

HISTOLOGY OF THE ORGANS OF SMELL AND TASTE

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The olfactory mucosa is a pseudostratified ciliated columnar epithelium located in the superior-most region of the nasal cavity, and contains bipolar olfactory cells whose stereocilia are embedded in mucus. Chemicals which dissolve in the mucus trigger responses in these cilia which initiate a nervous impulse, interpreted in the brain as an odor.

Supporting cells surround the olfactory cells. Mucus-producing Bowman's glands are embedded in the lamina propria. This connective tissue is richly vascularized. Some slides include portions of the cribriform plate of the ethmoid bone.

I. Olfactory epithelium 100x: Slide 12. (H 1042) (MF 9th, page 237, 249)

olfactory epithelium:

- olfactory cells (with deep nuclei)
- stereocilia
- supportive cells (with superficial nuclei)
- surface mucus
(looks like a line above surface)

lamina propria:

- glands of Bowman (serous)
- ducts of these glands (simple cuboid)
- arterioles
- venules
- [The ethmoid bone is present on some slides, appearing blue.]

Tongue, taste buds, rabbit Slide 13: (70771) (MF 9th, page 157)

Taste transducing cells are located in taste buds which line the sides of papillae located on the tongue. Microvilli on the surface of the transducing cells react with sweet, salty, acidic or bitter substances to generate a nervous impulse, interpreted in the brain with its specific taste. (Remember that flavor combines taste and odor.) Make two illustrations on the same page:

II. Taste Bud Papillae, 100x:

- fungiform papilla
- stratified squamous epithelium
- taste buds
- taste pore
- excretory duct [fr. serous alveoli]
- nerve tracts
- striated muscle
- circular furrow ("trench" between papillae)

III. A Taste Bud, 400x: (MF 9th, page 159)

- taste buds
- gustatory cells
- taste pore
- taste hairs (microvilli, visible?)
- lingual mucosa (epithelium surrounds buds)
- lamina propria