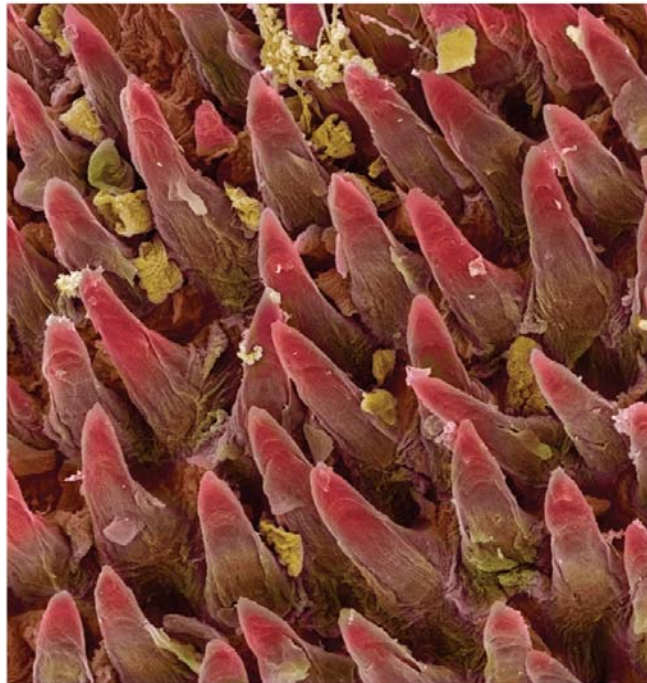


Chapter 24

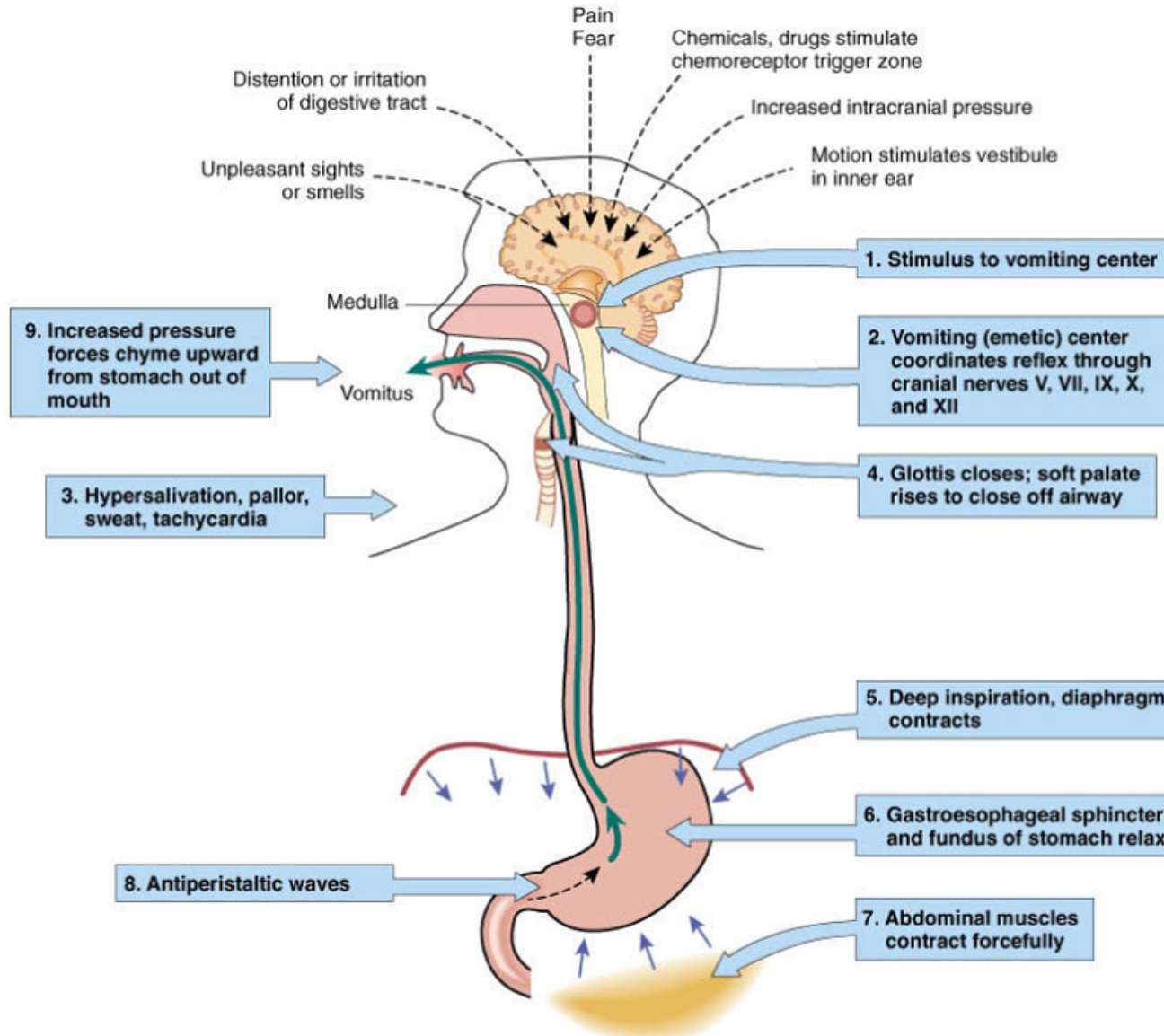
Vomiting



Vomiting (Emetic) Center Activation

- Distention or irritation in digestive tract
- Stimuli from various parts of the brain // Response to unpleasant sights or smells, ischemia
- Pain or stress
- Vestibular apparatus of inner ear (motion)
- Increased intracranial pressure // Sudden projectile vomiting without previous nausea
- Stimulation of chemoreceptor trigger zone // By drugs, toxins, chemicals

Vomiting Reflex



Vomiting Reflex Activities

- Deep inspiration
- Closing the glottis, raising the soft palate
- Ceasing respiration // Minimizes risk of aspiration of vomitus into lungs
- Relaxing the gastroesophageal sphincter

Characteristics of Vomitus

- Presence of blood - hematemesis
 - Coffee ground vomitus - brown granular material indicates action of HCl on hemoglobin
 - Hemorrhage - red blood may be in vomitus
- Yellow or green-stained vomitus // Bile from the duodenum
- Deeper brown color // May indicate content from lower intestine
- Recurrent vomiting of undigested food // Problem with gastric emptying or infection

- **vomiting** – the forceful ejection of stomach and intestinal contents (chyme) from the mouth
- **emetic center** in the medulla oblongata integrates multiple muscle actions
- vomiting induced by:
 - overstretching of the stomach or duodenum
 - chemical irritants such as alcohol and bacterial toxins
 - visceral trauma
 - intense pain or psychological and sensory stimuli
- vomiting is usually preceded by **nausea** and **retching**
- **retching** – thoracic expansion and abdominal contraction creates a pressure difference that dilates the esophagus
 - lower esophageal sphincter relaxes while the stomach and duodenum contract spasmodically
 - chyme enters esophagus but then drops back to the stomach as the stomach relaxes
 - does not get past the upper esophageal sphincter
 - usually accompanied by tachycardia, profuse salivation, and sweating

Vomiting

- **vomiting** – occurs when abdominal contractions and rising thoracic pressure force the upper esophageal sphincter to open
 - esophagus and body of the stomach relax
 - chyme is driven out of the stomach and mouth by **strong abdominal contractions** combined with **reverse peristalsis** of gastric antrum and duodenum
- **projectile vomiting** – sudden vomiting with no prior nausea or retching
 - common in infants after feeding
- **chronic vomiting** causes:
 - dangerous fluid, electrolyte, and acid-base imbalances
 - **bulimia** – eating disorder in which the tooth enamel becomes eroded by the hydrochloric acid in the chyme
 - **aspiration (inhalation)** of acid is very destructive to the respiratory tract
 - surgical anesthesia may induce nausea and must be preceded by **fasting** until the stomach and small intestine are empty