Sensory Systems

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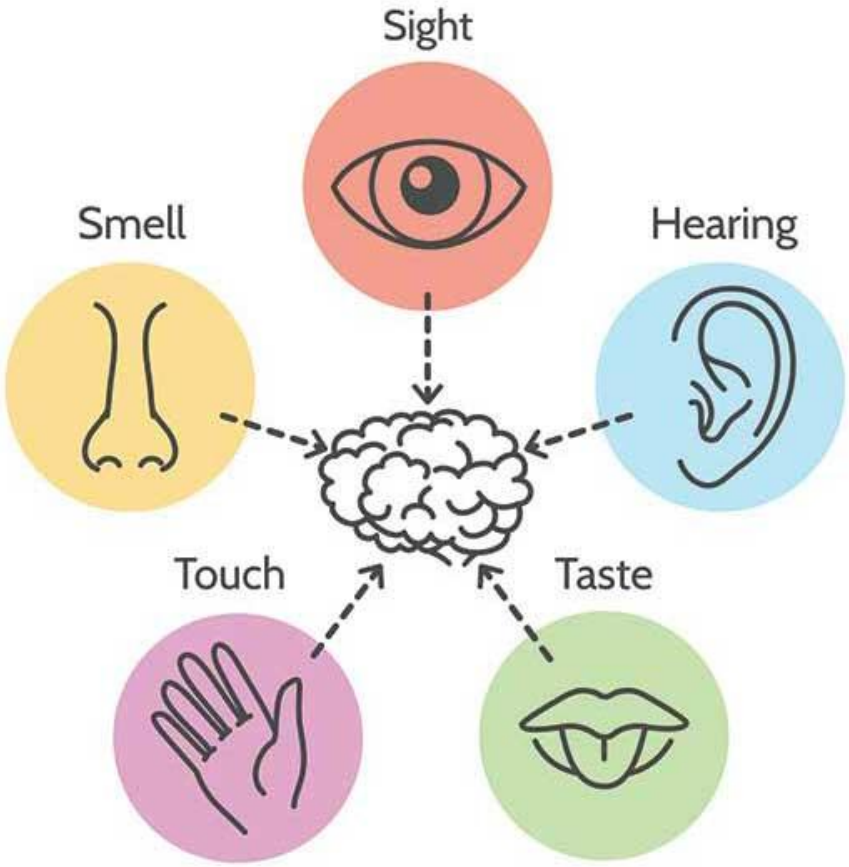
At the end of this lesson you will be able to:

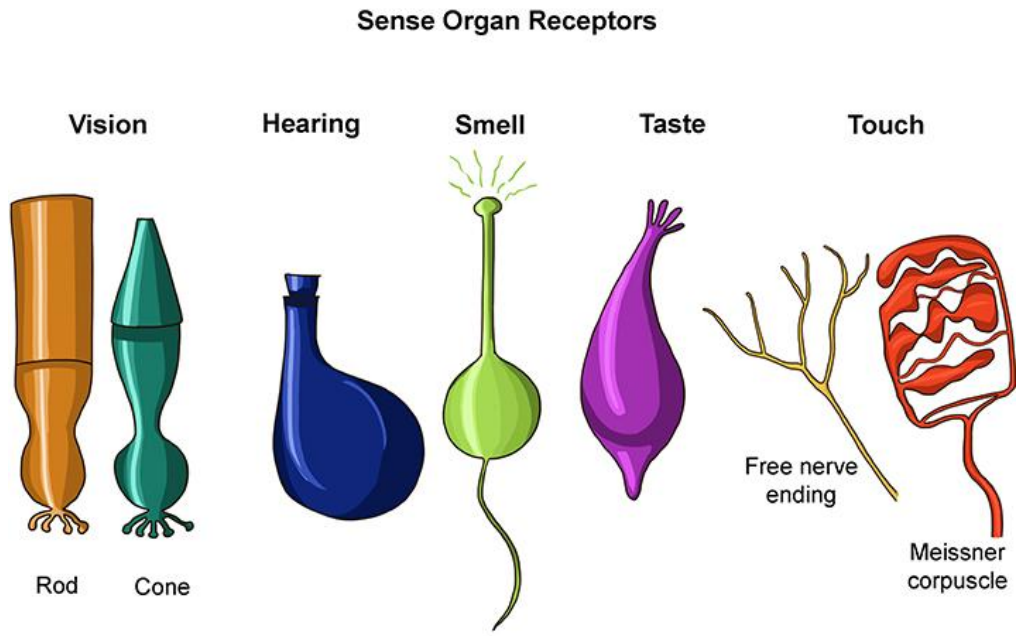
- **List the stimuli to which each of the five types of sensory receptors respond.**
- **Identify the parts of the ear responsible for hearing and for maintaining balance.**

Perception of stimuli



To detect changes in the environment, humans and other organisms have highly developed sense organs—eyes, ears, nose, mouth, and skin—that receive stimuli.

Receptors and sense organs



A sensory receptor is a neuron that detects stimuli.

Can be categorized based on the type of stimuli to which they respond.

Mechanoreceptors

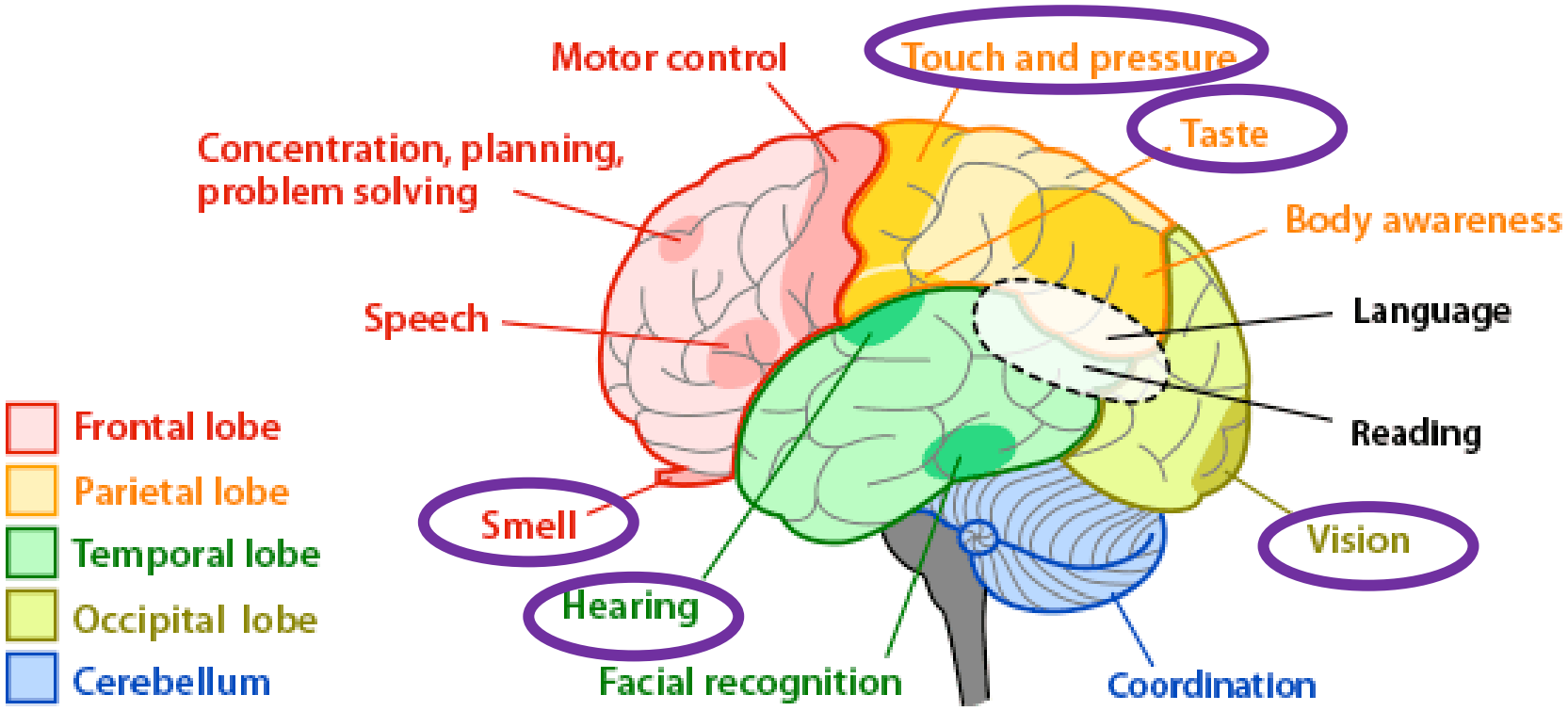
Photoreceptors

Chemoreceptors

Thermoreceptor

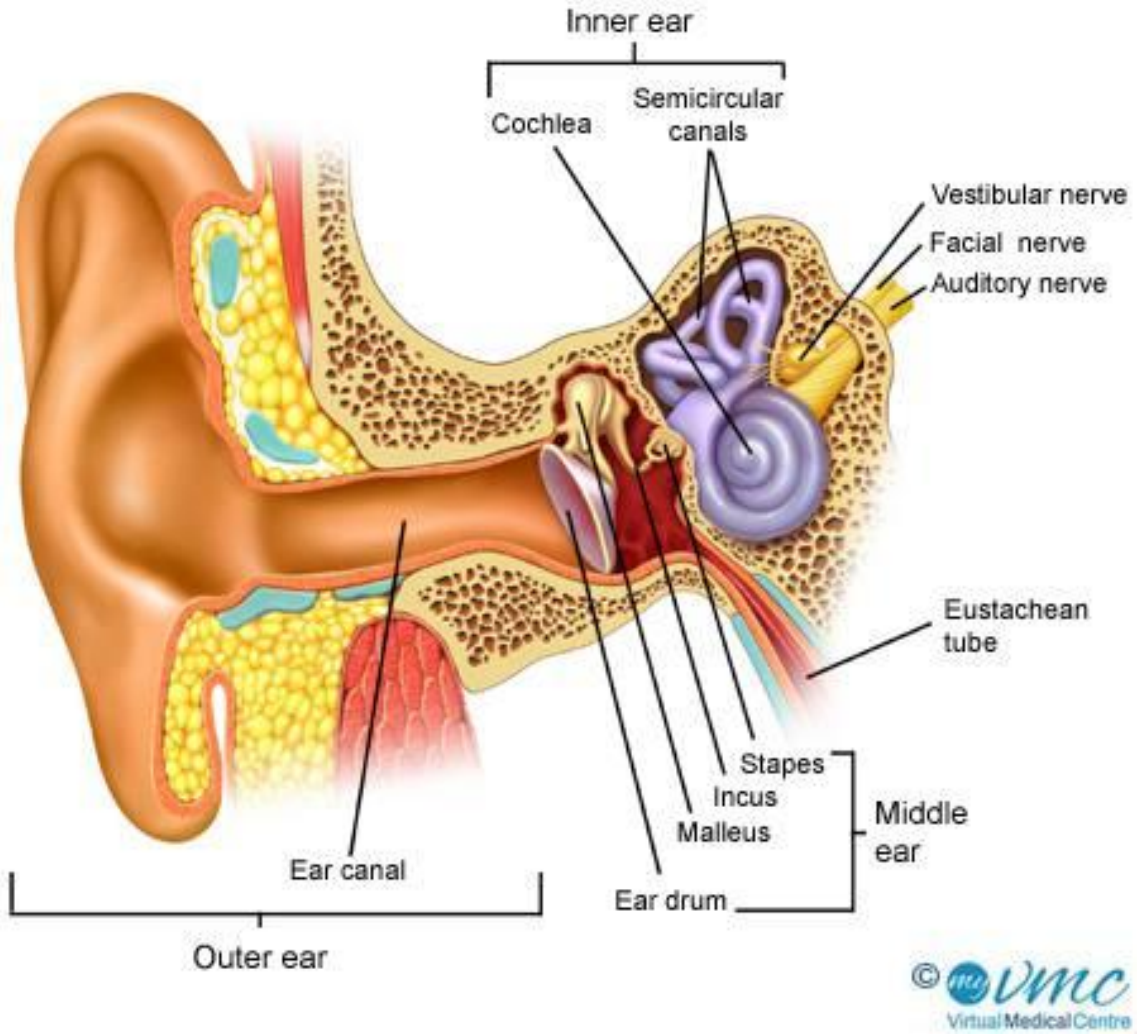
Pain receptors

The brain has a specific region for each sense

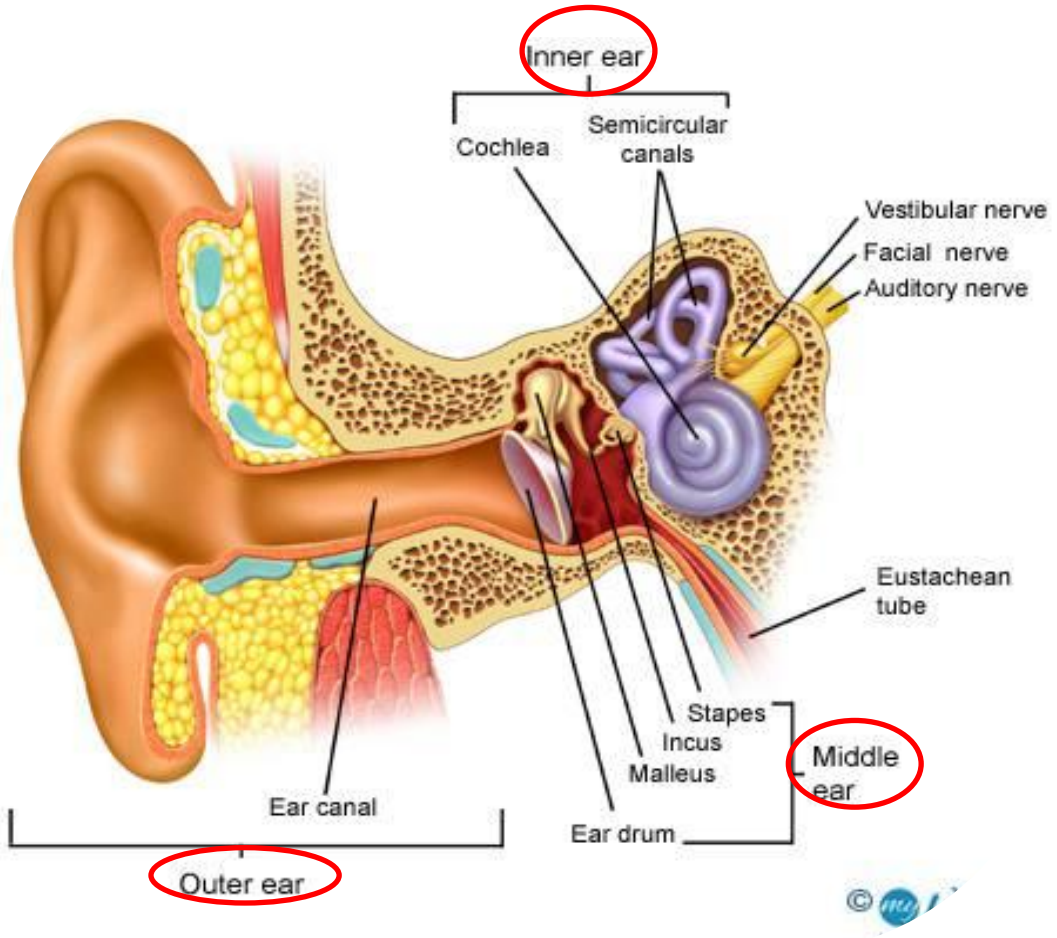


Hearing and balance

The ear performs two main functions: detecting sound and maintaining balance.

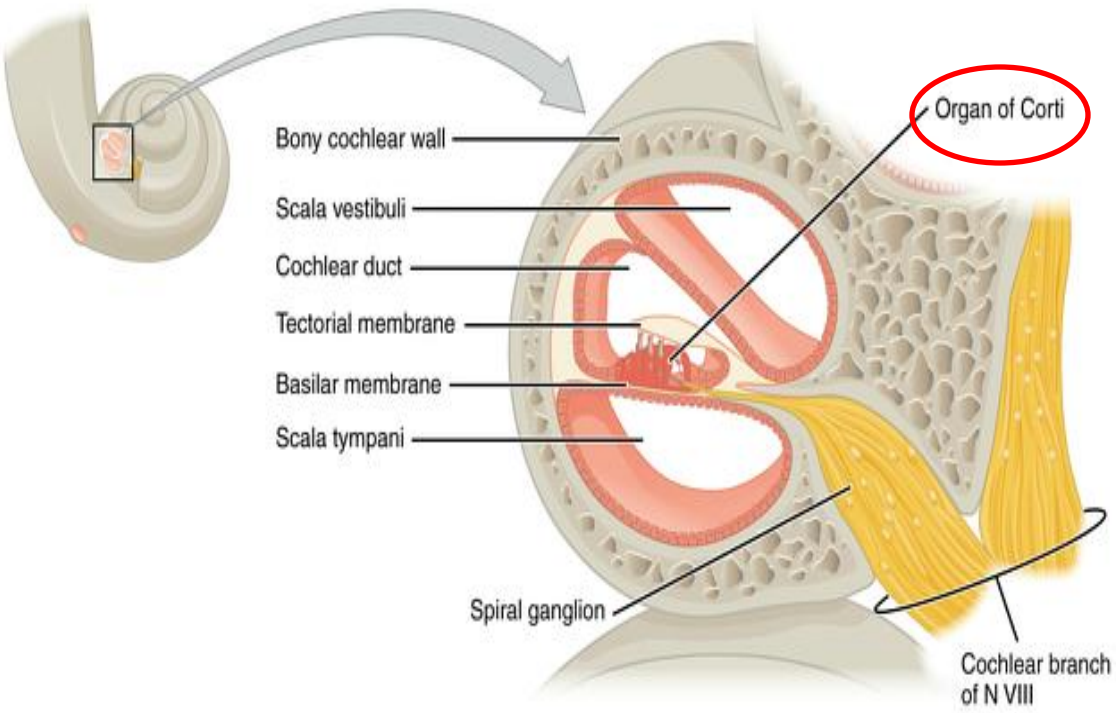


Hearing and balance



Main composition of ear:
Ear Canal
Ear drum
Malleus
Incus
Stapes
Semicircular canals
Cochlea

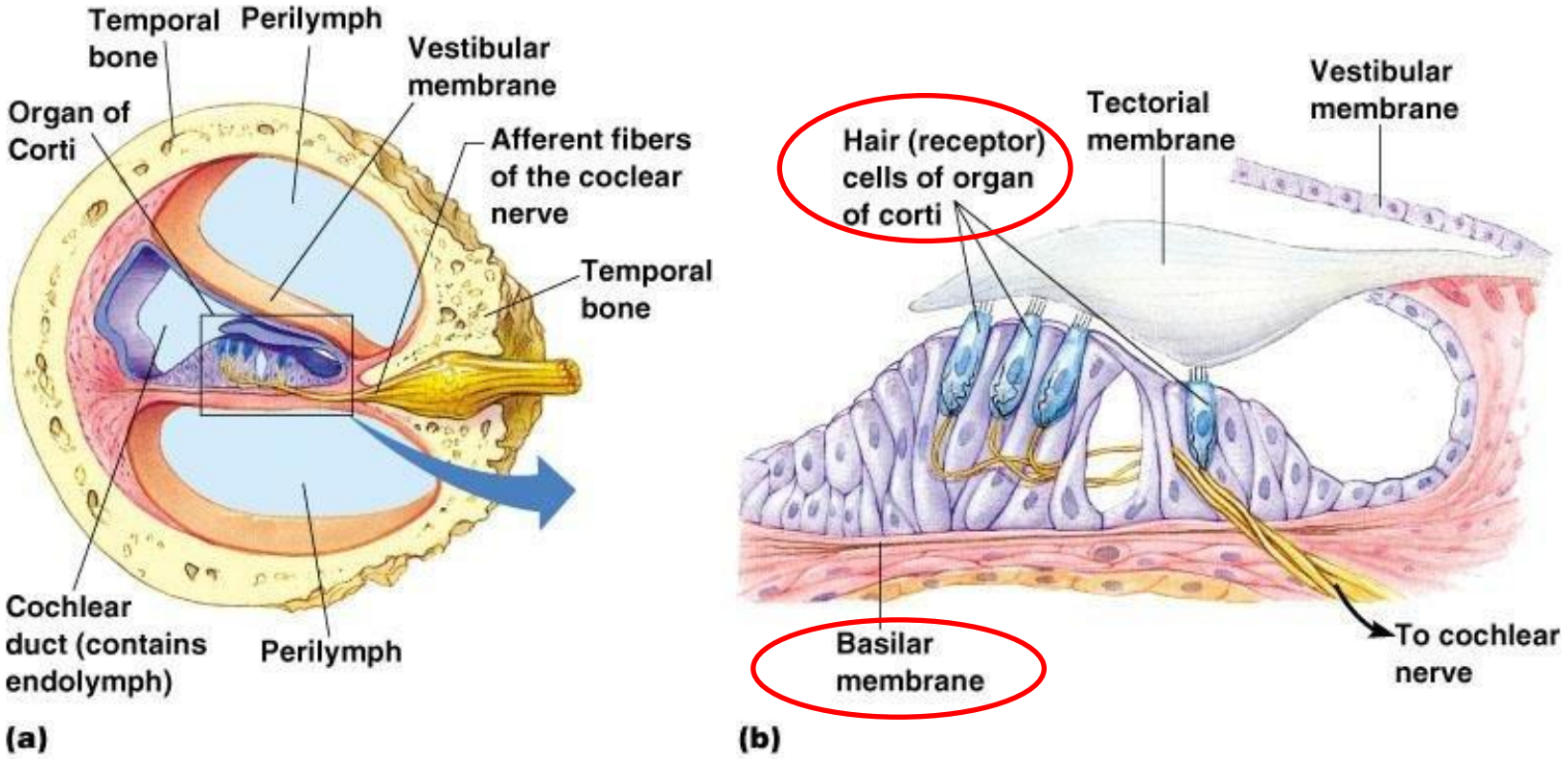
Organ of corti

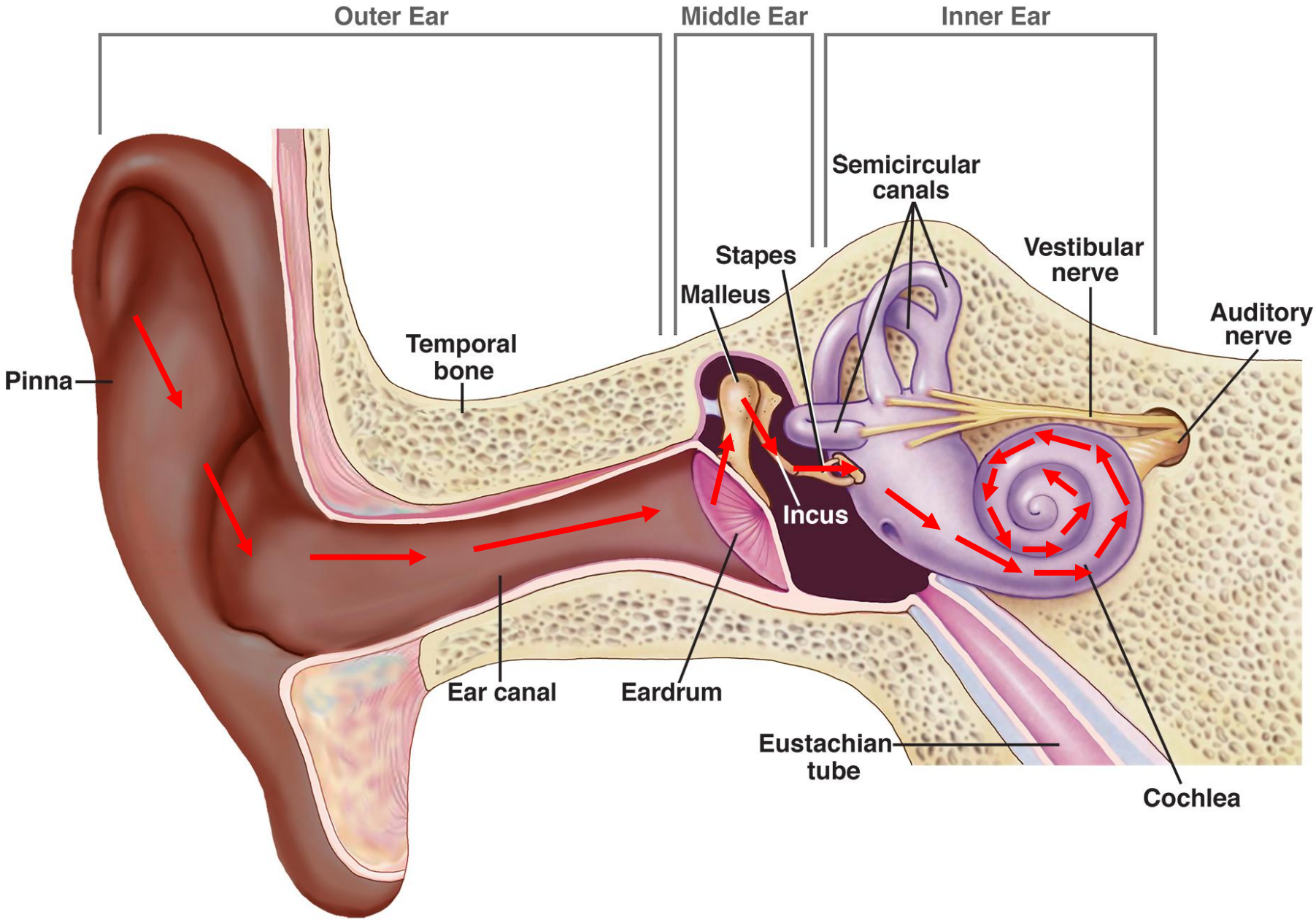


The Organ of Corti is a vital structure found in the cochlea of the inner ear, **which is responsible for hearing in mammals**. It's named after Italian anatomist Alfonso Corti.

This organ contains thousands of sensory hair cells, arranged in rows, which are crucial for detecting sound vibrations. These hair cells are stimulated by sound waves transmitted through the cochlear fluid. When the hair cells are stimulated, they convert mechanical vibrations into electrical signals, which are then transmitted to the brain via the auditory nerve, enabling us to perceive sound.

Organ of corti




Outer Ear
Middle Ear
Inner Ear
Semicircular canals
Vestibular nerve
Auditory nerve
Stapes
Malleus
Pinna
Temporal bone
Incus
Ear canal
Eardrum
Eustachian tube
Cochlea