

# Oral Cavity

The **oral cavity** is specialized for sensory discrimination ([taste](#)), mechanical processing (chewing), initial lubrication and enzymatic digestion ([salivary secretion](#)), and immune surveillance ([tonsils](#)), with a protective [stratified squamous epithelium](#) throughout.

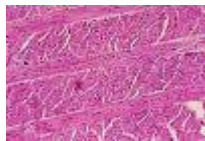
Clinically, the oral cavity provides an easy opportunity for revealing examination of a mucosal surface ("Please open your mouth and say AH").

The oral **mucosa** varies from site to site within the oral cavity, but everywhere the epithelium is protective stratified squamous. This epithelium is partially keratinized on gums and hard [palate](#) and on [filiform papillae](#) of [tongue](#); it is non-keratinized elsewhere. [Lamina propria](#) is unspecialized. A [muscularis mucosae](#) is not present.

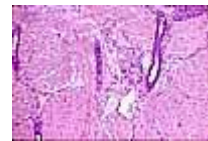


## Tongue

The mucosal surface of the tongue, the part you can see when the patient says, "AH", displays several specialized epithelial variations, including papillae of various shapes. Variations in gross appearance can be clinically revealing. In addition to its clinical value as a readily-observed "window" onto a mucosal surface, the tongue also provides excellent opportunities for learning histology, with examples of all the basic tissue types appearing in a variety of forms.



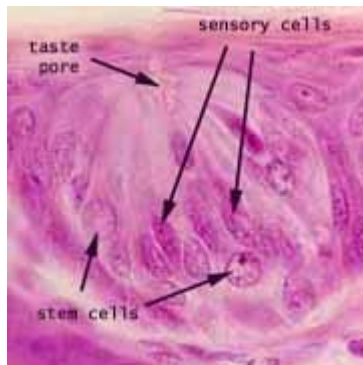
The bulk of the tongue consists of [striated muscle fibers](#) arranged in bundles along three mutually perpendicular axes, so any plane section is likely to reveal fibers cut both transversely and longitudinally. Bundles of myelinated [nerve fibers](#) are usually easy to find within the muscle of the tongue.



The surface of the tongue is covered by [stratified squamous epithelium](#), modified on the upper surface into **filiform papillae**. These papillae, which comprise the whitish "fuzz" over most of the lingual surface, have keratinized tips (hence the whitish color) and provide roughness which contributes to tongue's food-handling ability. (The name filiform means file-like. The resemblance to a



file is obvious if you've ever felt a cat's tongue, which has these papillae heavily keratinized.)



Scattered among the filiform papillae are occasional **fungiform papilla**.

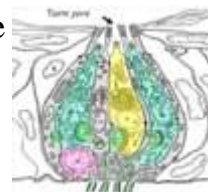
[Taste buds](#) are found on fungiform papillae.



**Taste buds** are oval clusters of elongated cells which extend across the thickness of the epithelium, from the [lamina propria](#) to the taste pore at the surface.



Within a taste bud, each [sensory cell](#) has microvilli in the taste pore at its apical end. These allow contact with the external medium. At the basal end, each sensory cell makes synaptic contact with fibers of the facial nerve (CN VII) or glossopharyngeal nerve (CN IX).



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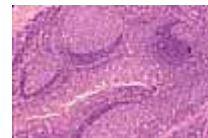
## Tonsils

**Tonsils** are [lymphoid structures](#) located in the mucosa of the tongue, palate, and pharynx which provide sites where [immune surveillance](#) cells ([lymphocytes](#)) can encounter foreign antigens enter the body through the mouth or nose.

Each tonsil consists of an epithelial crypt (invaginated pocket) surrounded by dense clusters of lymph nodules, each with a germinal center where [lymphocytes](#) proliferate. The nodules are embedded in a mass of diffuse lymphoid tissue that consists of lymphocytes migrating to and from the germinal centers.



The epithelium lining the crypt corresponds with that on the adjacent surface -- stratified squamous in the tongue and palate, or [pseudostratified columnar](#) in the pharynx. In either case, the epithelium may be heavily infiltrated with [lymphocytes](#), and the crypt may be filled with lymphocytes and other debris.



The [lymphoid tissue](#) of the tonsils is similar to that of [Peyer's patches](#) and [appendix](#). These structures, together with other more diffuse lymphoid tissue, constitute the Gut-Associated Lymphoid Tissues, or **GALT**.

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## Palate

The **hard palate** has a partially-keratinized epithelium, much of which is firmly attached by a fibrous submucosa to underlying [bone](#).



The **soft palate** has a non-keratinized epithelium, with underlying [minor salivary glands](#) and [striated muscle](#). The largest [tonsils](#) (the palatine tonsils) are embedded in the sides of the soft palate.

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