Name: Babalola Aanuoluwapo

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ANATOMY OF THE TONGUE

Introduction

The tongue is a unique flexible organ located in the oral cavity that not only facilitates the perception of gustatory stimuli but also play important roles in mastication. The tongue begins to develop on the fourth week of embryonic devolopment

Function

* The presence of taste buds on the dorsal surface of the tongue helps it to sense particular classes of taste
* The intrinsic muscles of the tongue enable the shaping of the tongue which facilitates speech
* The tongue also plays an important role in speaking

Nerve supply

* Sensory is supplied by the mucosa of almost two-thirds of the tongue is from the lingual branch
* The facial nerve(NVII) is the nerve of the second pharyngeal arch, it’s chorda tympani branch supplies the taste buds in the anterior two- thirds of the tongue except for the valitae papillae
* The nerve of the third pharyngeal arch innervation is supplemented by the nerve of the 4th pharyngeal arch-the vagus nerve
* The vallate papillae along with mucosa of the posterior part of the tongue pass afferent stimuli to the glossopharyngeal nerve(CNIX)
* All muscles of the tongue are supplied by the hypoglossal except the palataglossis which is supplied by the pharyngeal plexus.

APPLIED ANATOMY OF THE TONGUE

* [Thrush](https://www.webmd.com/oral-health/guide/dental-health-thrush) (candidiasis): *Candida albicans* (a yeast) grows over the surface of the mouth and tongue. Thrush can occur in almost anyone, but it occurs more often in people taking steroids or with suppressed immune systems, the very young, and the elderly.
* [Oral cancer](https://www.webmd.com/oral-health/guide/oral-cancer): A growth or ulcer appears on the tongue and grows steadily. Oral cancer is more common in people who smoke and/or drink alcohol heavily.
* Macroglossia (big tongue): This can be broken down into various categories based on the cause. These include congenital, inflammatory, traumatic, cancerous, and metabolic causes. Thyroid disease, lymphangiomas, and congenital abnormalities are among some of the causes of an enlarged tongue.
* [Geographic tongue](https://www.webmd.com/oral-health/tongue-problem-basics-sore-or-discolored-tongue-and-tongue-bumps): Ridges and colored spots migrate over the surface of the tongue, periodically changing its appearance. Geographic tongue is a harmless condition.
* [Burning mouth/burning tongue syndrome](https://www.webmd.com/oral-health/burning-mouth-syndrome-mefref): a relatively common problem. The tongue feels burned or scalded, or strange tastes or sensations develop. Apparently harmless, burning mouth syndrome may be caused by a mild nerve problem.

2. DISCUSS AIR SINUSES

The paranasal sinuses are air-filled extensions of the respiratory part of the nasal cavity. There are four paired sinuses, named according to the bone in which they are located; maxillary, frontal, sphenoid and ethmoid.

The function of the sinuses is not clear. It is thought that they may contribute to the humidifying of the inspired air. They also reduce the weight of the skull.

Sinuses are formed in childhood by the nasal cavity eroding into surrounding bone. As they are outgrowths of the nasal cavity, they all drain back into it – openings to the paranasal sinuses are found on the roof and lateral walls of the nasal cavity. The inner surface is lined by a respiratory mucosa

Fig 1.1 – Diagram showing the location of the paranasal sinuses.1 – Frontal sinuses2 – Ethmoid sinuses3 – Sphenoid sinuses4 – Maxillary sinuses

Frontal Sinuses: These are the most superior in location, found under the forehead. The frontal sinuses are variable in size, but always triangular-shaped. They drain into the nasal cavity via the frontonasal duct, which opens out at the hiatus semilunaris on the lateral wall.

Sphenoid Sinuses:  The sphenoid sinuses also lie relatively superiorly, at the level of the spheno-ethmodial recess.  They are found more posteriorly, and are related superiorly and laterally to the cranial cavity. The sphenoid sinuses drain out onto the roof of the nasal cavity.  The relationships of this sinus are of clinical importance – the pituitary gland can be surgically accessed via passing through the nasal roof, into the sphenoid sinus and through the sphenoid bone.

Ethmoidal Sinuses: There are three ethmoidal sinuses; anterior, middle and posterior. They empty into the nasal cavity at different places:

* Anterior – Hiatus semilunaris
* Middle – Ethmoid bulla
* Posterior – Superior meatus

Maxillary Sinuses: The largest of the sinuses. It is located laterally and slightly inferiorly to the nasal cavities. It drains into the nasal cavity at the hiatus semilunaris, underneath the frontal sinus opening. This is a potential pathway for spread of infection – fluid draining from the frontal sinus can enter the maxillary sinus.