

## DIGESTIVE SYSTEM I

### I. Introduction

#### A. Two main parts:

1. Gastrointestinal (GI) tract – mouth, pharynx, esophagus, stomach, small intestine, large intestine, and anus.
2. Accessory digestive organs – teeth, tongue, gallbladder, salivary glands, liver, and pancreas

#### B. Abdominopelvic cavity is lined by 2 serous membranes = Peritoneal membranes = Peritoneum (secretes a watery fluid)

1. Parietal peritoneum – attached to body wall and extends to organs.

2. Visceral peritoneum – fused to surface of abdominal organs.

### II. Histology of the GI Tract: All parts of the GI tract have the same four layers (tunics):

#### A. Tunica Mucosa: innermost, 3 parts

1. Epithelial Layer: nonkeratinized stratified squamous (oral cavity to the stomach) for protection; Simple Columnar (stomach to anus)

##### a. Absorption

##### b. Secretion

- i. of digestion enzymes

- ii. & mucus from goblet cells

2. Lamina propria - c.t. with lymphatic nodules (aggregations of

WBC's)

3. Muscularis mucosae – thin layer of smooth muscle

#### B. Tunica Submucosa - c.t.

1. Highly vascular

2. May contain mucous glands

3. Nerve plexus = submucosal (meissner's plexus)

C. Tunica Muscularis (= muscularis externa) – most common pattern is 2 layers of smooth muscle

1. Inner – circular
2. Outer – longitudinal

The tunica muscularis contracts by the means of Peristalsis = waves of smooth muscle contraction; controlled by a nerve plexus = myenteric (Auerbach's) plexus

D. Tunica Serosa or Tunica Adventitia:

1. serosa = simple squamous epi. + C.T. = visceral peritoneum
2. adventitia = just C.T.

III. Mouth = Oral or Buccal cavity

A. Functions

1. Receives food
2. Initiates digestion
  - a. Mastication
  - b. Saliva – has amylase which breaks down carbs
3. Initiates swallowing = deglutition

B. Histology

1. Tunica Mucosa; inner epithelial lining = nonkeratinized stratified squamous
2. Tunica Submucosa: connective tissue
3. Tunica Muscularis: facial muscles (skeletal)
4. Skin: outer

C. Tongue - has Papillae

1. Filiform - most numerous, conical; for tactile sensation (touch, temp, texture, hot, cold, etc.)
2. Fungiform – larger; rounded; has taste buds on top
3. Vallate (circumvallate) – very large; 7-12; has taste buds on the side

- D. Palate – roof of oral cavity
1. Hard palate - bone (maxilla & palatine)
  2. Soft palate = muscular arches
    - a. uvula = end of soft palate
    - b. Palatoglossal arch – anterior
    - c. Palatopharyngeal arch – posterior

Between the two arches = palatine tonsils

E. Teeth = mastication

F. Salivary glands: 3 pairs

1. Parotid - largest, on masseter, secretes serous (watery) fluid,  
fluid  
enters mouth through parotid duct.
2. Submandibular – secretes serous and mucus (thick)
3. Sublingual – secretes primary mucus; in floor of mouth

**Functions of saliva: dissolve food, moisten food, cleanse mouth, initiate chemical digestion of carbs, inhibits bacteria**

The mucosa of the oral cavity contains which of the following?

- a. Stratified cuboidal
- b. Simple squamous
- c. Nonkeratinized stratified squamous
- d. Keratinized stratified squamous
- e. Simple columnar