Salivary secretion, swallowing, esophageal motility

Slide3

Tonicity:is the relation between the osmotic pressure of fluid in composition to osmotic pressures of plasma

There are three types of tonicity:

1. Isotonic – the fluid osmotic pressure and the plasma osmotic pressure are the same.
2. Hypotonic – the fluid osmotic pressure is less than the plasma osmotic pressure.
3. Hypertonic – the fluid osmotic pressure is more than the plasma osmotic pressure.

* pH of saliva is important for enzymes function

Salivary glands=6glands(3 pairs)
2parotid
2sub maxillary
2sublingual
+ other glands scattered in the mucosa such as Ebner's Glands which is located in the dorsum of the tongue(secret, saliva, and digestive enzymes)

Parotid
Nerve supply; sympathetic and parasympathetic, but parasympathetic is responsible for stimulation of salivary production (Glossopharyngeal)

Sublingual
Secret glycoprotein mucin when you dissolve in water give mucus

---

Slide5

Composition of saliva
99% water
0.5% solid
0.3% organic: as enzymes(amylase,lipase,lyzozymes(which act as antibacterial),immuno-globulin a(as a defense in saliva)

Buffers:A buffer is a solution that resists changes in pH when small amounts of acid or base are added. Buffers help maintain a stable pH,to keep the ph between (6.8-7) optimum pH for digestive enzymes

---

Slide6

Ptyaline enzyme is inhibited in the stomach,only function in buccal &saliva

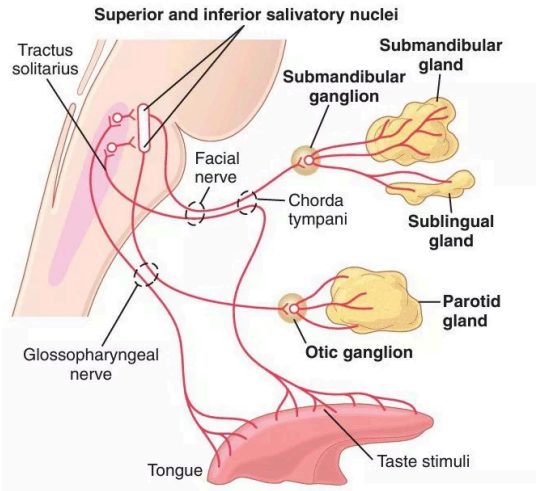
Lingual lipase digest lipids convert the triglycerides into (glycerol +3 fatty acids)

*in case of absence of saliva——>no test sensation

Slide7

Duct consists of:lumen &lining cells
Aldosterone is secreted by the adrenal glands in circulation then to the duct of salivary gland
-active reabsorption of Na^+,cl^-,$Hco3^-$,water(enter cells which line the duct)
-active secretion of k^+
Reabsorption: from the lumen to the lining cells
Secretion: from the lining cells to the lumen

*parasympathetic stimulation—> stimulate saliva production—> oxygen consumption(because of its active process)↖️



Slide8&9 &10

لتوضيح ال parasympathetic innervation

Sympathetic innervation decrease the secretion of all glands except the secretion of sweat glands

Our body systems are controlled by 2 main mechanisms:chemical,nervous

Chemical	nervous
delay onset long duration	rapid short duration

Nervous regulation :Unconditioned,conditioned
Unconditioned:doesn't require special circumstances
conditioned:acquired,need previous learning

Esophagus

Outer longitudinal

Inner circular

Esophagus

Upper portion

Striated (involuntary)

vagovagal reflex
Afferent:vagus
Efferent:vagus

Lower portion

Smooth

Local enteric reflex

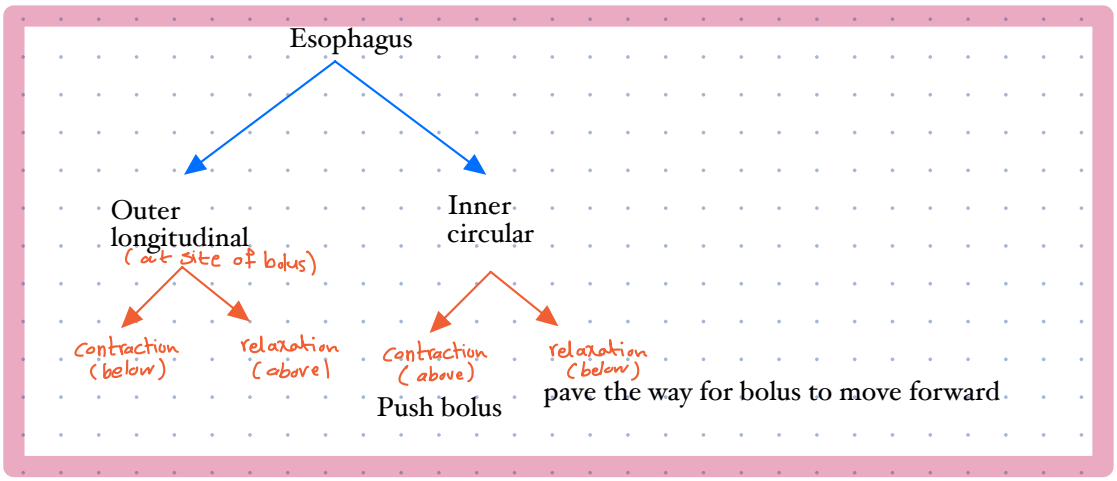
A local enteric reflex is a reflex within the enteric nervous system (ENS) that regulates digestive functions without involving the central nervous system (CNS). These reflexes control activities like peristalsis, secretion, and blood flow in the gastrointestinal (GI) tract.

Within the wall of the GIT, there is two main plexus:
-Submucosal Plexus (Meissner's Plexus): regulate the secretory function
-Myenteric Plexus (Auerbach's Plexus): located within the fibers in the muscular layer,,motor regulation

Slide17

In the esophagus at primary peristaltic waves(it travels at the rate of 2 to 4 centimeter per second, the length of the esophagus is 25 cm, so it will take from 10 to 12 second in the esophagus , but gravity may increase velocity of food bolts)

Slide26+27



Secondary peristaltic waves

Relaxation of the lower esophageal sphincter occur due to the effect of VIP(vasoactive intestinal peptide)&NO(nitric oxide)

Slide30

لجنة الطب والجراحة

بالتوفيق،بارك الله في وقتكم و إنجازكم وهمتكم🩶