

GENERAL BIOLOGY Lecture 33 - Digestion

- I. Digestion as a part of nutrition**
 - A. Importance of digestion and nutrition - ENERGY & METABOLISM**
 - B. Nutrition: The total process involved in the absorption and utilization of foods and food accessories**
 - 1. Intake
 - 2. Digestion
 - 3. Absorption
 - 4. Utilization
 - C. Four main functions of digestive systems**
 - 1. Motility - mechanical breakdown, mixing of ingested foods, passage, and elimination
 - 2. Secretion - release of enzymes, hormones, and other substances
 - 3. Digestion - chemical reduction of ingested materials to units small enough to cross the lining of the gut
 - 4. Absorption - passage of nutrients from the gut into the blood or lymph
- II. Parts of the digestive system - "MESSI LIRA "**
 - A. Mouth - food (hopefully) enters here and undergoes mechanical reduction**
 - B. Esophagus - muscular tube leading to the stomach**
 - C. Stomach - muscular sac**
 - 1. Stores and mixes food
 - 2. Secretes substances - HCl, pepsinogens, and mucus
 - 3. Controls rate of entrance into small intestine
 - D. Small Intestine - location where most nutrients are absorbed (as monosaccharides)**
 - 1. Duodenum, jejunum, and ileum
 - E. Large Intestine - stores and concentrates the feces**
 - F. Rectum - portion of large intestine extending from the LI to the anal canal**
 - G. Anus - terminal opening of the gut - - - POOP**
- III. Enzymes of digestion (where) - function (most break down foods)**
 - A. Salivary amylase (mouth) - polysaccharides**
 - B. Pepsin (stomach mucosa) - proteins**
 - C. Trypsin & chymotrypsin (pancreas) - proteins & polypeptides**
 - D. Peptidases (pancreas & SI) - peptide fragments**
 - E. Lipases (pancreas) - fats**
- IV. Control of digestion - hormones (insulin & glucagon)**
 - A. Insulin takes blood sugar and "puts it to work" in cells**
 - B. Glucagon enables release of sugar into the blood stream**