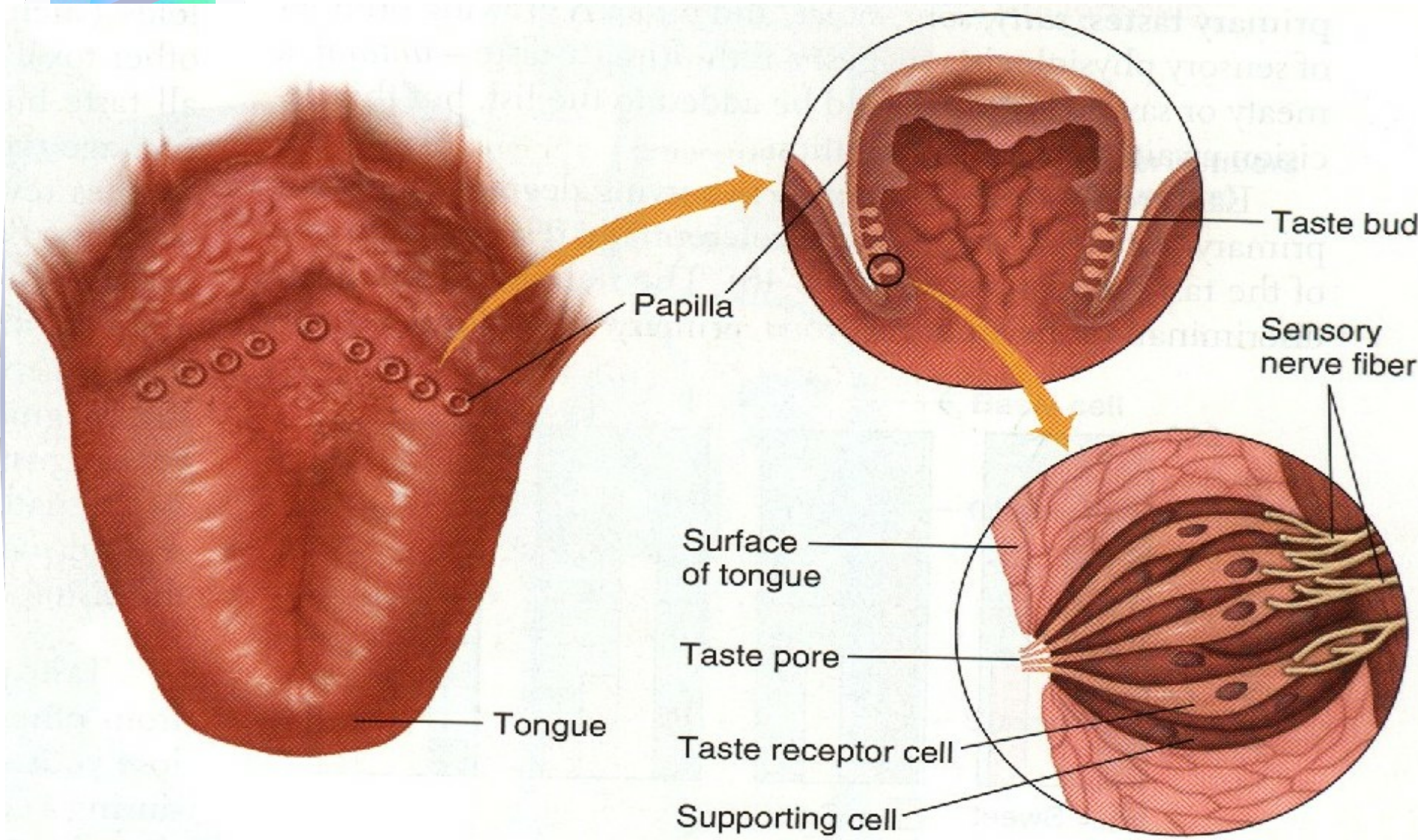
Taste

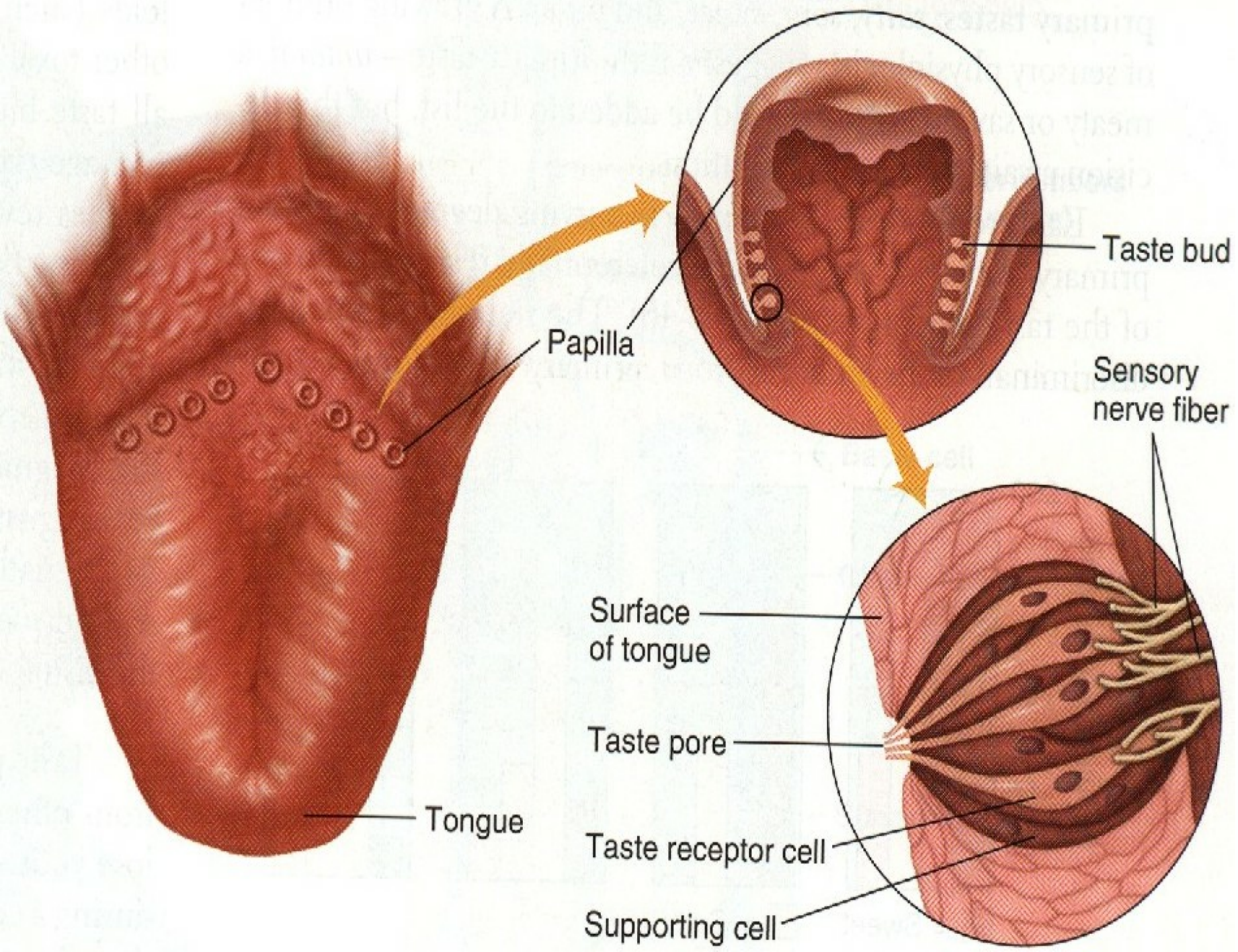
Taste bud is specialised receptors on the sides of the papilla, in the oral cavity but mainly on the tongue, some on the palate



Taste Receptors

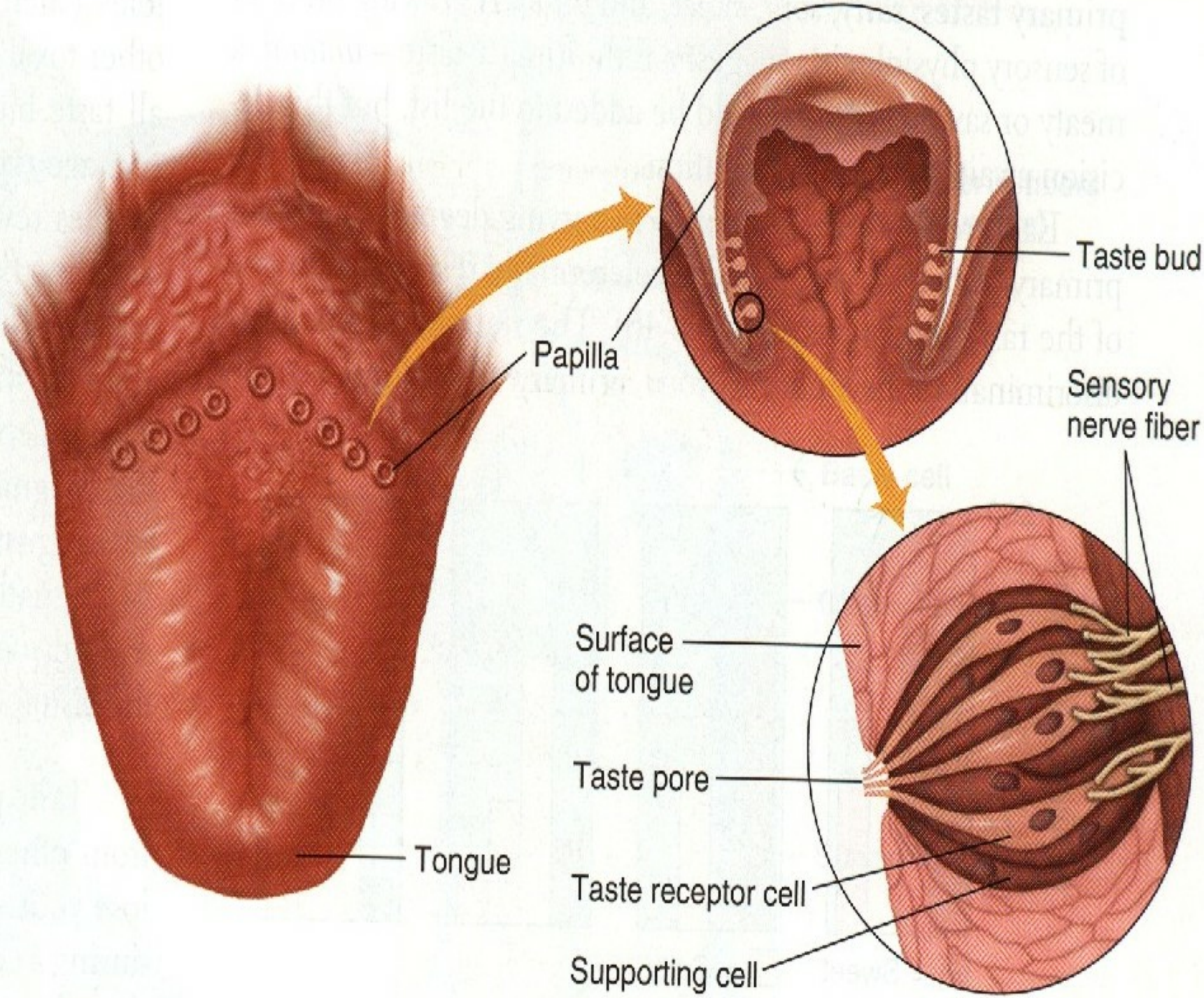
Types of papillae (projection)

- **Filiform**
- **Fungiform**
- **Circumvallate**
- **No taste buds on the mid dorsum of the tongue**


Taste bud
Papilla
Sensory nerve fiber
Surface of tongue
Taste pore
Taste receptor cell
Supporting cell
Tongue

Anatomy

- **Taste bud : gustatory cells with microvilli (gustatory hair)**
- **They are receptors cells with cilia projected through taste pore in between there are supporting cells**


Taste bud
Papilla
Sensory nerve fiber
Surface of tongue
Taste pore
Taste receptor cell
Supporting cell
Tongue

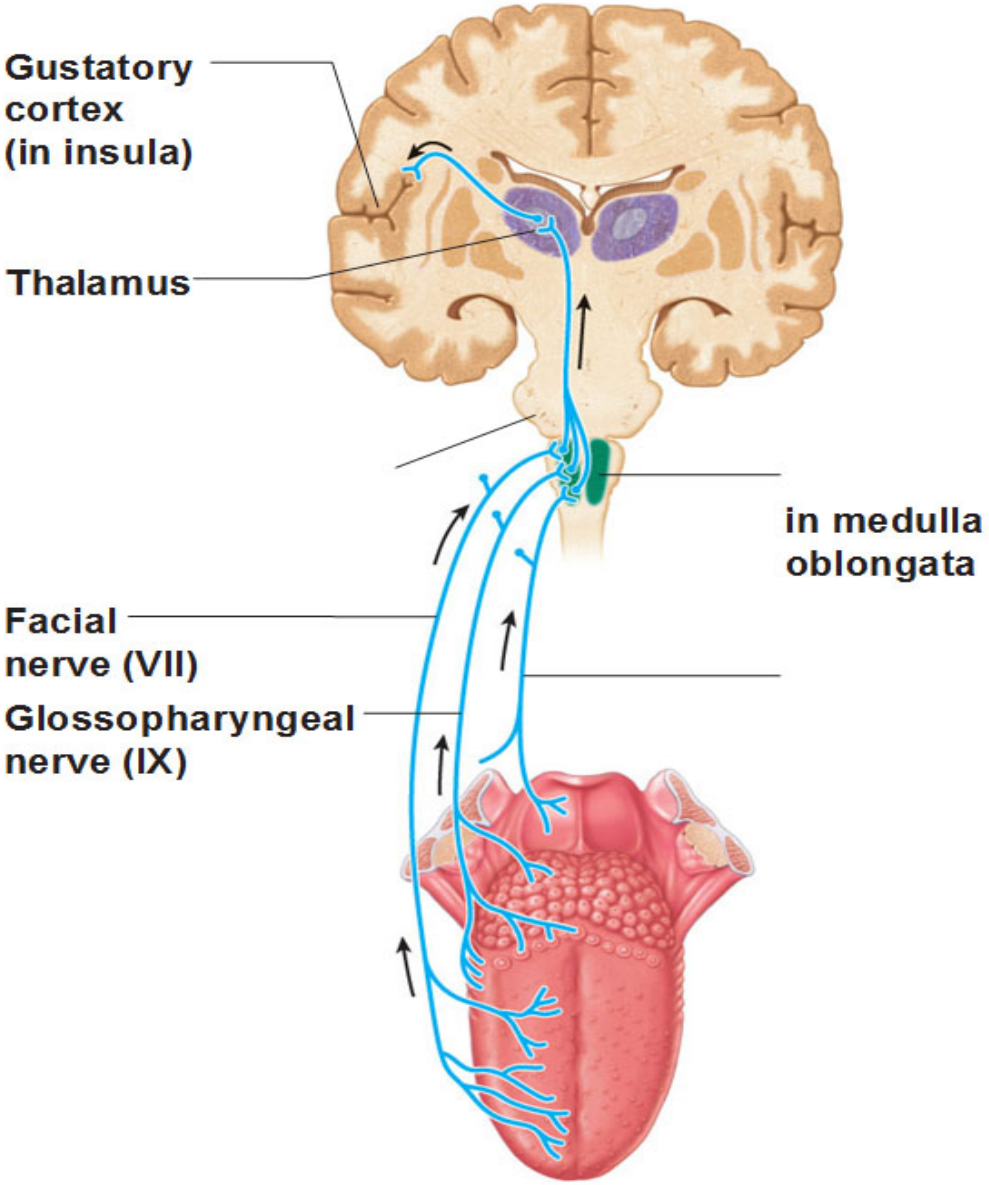
Taste bud:

- When stimulated produce nerve impulse to specific brain area through:
- Anterior 2/3 of the tongue »»»»» VII
- Posterior 1/3 of the tongue »»»»» IX
- Receptors on the palate, pharynx, epiglottis »»»»» X

Taste pathway

- **First order neurone:**
  - **Taste fibres from the three cranials nerves form tractus solitarius »»»»» end in the nucleus of tractus solitarius (medulla)**
- **Second order neurone:**
  - **From TS cross the midline to ascend in the medial lemniscus to the thalamus**

Gustatory Pathway



- **Third order neuron:**
  - **from thalamus project the cerebral cortex through thalamic radiation**

Taste sensation

- **Molecules dissolve in the saliva »»»»»» attached to receptors on cillia of gustatory cells »»»»»» receptors potential »»»»» action potential**
- **Combination between molecules and receptors are week (since taste can be easily abolished by washing mouth with water)**

- Sweet receptors respond to »»»»» sugar, saccharine, some amino acids
- Sour receptors respond to »»»»» H ion
- Salty receptors respond to »»»»» salts
- Umami receptors respond to »»»»» monosodium glutamate

- Distribution of taste buds on tongue not uniform
  - Sweet - tongue tip
  - Sour - tongue margins
  - Bitter - back of tongue
  - Salt - widely distributed
  - Umami - widely distributed

Pathophysiology

- Ageusia (complete loss of taste)
- Dysgeusia (disturbed taste, hormonal effect)
- Hypogeusia (Common cold)
- Hypergeusia (Adrenal insufficiency)

- Tooth extraction (loss of taste if nerve damage during extraction)