrine cells
  - ❖ G cells – secrete gastrin in response to presence of chyme
    - Stimulates muscle contraction
  - ❖ I cells – secrete CCK
    - Pancreas – stimulates secretion of pancreatic juices
    - Gallbladder - stimulates release of bile
    - Stomach - controls emptying, suppresses appetite
    - Small intestine – triggers bowel motility
  - ❖ K cells – secretes gastric-inhibitory peptide (GIP) in response to chyme entering small intestine
    - Stimulates insulin secretion
  - ❖ M cells – secretion of motilin
    - Accelerates gastric emptying and stimulates intestinal motility
    - Stimulates production of pepsin
  - ❖ S cells – secretes secretin in response to acidic chyme
    - Osmoregulatory function
    - Inhibitory effect on gastric emptying and motility
- Stem cells – quickly dividing cells
- Paneth cells – secrete bacteria killing enzymes



# Paneth Cells

- Intestinal flora
  - A. Control population of bad bacteria
  - B. Responsible for manufacturing essential vitamins
    - Vitamin K
      - Anti-calcification, anti-cancer, bone-forming
      - Insulin-sensitizing
    - B-complex
      - Thiamine (B1)
      - Riboflavin (B2)
      - Pantothenic acid (B5)
      - Biotin
    - Folate
      - + B12 = breaks down folate → create new proteins and forms RBCs



# Lamina Propria

- Capillaries
  - ❖ Absorb and carry nutrients → hepatic portal circulation
- Lacteals
  - ❖ Transport large lipids-protein complexes → venous circulation

