

Digestive System:

- **Outcome:** I can describe the organs involved with the digestive system and the anatomy of the oral cavity.

- **Drill:**

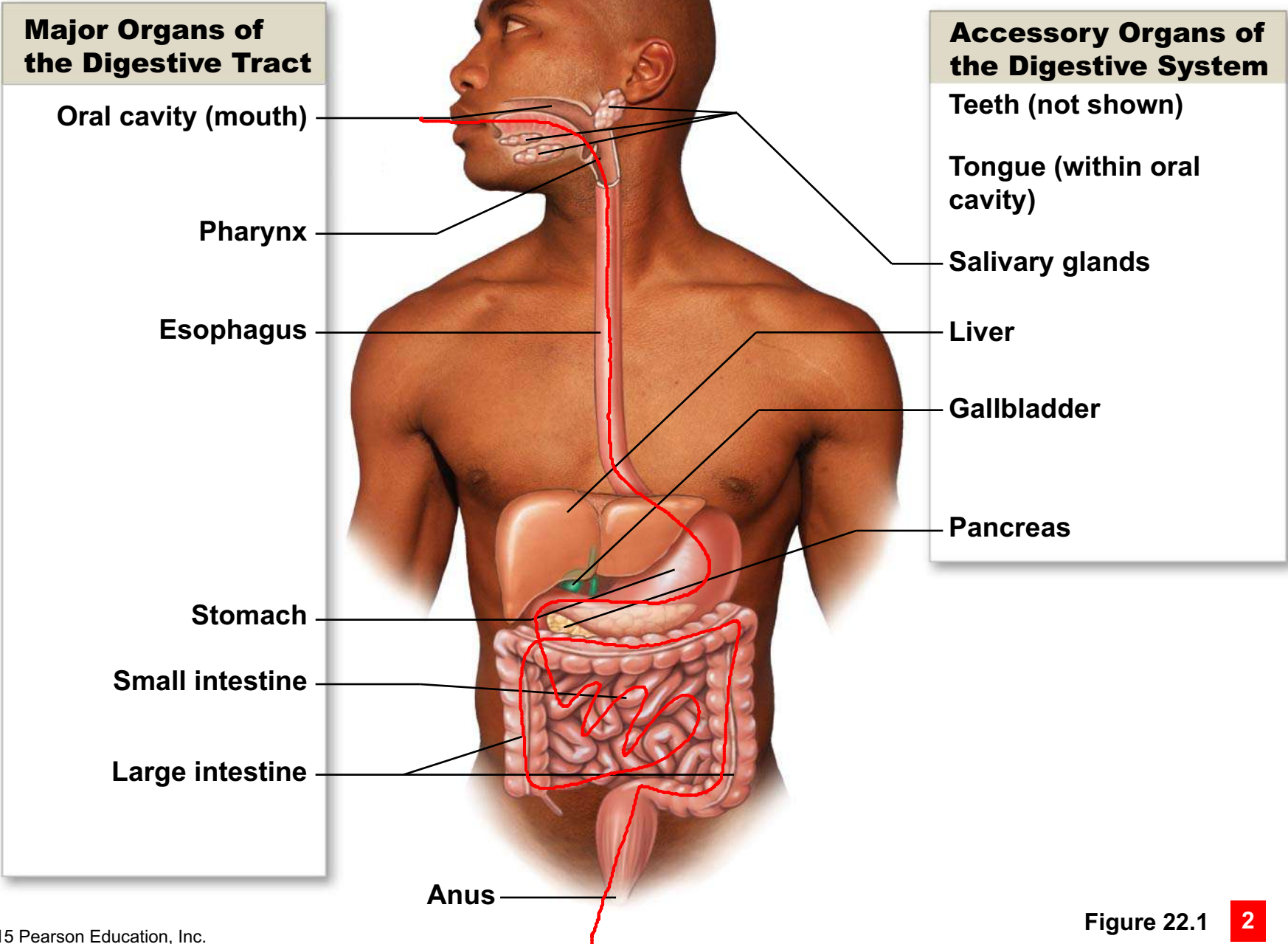
A substrate binds to an enzyme at the

active site.

Digestive System Organization

Digestive system

- Composed of:
 - **Digestive tract**
 - Also called the gastrointestinal (GI) tract or alimentary canal
 - Food passes along length from mouth to anus
 - Accessory organs
 - Secrete products into the digestive tract



Movement along the Digestive Tract

Peristalsis

- Wave of muscle contraction
- Food enters the digestive tract as a **bolus**
 - Moist, compact mass of material
- Bolus is propelled along the tract by involuntary contractions (**peristalsis**)

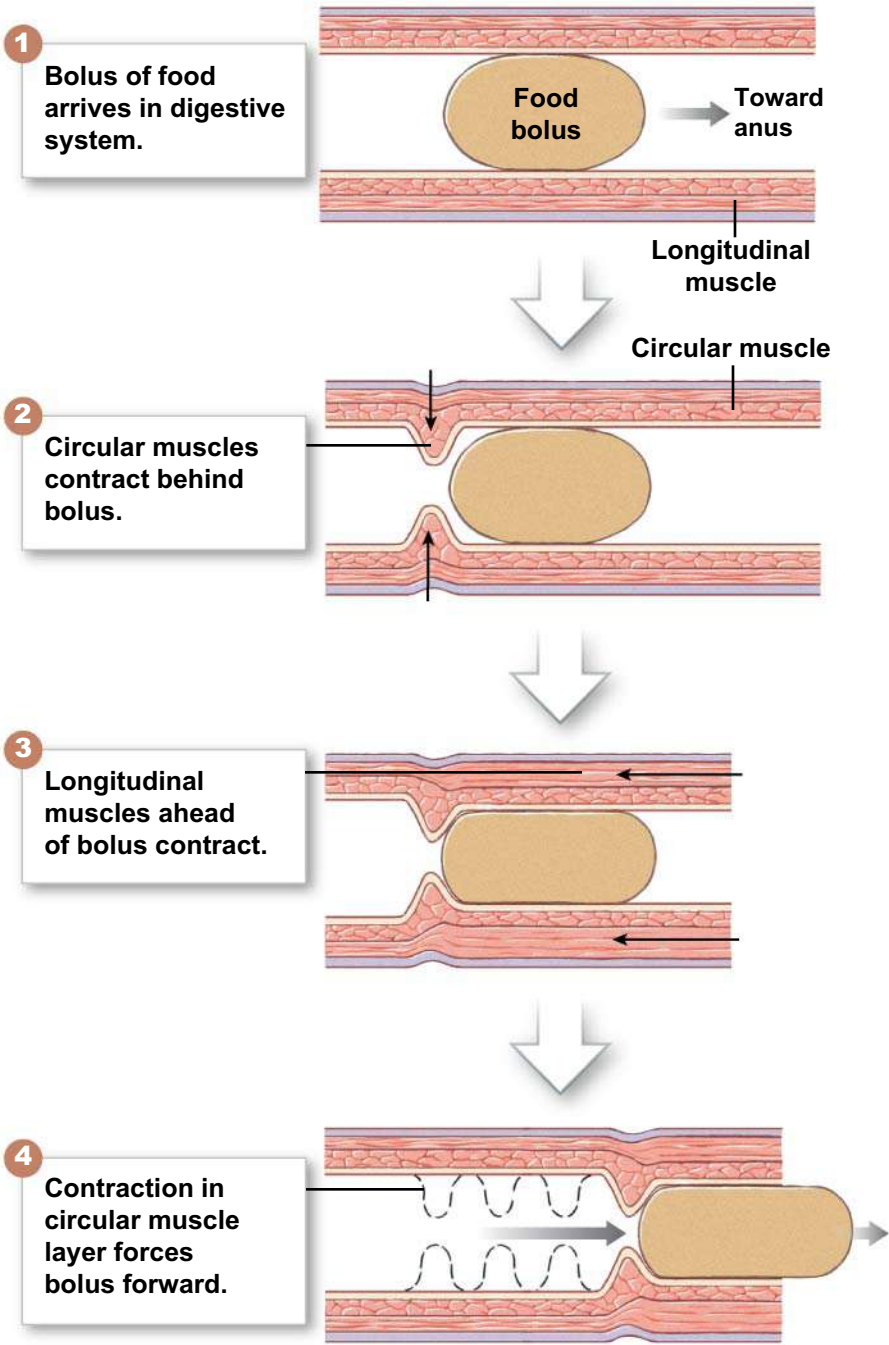


Figure 22.4 **1**

The Digestive Tract

mastication = chewing

Description and major organs

- Muscular tube about 10 m (33 ft) long
- Can be divided into regions with different functional properties and histology
- Major organs and their functions
 - **Oral cavity** (mouth)
 - Mechanical processing (with the teeth and tongue), moistening, mixing with salivary secretions
 - **Pharynx**
 - Muscular propulsion of food into the esophagus
 - **Esophagus**
 - Transport of materials to the stomach

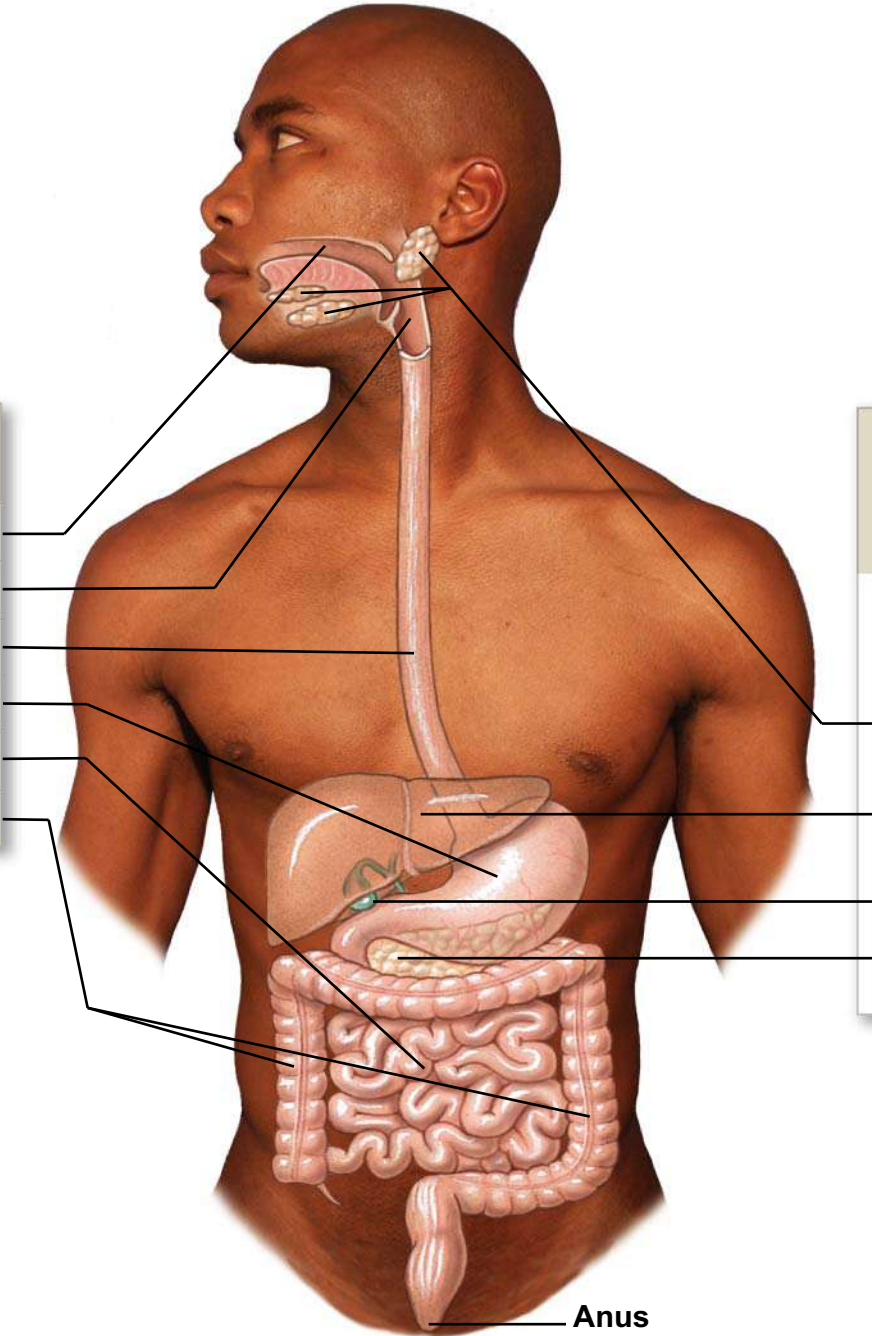
The Digestive Tract

Description and major organs (continued)

- **Stomach** *HCl → proteins*
 - Chemical breakdown and mechanical processing
- **Small intestine**
 - Enzymatic digestion and absorption
- **Large intestine**
 - Dehydration and compaction of indigestible materials *↓ water absorption*

Major Organs of the Digestive Tract	
Oral Cavity (Mouth)	
Pharynx	
Esophagus	
Stomach	
Small Intestine	
Large Intestine	

Accessory Organs of the Digestive System	
Teeth	
Tongue	
Salivary glands	
Liver	
Gallbladder	
Pancreas	



The Oral Cavity

Oral cavity (mouth)

- Lined by **oral mucosa** (stratified squamous epithelium)
 - Keratinized in areas that are exposed to severe abrasion (superior tongue surface, hard palate)
 - Thin, nonkeratinized lining on cheeks, lips, and inferior tongue surface
- Nutrients are not absorbed here
- Digestion of carbohydrates and lipids begins here

↓ salivary amylase

The Oral Cavity

Oral cavity boundaries

- **Hard palate**
 - Formed by the palatine processes of the maxillary bones and horizontal plates of the palatine bones
- **Soft palate**
 - Muscular region posterior to the hard palate

The Oral Cavity

Oral cavity boundaries (continued)

- **Anterior and lateral boundary**
 - **Cheeks**
 - Form the lateral walls of the oral cavity
 - Supported by pads of fat and the buccinator muscles
 - **Labia (lips)**
 - Form anterior boundary

The Oral Cavity

Oral cavity boundaries (continued)

- **Posterior boundary**
 - **Uvula**
 - Dangling process extending from the soft palate
 - Helps prevent food entering pharynx prematurely
 - Swings upward during swallowing to prevent food from entering the nasopharynx
 - Palatine tonsils (one located on either side of the oropharynx)

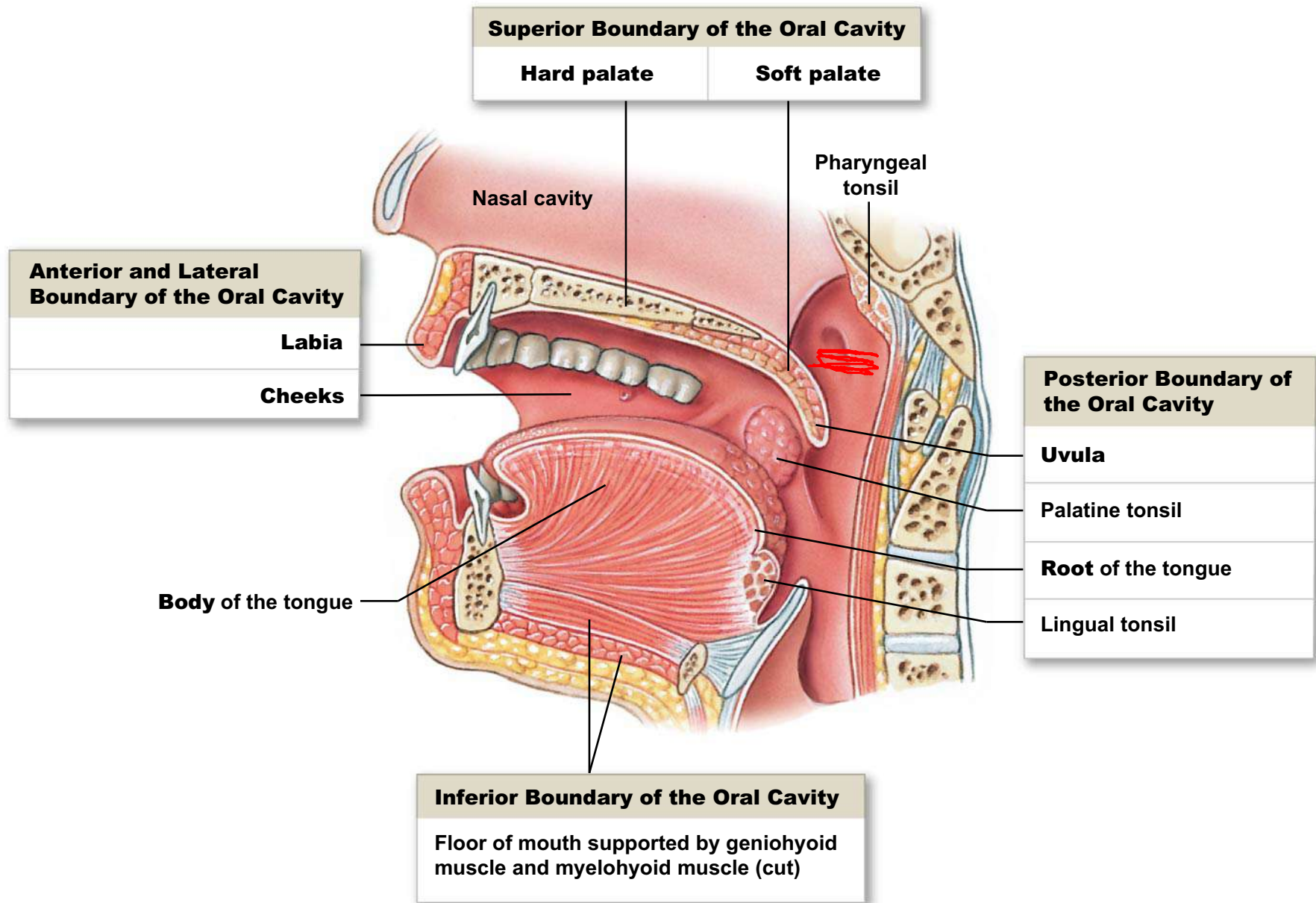
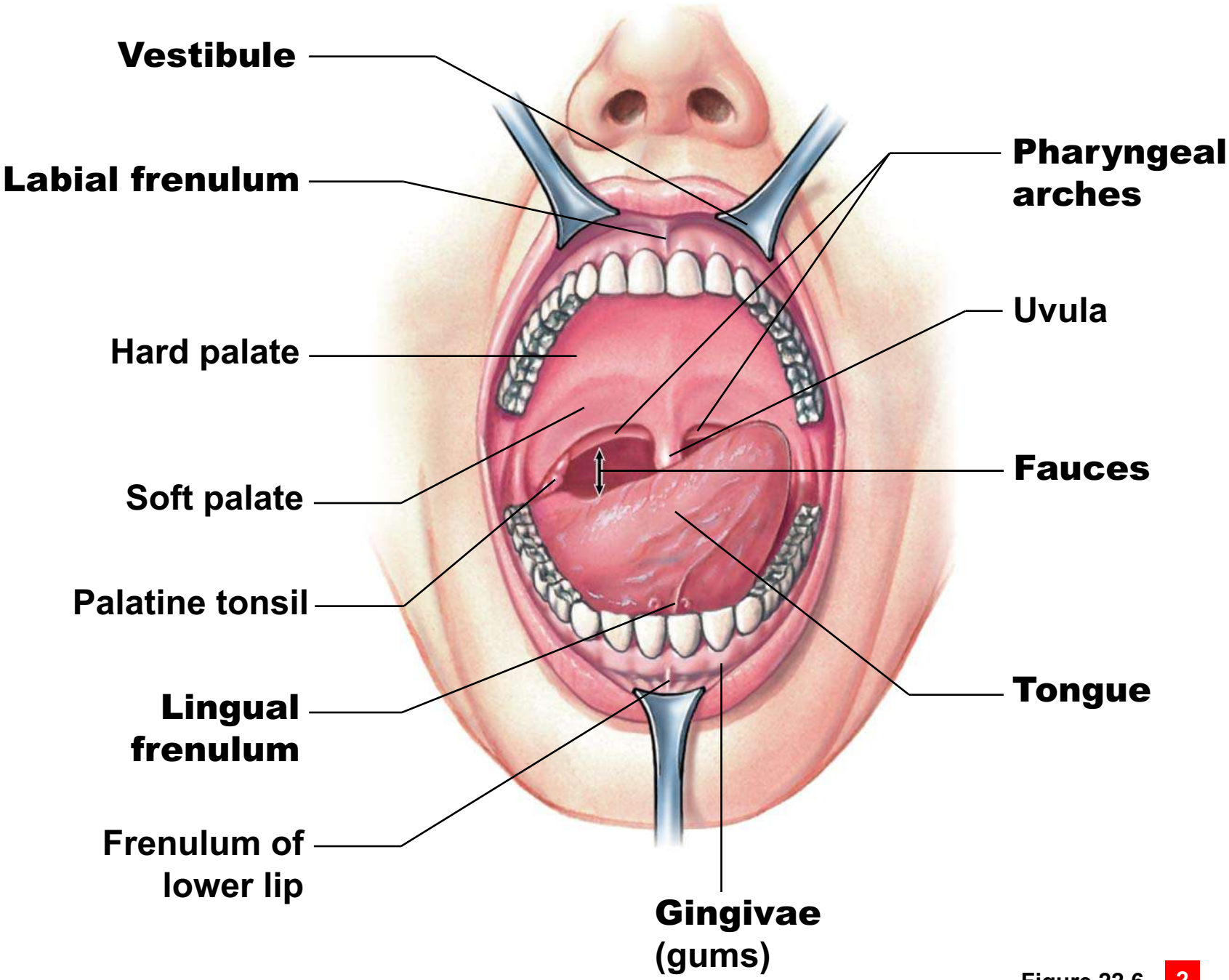


Figure 22.6 **1**



Digestive System:

- **Gizmo:**
 - www.explorelearning.com
 - Username: rajackson1
 - Password: rajackson1
 - “Digestive System”
-

Digestive System:

- **Exit Ticket:**
 - What is the difference between the labial frenulum and lingual frenulum?
-