Digestive System Interactions

Endocrine System
- Liver removes hormones from blood, ending their activity; digestive system provides nutrients needed for energy fuel, growth, and repair; pancreas has hormone—producing cells
- Local hormones help regulate digestive function

Immune System
- Digestive system provides nutrients for normal functioning; I-LCl of stomach provides nonspecific protection against bacteria
- Lacteals drain fatty lymph from digestive tract organs and convey it to blood; Peyer’s patches and lymphoid tissue in mesentery house macrophages and immune cells that protect digestive tract organs against infection

Urinary System
Digestive system provides nutrients for energy fuel, growth, and repair; excretes some bilirubin produced by the liver
- Kidneys transform vitamin D to its active form, which is needed for calcium absorption

Muscular System
- Digestive system provides nutrients for energy fuel, growth, and repair; liver removes lactic acid, resulting from muscle activity, from the blood
- Skeletal muscle activity increases motility of GI tract

Reproductive System
- Digestive system provides nutrients for energy fuel, growth, and repair and extra nutrition needed to support fetal growth

Nervous System
- Digestive system provides nutrients for normal neural functioning
- Neural controls of digestive function; in general, parasympathetic fibers accelerate and sympathetic fibers inhibit digestive activity; reflex and voluntary controls of defecation

Respiratory System
- Digestive system provides nutrients for energy metabolism, growth, and repair
- Respiratory system provides oxygen and carries away carbon dioxide produced by digestive system organs

Cardiovascular System
- Digestive system provides nutrients to heart and blood vessels; absorbs iron needed for hemoglobin synthesis; absorbs water necessary for normal blood volume Cardiovascular system
- S transports nutrients absorbed by alimentary canal to all tissues of the body; distributes hormones of the digestive tract

Integumentary System
- Digestive system provides nutrients for energy fuel; growth, and repair; supplies fats that provide insulation in the dermal and subcutaneous tissues
- The skin synthesizes vitamin D needed for calcium absorption from the intestine; protects by enclosure

Skeletal System
- Digestive system provides nutrients for energy fuel, growth, and repair; absorbs calcium needed for bone salts
- Skeletal system protects some digestive organs by bone; cavities store some nutrients (e.g., calcium; fats)