

GRAND: Optimizing the Upper GI - Mind, Mouth, and Stomach - Anatomy and Physiology of the GI Tract

Optimizing the Upper GI: Mind, Mouth, and Stomach Anatomy and Physiology of the GI Tract With Dr. Ritamarie Loscalzo



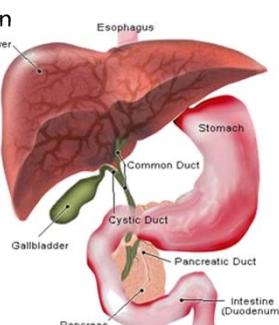
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Part 2: Optimizing Your Upper GI - Stomach Acid and Enzymes

- The structure and function of the upper GI tract
- The physiology of the upper GI tract – what it does and how it does it
- How to know when something is wrong
- How to correct what's wrong



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3 Main
Functions of
the Digestive
System

Digestion

Breaks down
food into
molecules your
body can use

Absorption

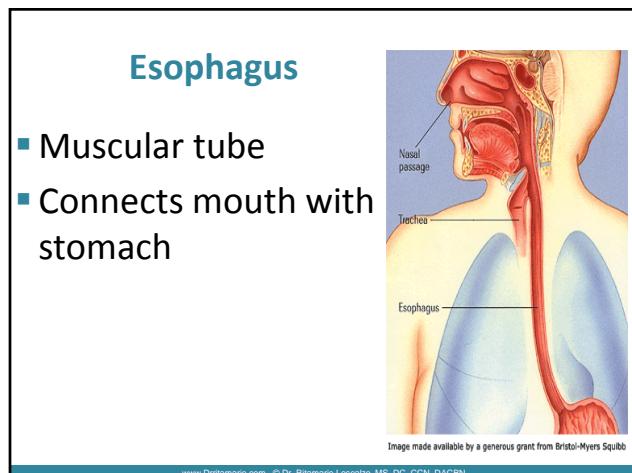
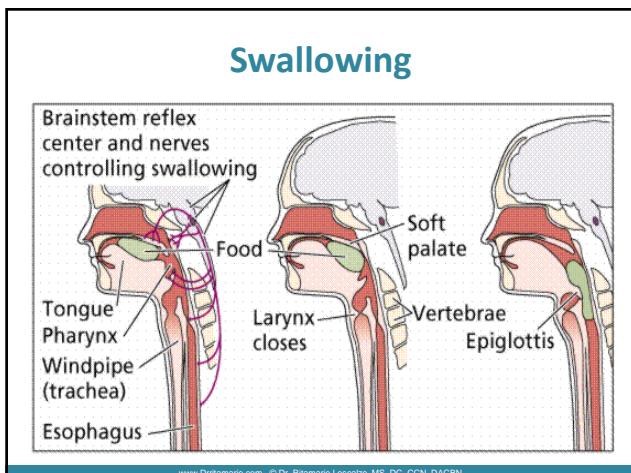
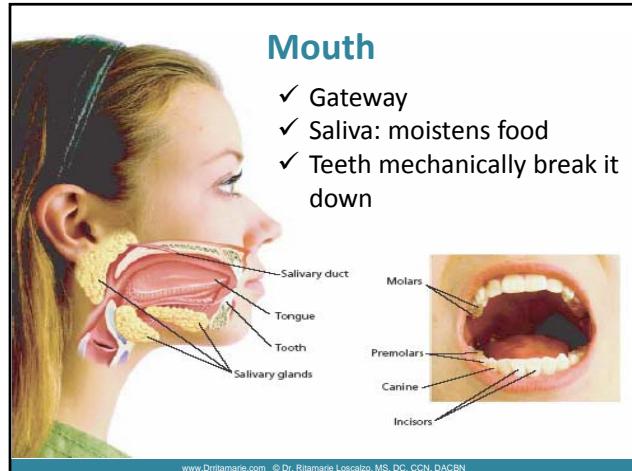
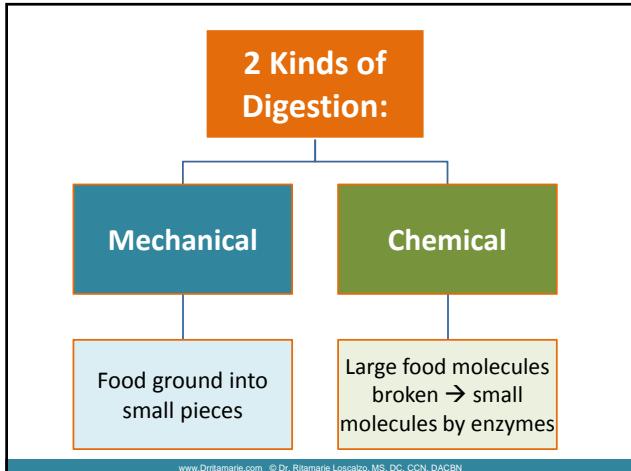
Molecules
absorbed
into the blood
and carried
through body

Elimination

Wastes
eliminated
from the body

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Your Stomach's Job Description

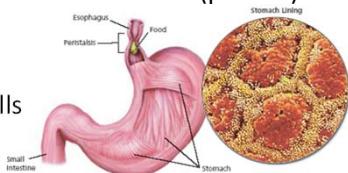
- Mix and churn the food into chyme
- Make stomach acid to start digestion of protein and minerals
- Make intrinsic factor to escort B12 into your blood
- Secrete pepsinogen to begin digestion of proteins
- Kill pathogens on food
- Nudges the other digestive organs to get ready



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Stomach Secretions

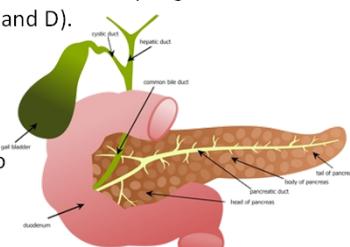
- **Mucus:** mucous cells (protects)
- **Gastrin:** epithelial cells (stimulates acid)
- **Gastric Acid:** parietal cells (activates protein and mineral digestion)
- **Pepsinogen:** mucous and chief cells (protein)
- **Intrinsic Factor:** parietal cells (B12)
- **Ghrelin:** ghrelin cells (hunger)



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Pancreas and Enzymes

- Pancreas produces enzymes to chemically break down starches, proteins, fats, and help digest all fat-soluble vitamins (E,A,K, and D).
 - ✓ Proteases
 - ✓ Amylase
 - ✓ Lipase
- Produces bicarbonate to neutralize stomach acid
- Secrete juices into duodenum
- Function not related to digestion
 - insulin, glucagon



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