



SNS COLLEGE OF NURSING

SARAVANAMPATTI, COIMBATORE-35

DEPARTMENT OF NURSING

COURSE NAME : BSC (NURSING) I YEAR

SUBJECT : ANATOMY AND PHYSIOLOGY

UNIT III: SENSORY SYSTEM

TOPIC : SENSORY PATHWAYS



SENSORY PATHWAYS



- The human body has peculiar sense organs that are responsible for identifying the sensory stimuli (hearing, vision, Taste, smell and touch)
- The impulses are conveyed to the central processing organ or control center at the brain through a network of structures
- They are called as sensory pathways that are responsible for receiving and transmitting the messages.



OLFACTORY PATHWAY



| | |
|-----------------|---|
| Olfactory cells | Olfactory receptor cells (sense odor and contain cilia), supporting cells, basal (stem) cells (replacing old and damaged olfactory receptor cells). |
| Olfactory nerve | CN I formed out of a collection of olfactory receptor cell axons, which pass through the cribriform plate and into the roof of the nasal cavity. |
| Olfactory bulb | It is the relay station of the olfactory pathway and contains olfactory glomeruli. |

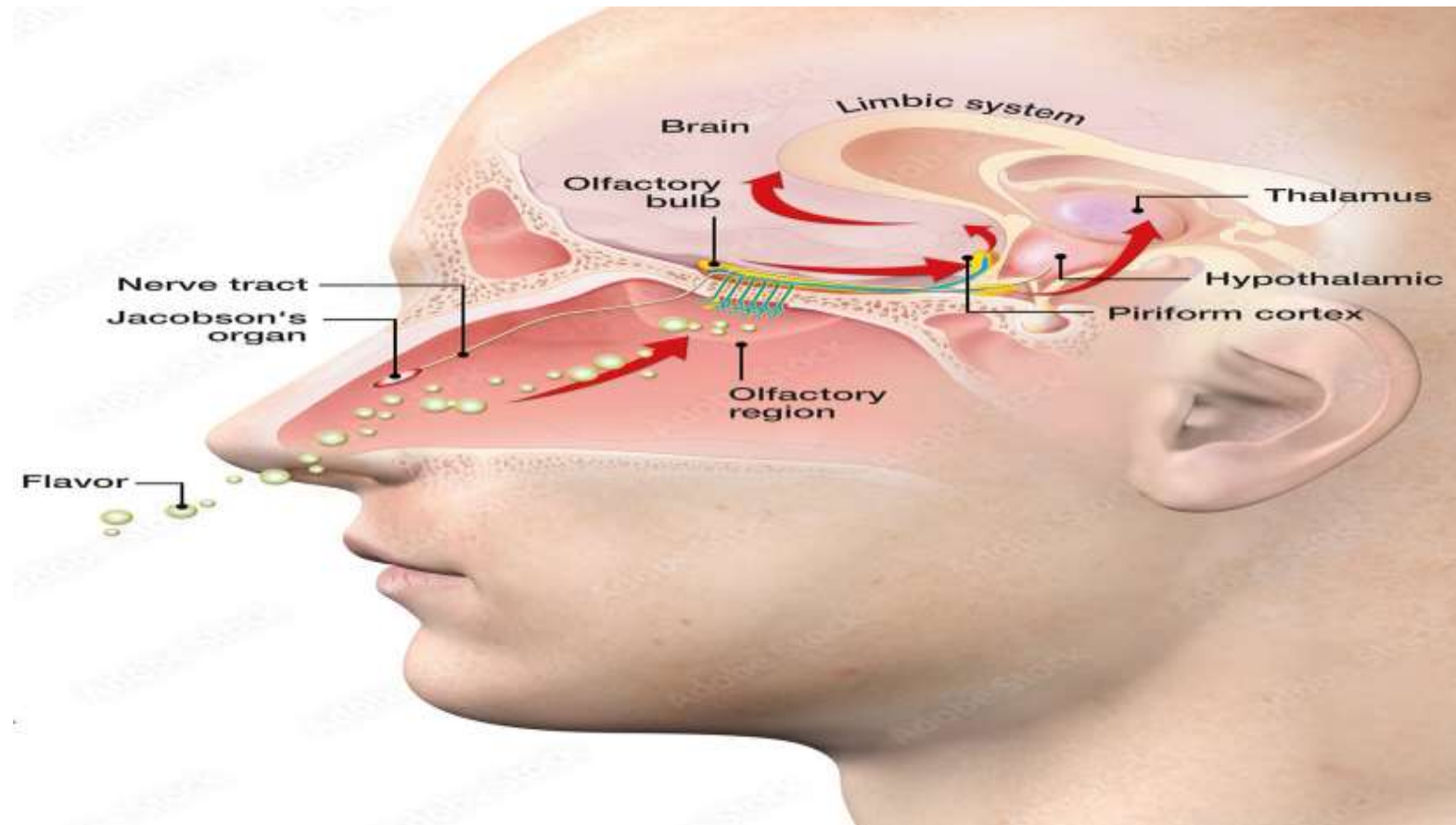


OLFACTORY PATHWAY

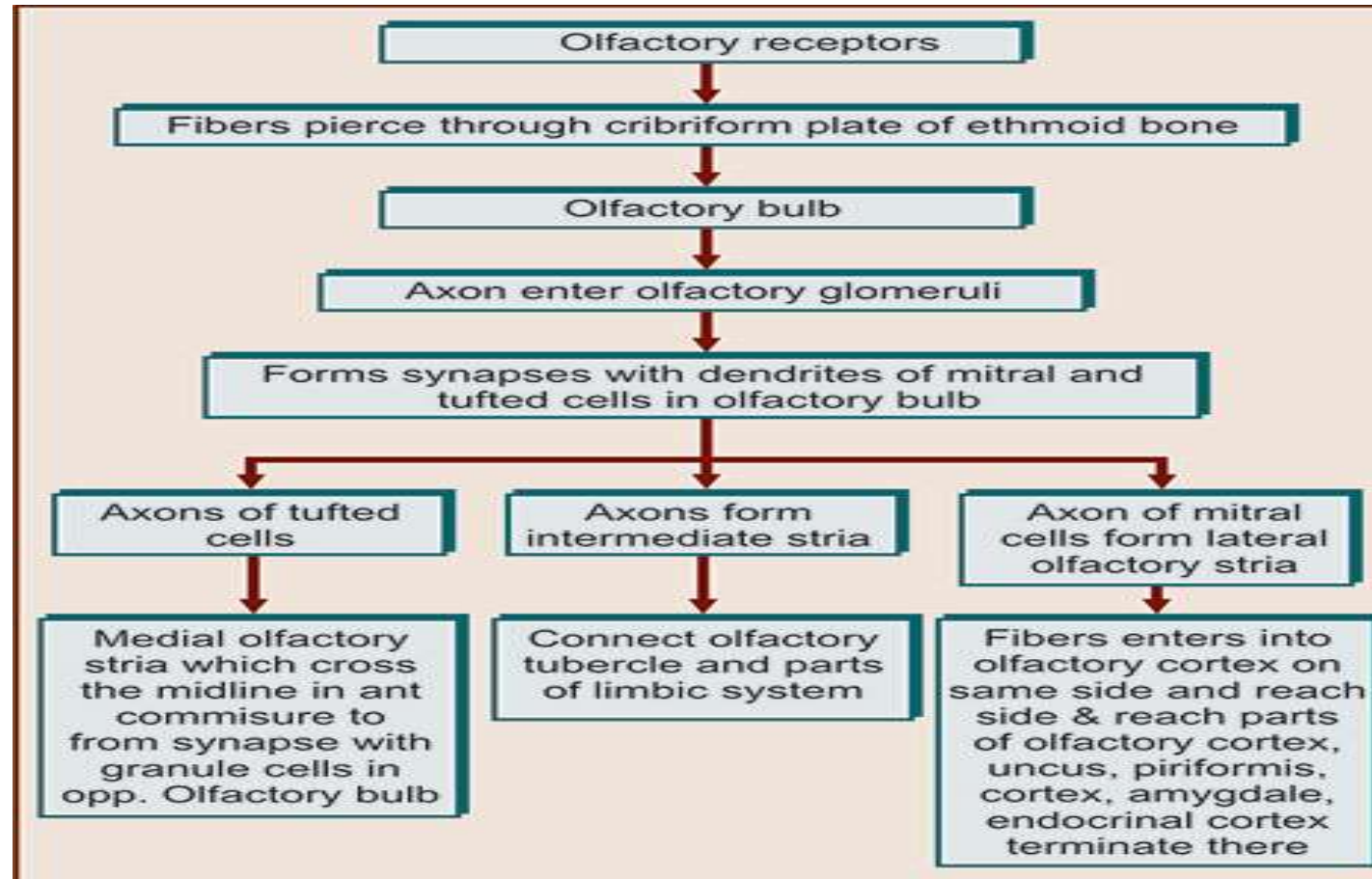


| | |
|--------------------|--|
| Olfactory tract | It is made up of the axon neurons. |
| Olfactory striae | They are the medial and olfactory tract. |
| Olfactory cortex | Piriform cortex, amygdal |
| Output destination | Orbitofrontal cortex, |

OLFACTORY PATHWAY



OLFACTORY PATHWAY



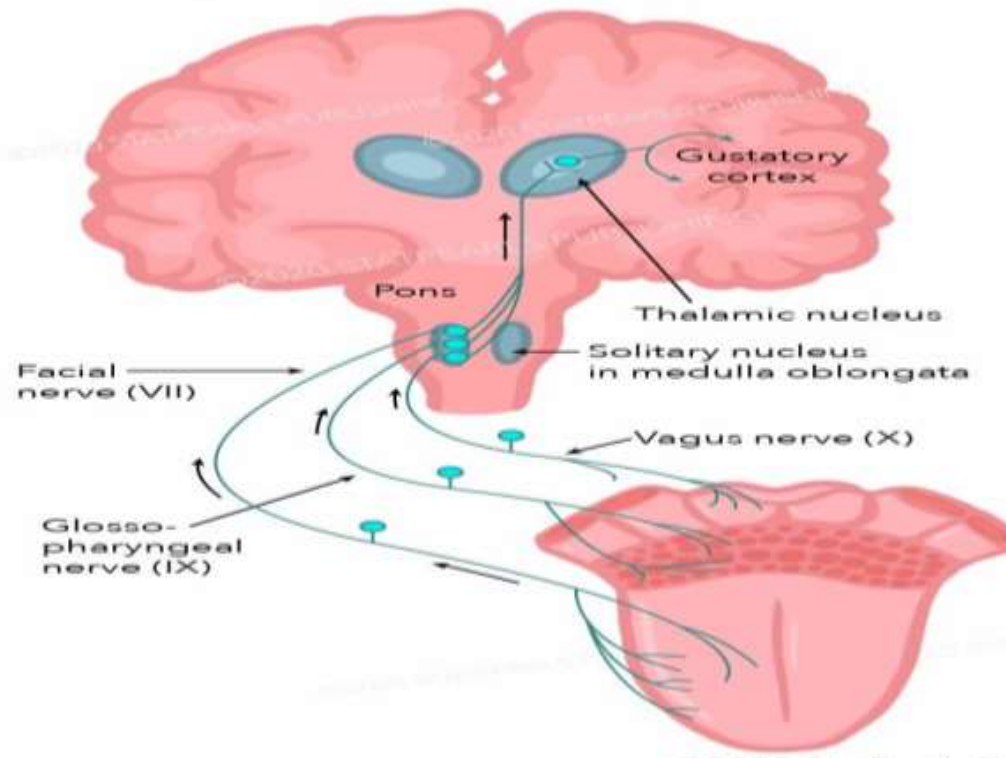


GUSTATORY PATHWAY

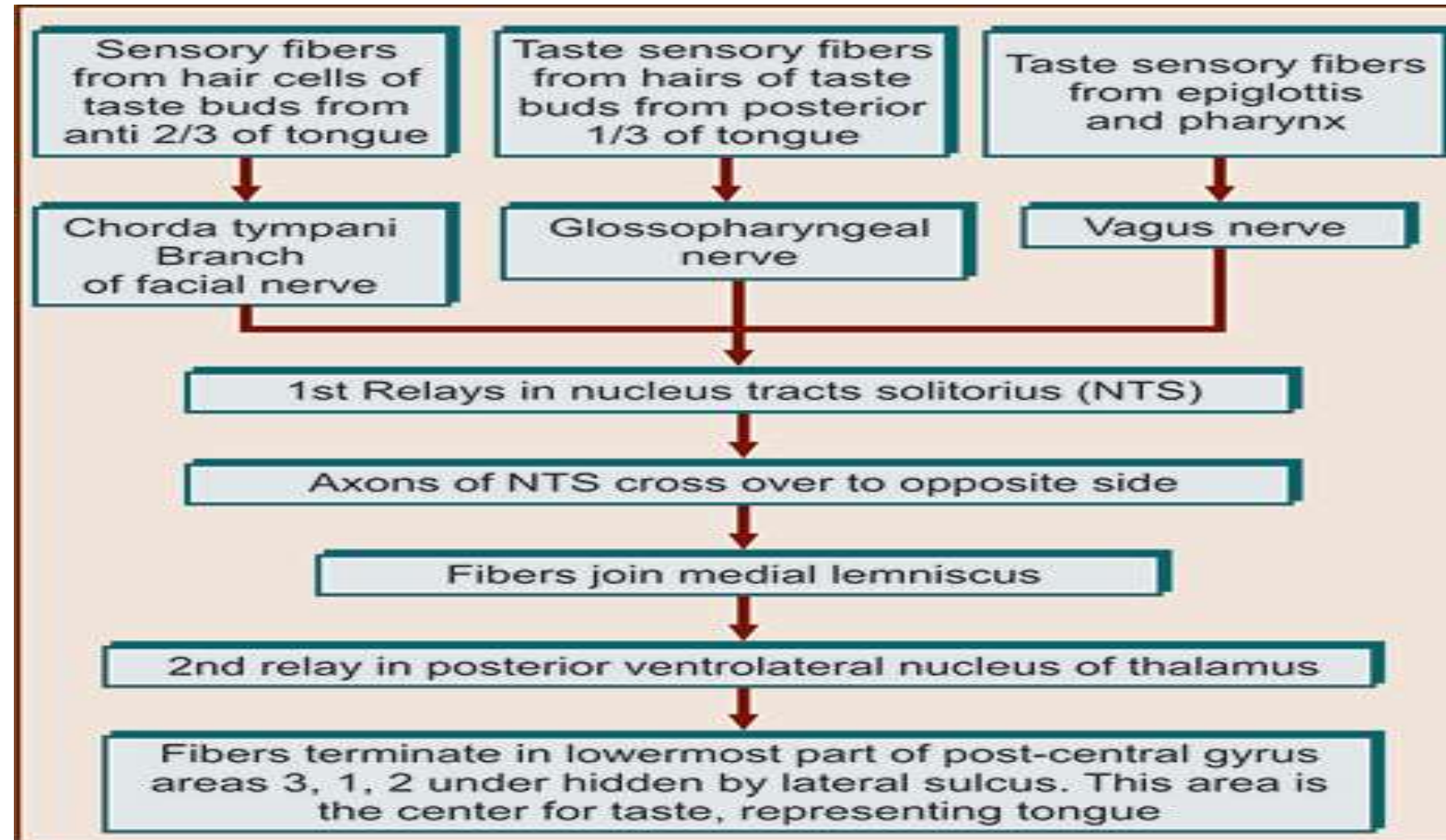


- **Gustation** is our chemical sense of taste, meaning that taste molecules (chemical stimuli from food) trigger sensory receptors that begin the gustatory pathway.
- The **gustatory system** includes tongue, taste buds, and papillae and brain connections that help us perceive and experience taste.
- **Taste** is a combination not only of our gustatory sense but also our olfactory sense.
- The **cranial nerves** that carry taste information include the facial, glossopharyngeal, and vagus.

GUSTATORY PATHWAY



GUSTATORY PATHWAY





AUDITORY PATHWAY



- The auditory pathway is more complex than the visual and the olfactory pathways.
- It is composed of a number of nuclei and is dependent on a range of functional areas.

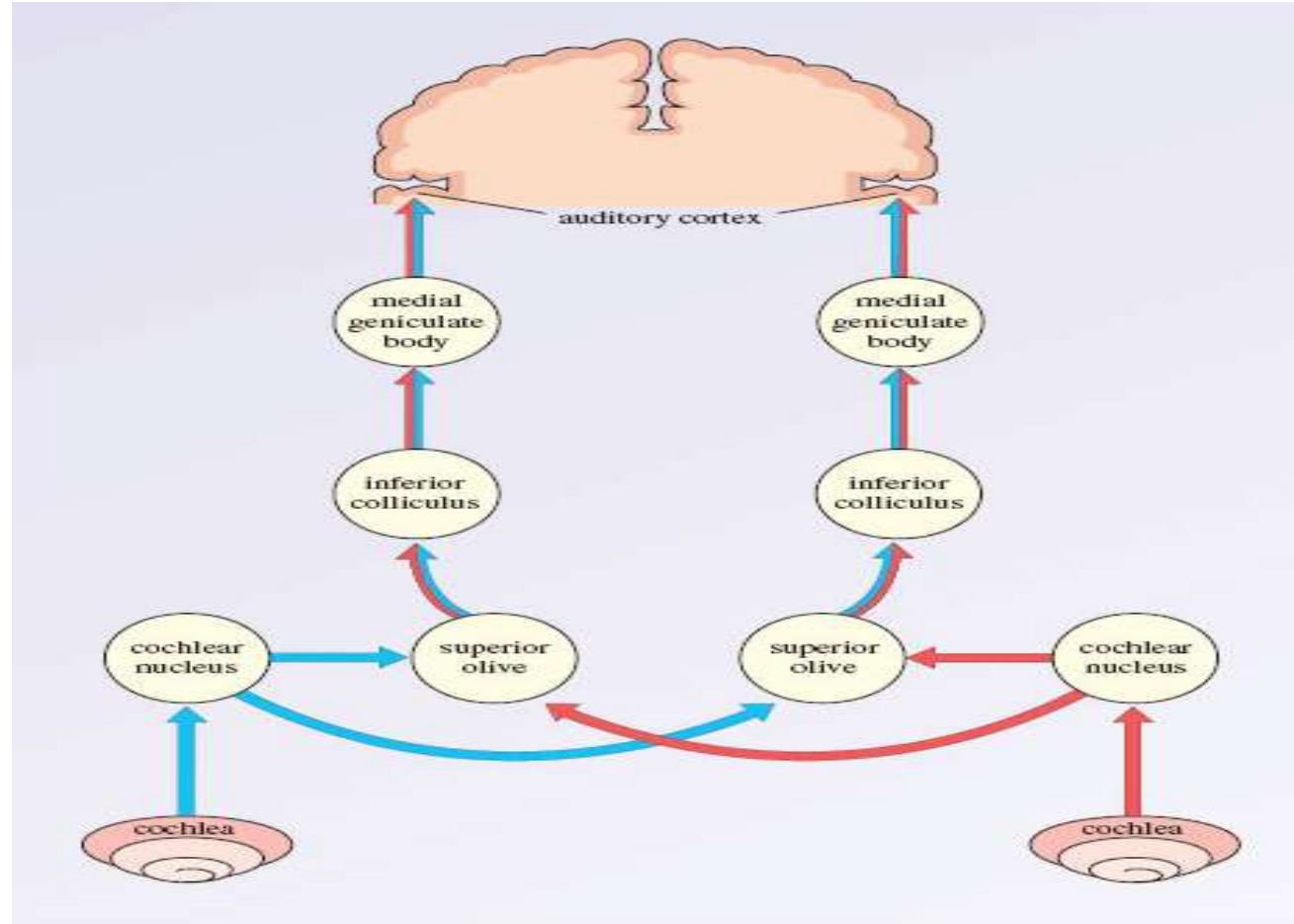


AUDITORY PATHWAY

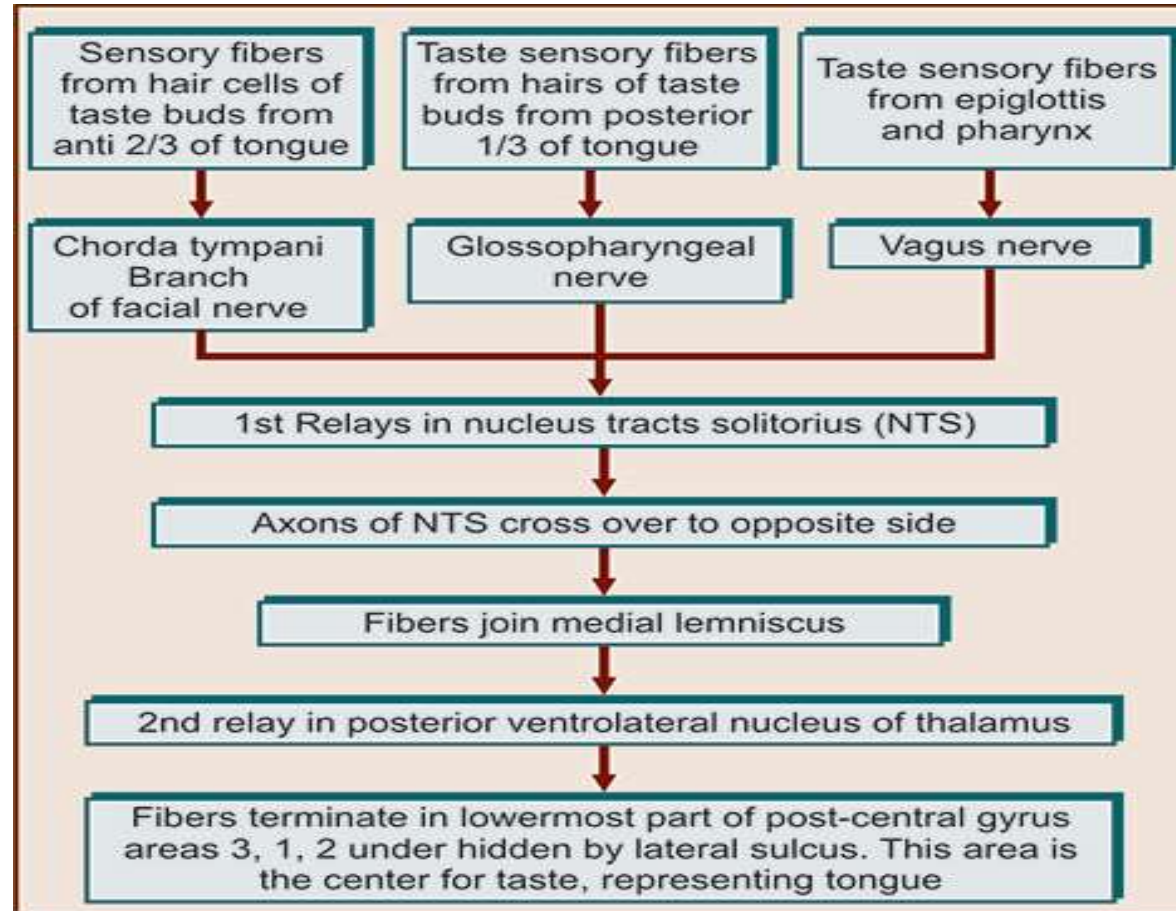


- The mnemonic used to remember the flow of impulse is
- **ECOLIMA-**
- **E**ighth Nerve,
- **C**ochlear Nuclei,
- **O**livary Nucleus,
- **L**ateral Lemniscus,
- **I**nferior Colliculus,
- **M**edial Geniculate Body,
- **A**uditory Cortex

AUDITORY PATHWAY



AUDITORY PATHWAY



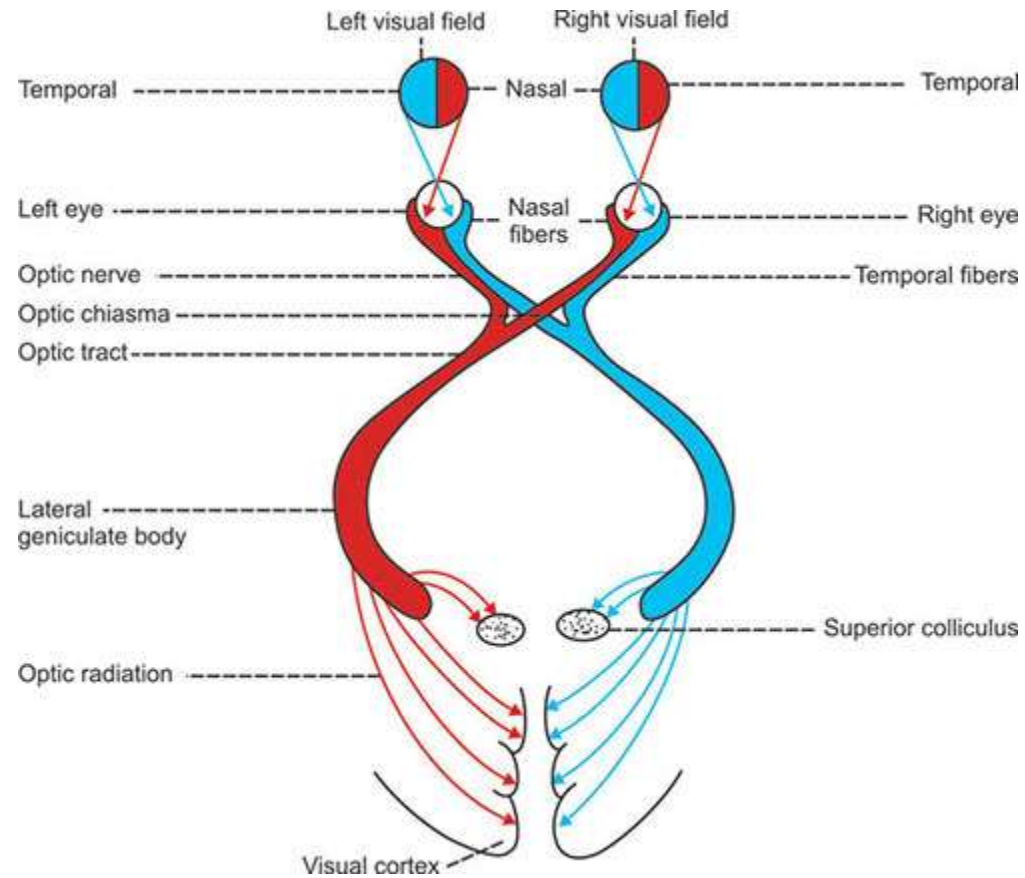


OPTIC PATHWAY

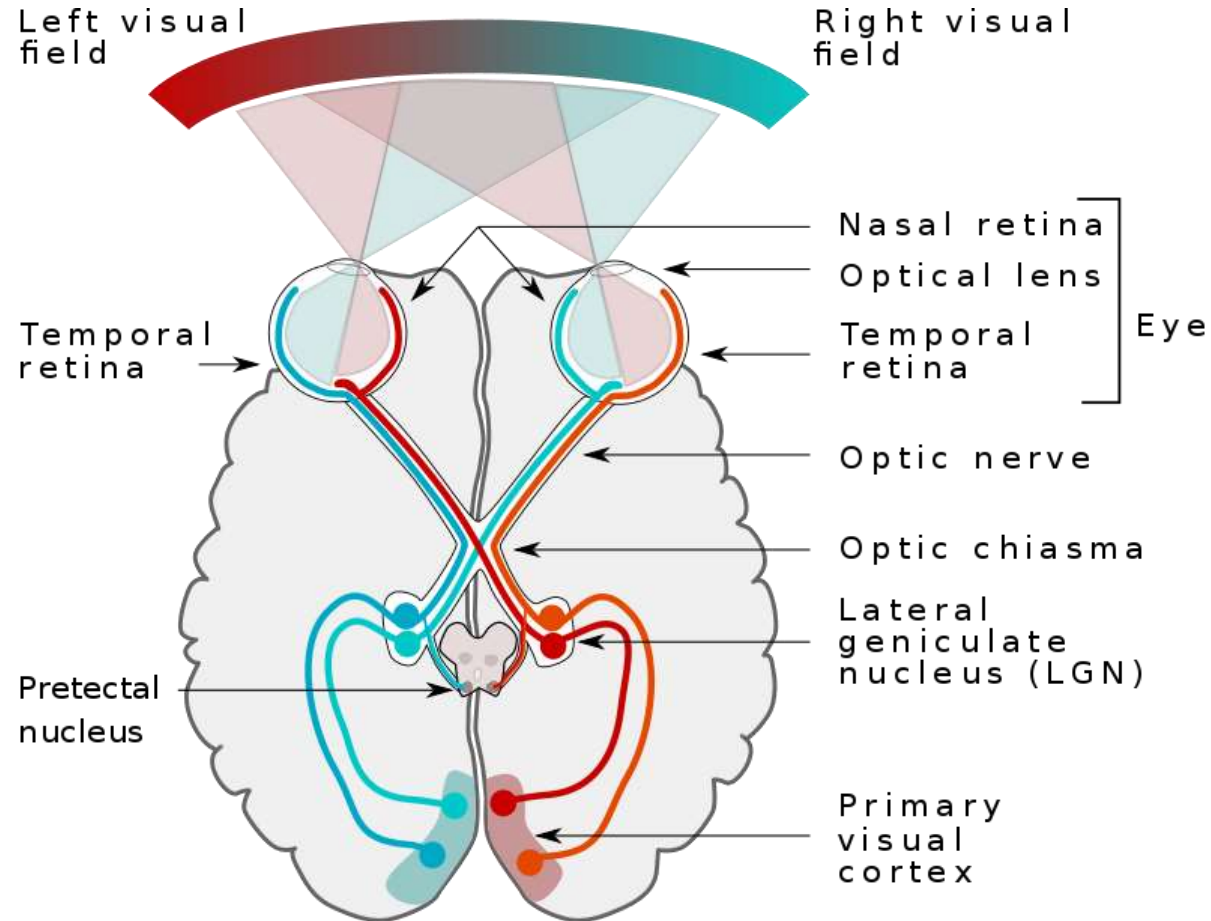


- Visual stimuli from our surroundings are processed by an intricate system of interconnecting neurons, which begins with the optic nerve in the eye up to the visual processing center in our forebrain called the visual cortex.
- The optic pathway begins in the retina, which is a complex structure made up of ten different layers.

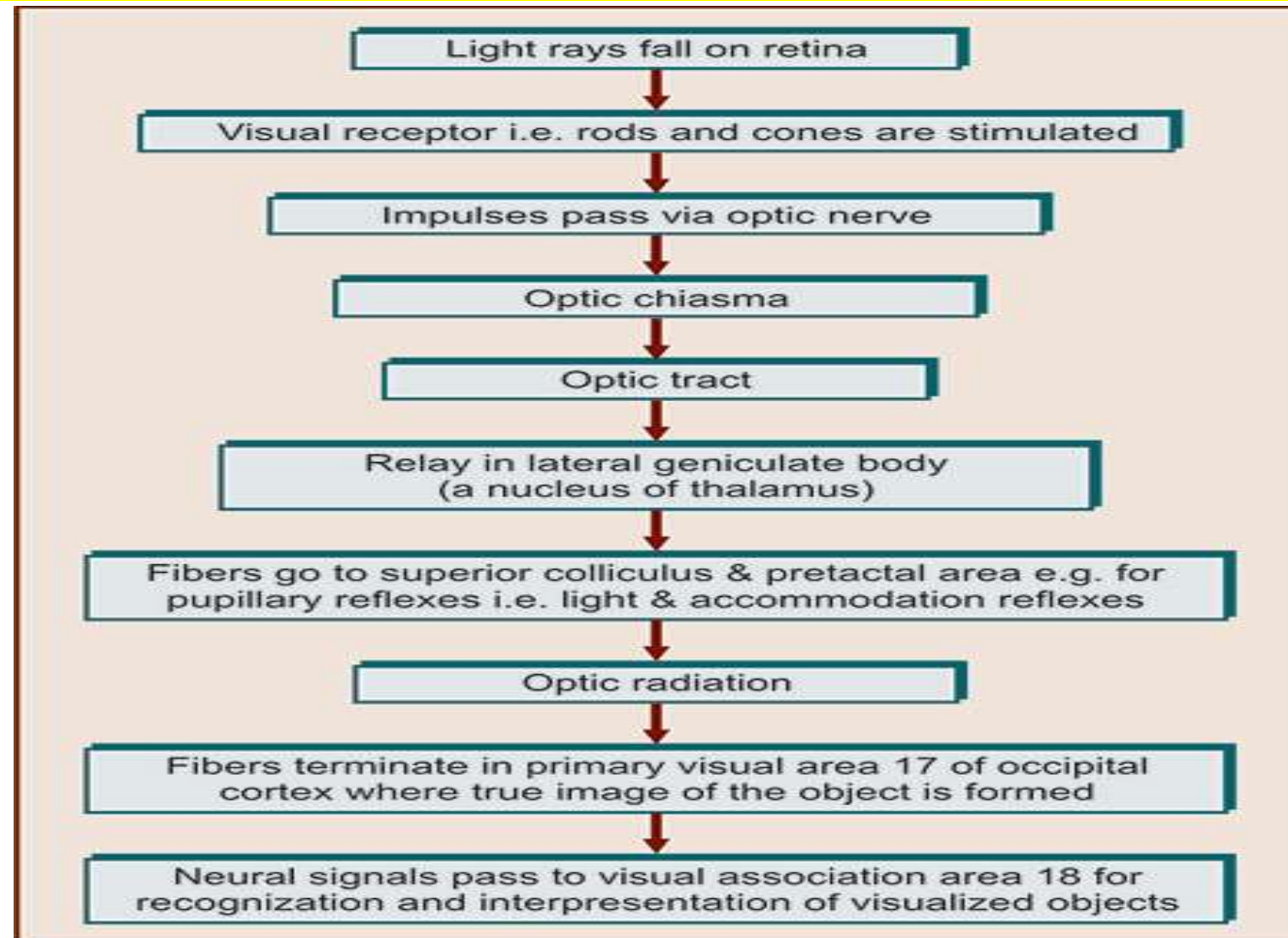
OPTIC PATHWAY



OPTIC PATHWAY



OPTIC PATHWAY





CONCLUSION



- The auditory pathway is more complex structure.
- The olfactory pathway has many small structures responsible for communicating the stimuli.
- The gustatory pathway also has minute structures that identifies different taste sensations along the surface of the tongue
- The optic pathway is most crucial network and the core component for vision of the individual.

