

Organization of the gastrointestinal tract, control of salivary secretions and deglutition

By

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ORGANIZATION OF THE GASTROINTESTINAL TRACT

PARTS OF THE GIT: mouth to anus

MADE UP OF 4 LAYERS

MUCOSA : (epithelium, lamina propria, muscularis mucosa) innermost layer

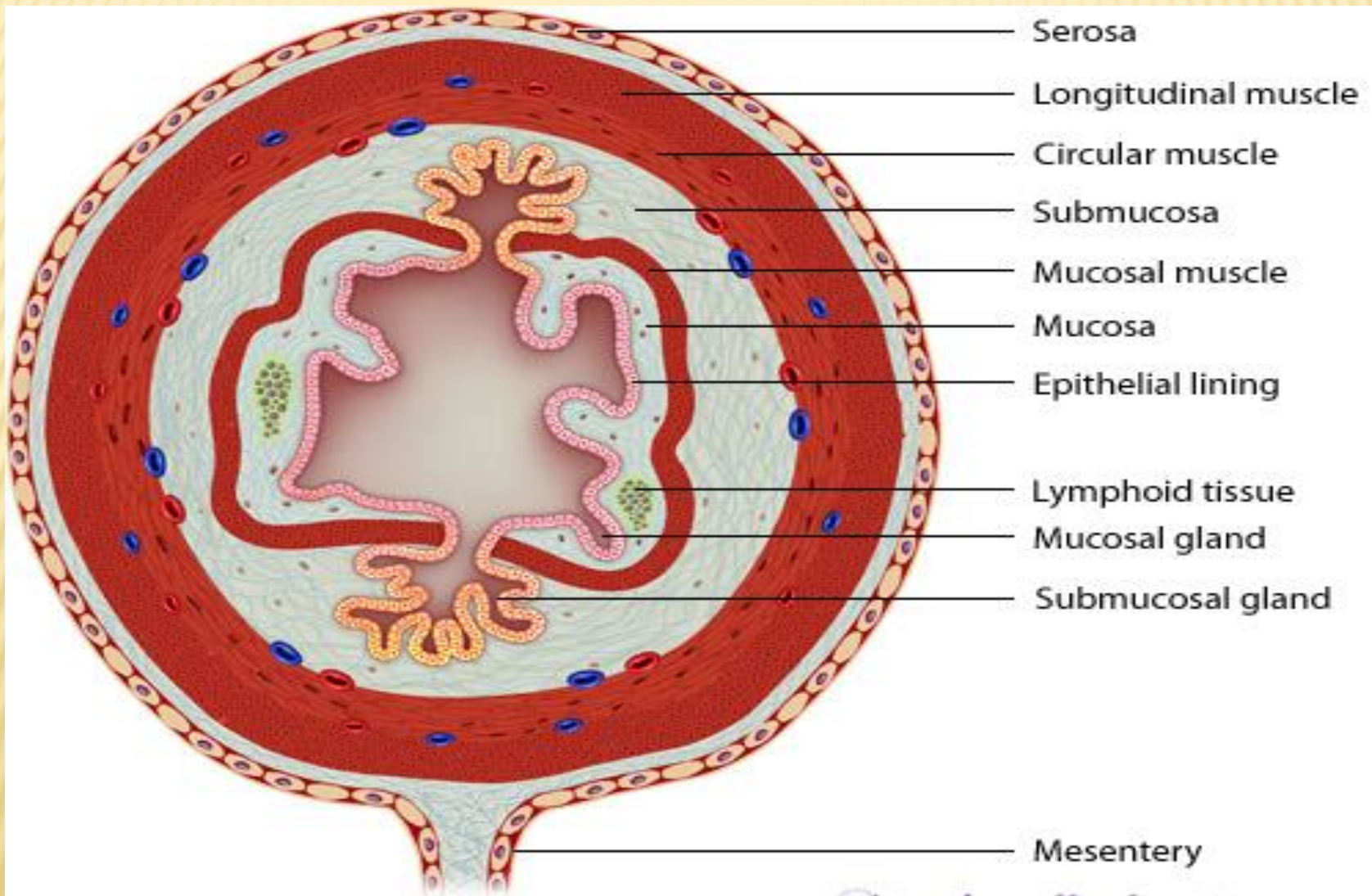
SUBMUCOSA :made up of elastic fibres that maintain the shape the git, blood vessels for absorption and lymphatics.

MUSCLE LAYER (MUSCULARIS) made up of circular and longitudinal smooth muscles.

SEROSA : outermost covering,

AUTONOMIC CONTROL OF THE GIT

LAYERS OF GIT



SALIVA

- × **Saliva**
- × 1500mL per day
- × pH 8.0 under active secretion
- × Constituent: Lingual lipase, Salivary alpha amylase, Mucin, IgA, Lysozyme

- × **Functions of saliva**
- × Facilitate swallowing
- × Keep mouth moist
- × Solvents for molecules that stimulate taste bud
- × Aids speech
- × Facilitate movement of lips
- × Keep mouth & teeth clean
- × Anti-bacteria action;
- × Neutralize gastric acid

SALIVARY GLANDS

- × **Salivary Glands**
- × Sgs – exocrine glands with duct produce saliva
- × Acinar – secretory cells and ducts

- × **Parotid gland** – Pair (largest) - posterior to mandibular ramus
- ×
- × **Submandibular gland** (Pair) beneath lower jaw.
- ×
- × **Sublingual gland** (Pair)
- × Location- inferior to the tongue and anterior to the submandibular.
- ×
- × **Minor salivary glands**
- × 800 – 1000 msg throughout the oral cavity
- × Secretion – mucus except von ebner's gland

NERVE SUPPLY TO THE SG (ANS)

- ✘ **Parasympathetic nerve** --- copious flow of saliva
- ✘ Sight, taste, smell and thought of food stimulate salivary secretion
- ✘ Parasympathetic nerve releases acetylcholine and substance P

- ✘ **Sympathetic nerve** – small flow of the saliva or no flow at all.
- ✘ Releases norepinephrine.

- ✘ **Clinical correlate:** Sialadenitis

DEGLUTITION OR SWALLOWING

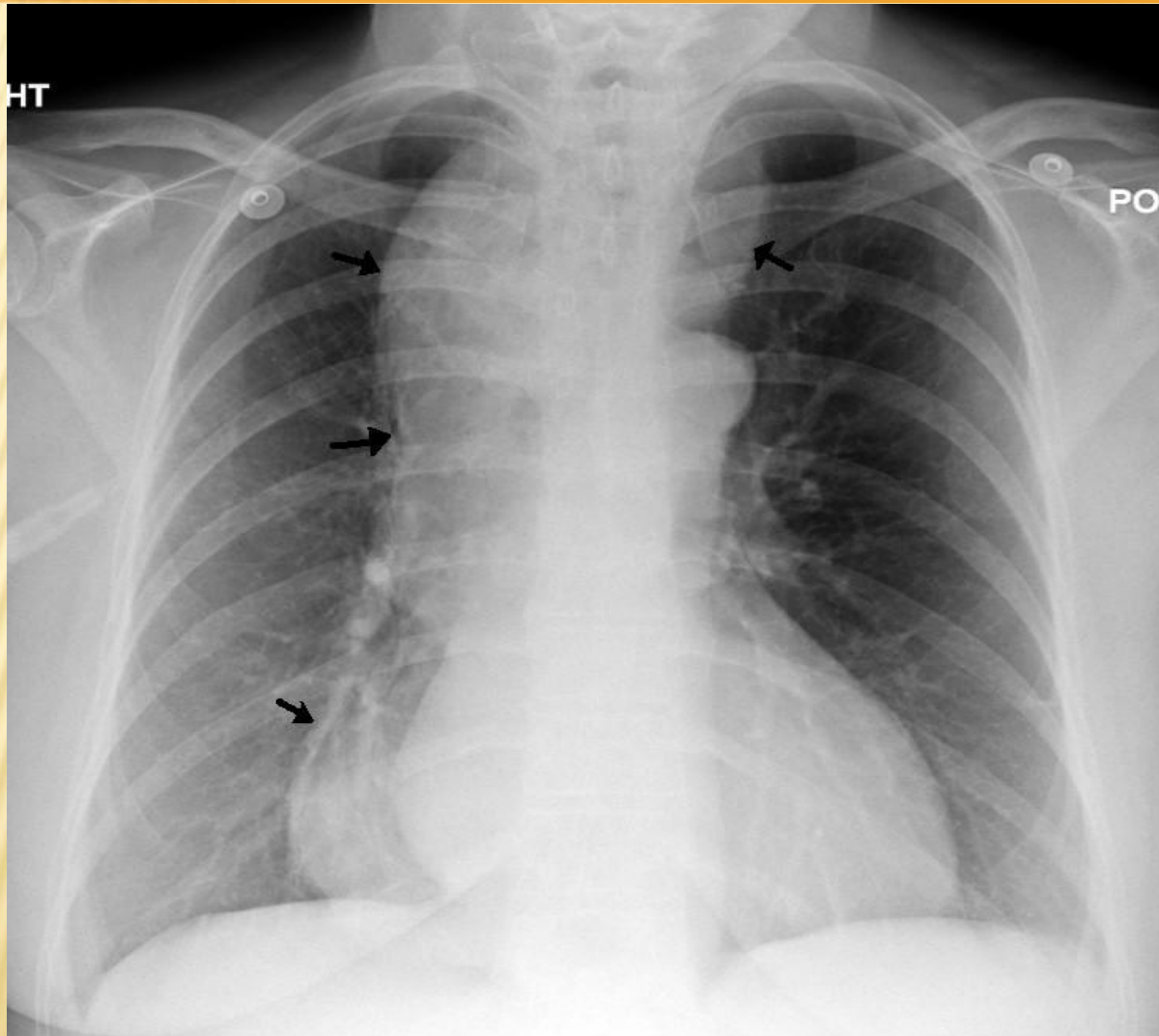
- a. Oral
- b. Pharyngeal
- c. Esophageal

A. Oral/Voluntary stage

- ✘ Moistening and bolus formation
- ✘ Mastication : Food is crushed and grinded by the teeth.
- ✘ Muscles of mastication

- ✘ Temporomandibular joint between mandible and temporal bone of the skull.
- ✘ Movement of bolus

ACHALASIA



A chest X-ray showing achalasia (arrows point to the outline of the massively dilated esophagus)

DISORDERS OF SWALLOWING

- ✘ ii. Gastroesophageal reflux disease: LES incompetence, reflux of gastric content to the esophagus. Cause: heartburn, esophagitis, ulceration and scarring of the esophageal wall . Both intrinsic and extrinsic smooth muscle sphincters are weak. Treatment : Inhibition of acid secretion using H₂ receptor blockers or omeprazole, surgical treatment where portion of the fundus is wrapped round the lower esophagus
- ✘ iii. Aerophageal and intestinal gas : Air swallowed during eating and drinking. Much of the gases pass to the colon and acted on by bacteria to produce H₂S and methane gas from CHO and other food products. The O₂ in the gas may be absorbed. Flatus release thru anus. The smell is due to the H₂S. Abdominal discomfort (rumbling noises)