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| **Name:** |
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| 2-A |
| **Basic Science Question:** |
| What is the anatomy and physiology of salivary glands? |
| **Report:** |
| Saliva in the human body is mostly produced by 3 pairs of glands known as the major salivary glands. The Parotid gland, which is located between the mastoid processes and the Ramus of the Mandible on the lateral aspects of the face. Its salivary secretions travel through the partoid duct, pierce the Buccinator muscle and enter the oral cavity on the palatal side of the 2nd Maxillary molars. The submandibular gland is located within submandibular fossa of the Mandible. Most of this gland lies deep over the floor of the mouth and the mylohyoid muscle, but it also extends inferiorly under the inner surface of the angle of the mandible. It empties its sectretions into the submandibular duct across the floor of the mouth and they exit through the sublingual papilla, adjascent to the lingual frenulum. The subligual gland is located between the connective tissue of the floor of the mouth and the mylohyoid muscle. Its secretions empty near the sublingual papilla, as well as directly into the oral mucosa.  There are also between 600 to 1,000 minor salivary glands located throughout the oral submucosa. These are located on the buccal, lingual, palatal, incisive and labial surfaces of the mouth and secreate directly into the oral mucosa. The main physiological role of the salivary glands is to produce and secrete saliva. The components of saliva consist mainly of water, electrolytes including potassium, bicarbonate, calcium, sodium, chloride, phospates, and organic molecules such as proteins, glycoproteins, lipids, glucose, and urea. (Varga. 2015) Most saliva is produced by the three major glands and it varies from 0.5-1.5 L per day. However, “Minor salivary glands play a crucial role in protective mechanisms in oral mucosa and enamel surface.” (Paula et al. 2017) These protective mechanism include lubrication of the mucosal surfaces, secretion of salivary mucins, and the release of growth factors. There are also antimicrobial compounds like lysozymes, IgA, lactoferrins, etc. Saliva also aids in digestion through the release of salivary amylase, which begin the breakdown of startch in the mouth. Lastly, saliva also assits in the digestion of the lipids present in breast milk during the first prenatal months. In conclusion, normal physiologic function of the salivary glands is essential for maintaining proper oral health and hygiene. |
| **References:** |
| Ellis, Harold. “Anatomy of the Salivary Glands.” Surgery (Oxford), vol. 30, no. 11, 2012, pp. 569–572.  Paula, Fernanda De, et al. “Overview of Human Salivary Glands: Highlights of Morphology and Developing Processes.” *The Anatomical Record*, vol. 300, no. 7, 2017, pp. 1180–1188.  Schuenke, Michael, et al. Anatomy for Dental Medicine. 2nd ed., Thieme Medical Publishers, 2020, pp. 214-215.  Varga, Gábor. “Physiology of the Salivary Glands.” *Surgery (Oxford)*, vol. 33, no. 12, 2015, pp. 581–586. |