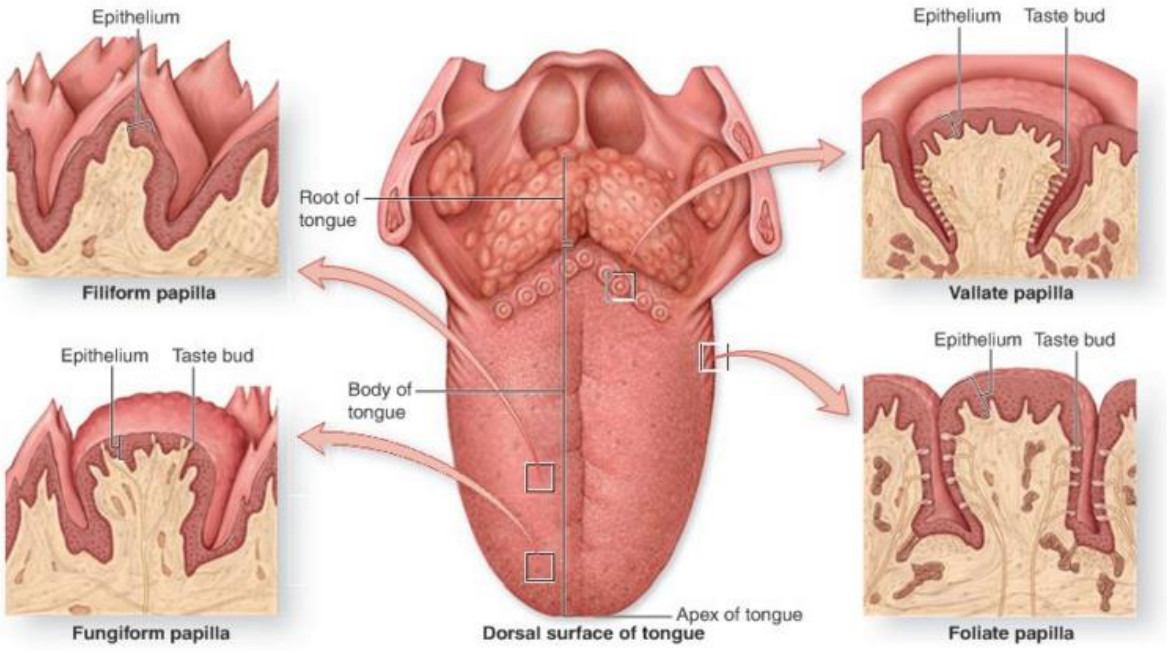


Image taken from Mescher, Junqueira's Basic Histology: Text and Atlas, Twelfth Edition.

Taste buds

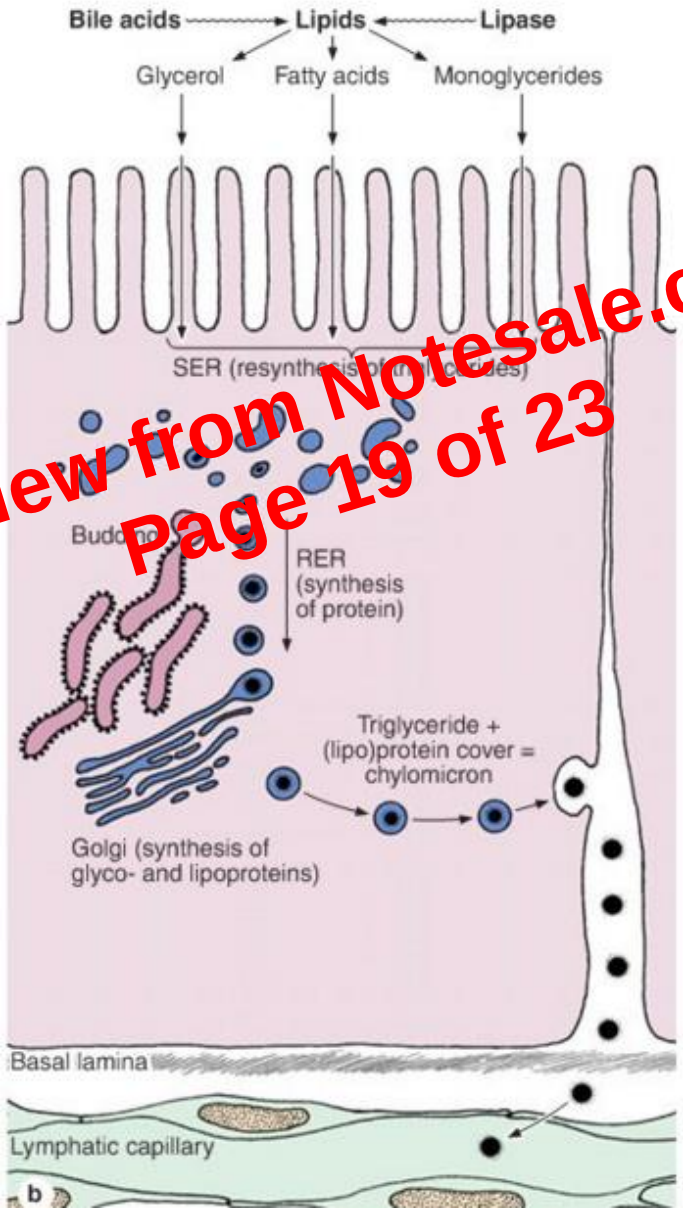
- Ovoid structures within the stratified epithelium of the tongue and oral mucosa
- Half are gustatory (taste cells), other cells are supportive cells, immature cells and basal stem cells
- Gustatory cells have numerous microvilli that project through an opening known as the taste pore
    - Cell surface taste receptors detect food particles
- Special sensory innervation of these cells allows taste
- Five broad categories of tastants
    - Salt (metal ions)
    - Sour (H+ ions; acid)
    - Sweet (sugars and related organic compounds)
    - Bitter (alkaloids and certain toxins)
    - Umami (savoury) (certain amino acids such as glutamate)
- Conscious perception of tastes requires olfactory and other senstions in addition to taste bud activity

    - Mucous neck cells
    - Parietal cells
- Base contains parietal, chief and ECF cells

Cells of the gastric glands

- Mucous neck cells
    - Present in the neck of glands
    - Mucous secretion less alkaline and different composition to surface ones
- Parietal cells
    - Few in base, mostly in upper half of the gland
    - Have circular invaginations in the apical membrane, forming an intracellular canniculus
    - Secrete HCl and intrinsic factor (for B12 uptake in the ileum)
    - Abundant mitochondria and microvilli
    - Activity stimulated by ACh, gastrin, histamine
- Chief cells
    - Predominately in the lower region of the gland
    - Cytoplasmic granules containing inactive pepsinogen
    - Pepsinogen rapidly converted to pepsin in acid pH; active pH<5
    - Also produce lipase and leptin
- Enteroendocrine cells
    - Secrete variety of hormones
        - Ghrelin (throughout stomach) – increased sense of hunger
        - Gastrin (pylorus) – stimulates gastric acid secretion
        - Somatostatin (pylorus) – local inhibition of other enteroendocrine cells
    - In the fundus, located in basal lamina of the gland and primarily secrete 5HT
    - In the lower body and pylorus, located in contact with the stomach lumen as G cells, secreting gastrin (stimulates acid production by parietal cells and trophic effect on mucosa)

    - Alkaline fluid produced neutralises the chyme entering from the pylorus
    - Protects the mucosa from the acid and provides pH for pancreatic enzymes
- In the ileum, the lamina propria and submucosa contain Payer's patches, lymphoid nodule aggregates (MALT)
- Muscularis is well developed with an internal circular and external longitudinal layer
- Covered by thin serosa with mesothelium



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