

Vestibular Apparatus:

- It is also known as membranous labyrinth is enclosed in bony labyrinth.
- Membranous labyrinth - contains endolymph rich in K^+ similar to intracellular fluid.

It consists of:

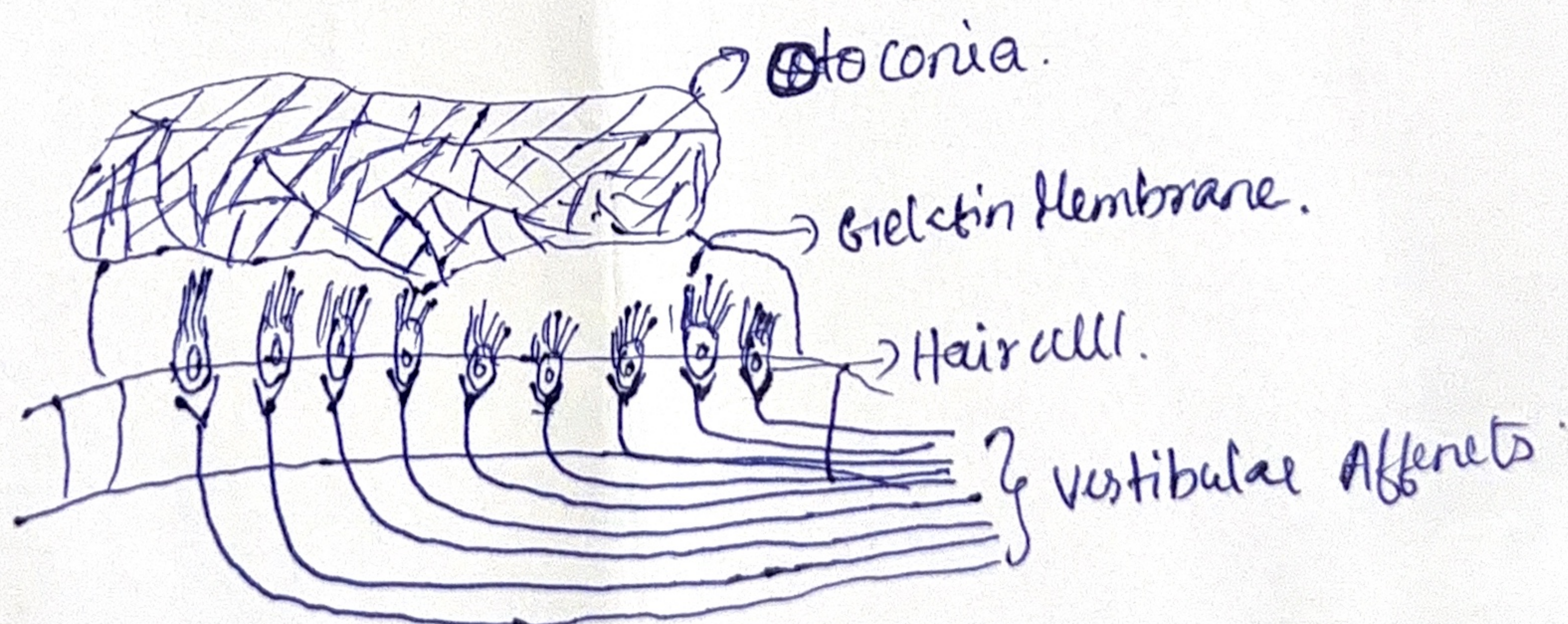
- Otolith organ - Saccule & Utricle
- 3 semicircular canals.
- Hair cells are the receptors in the vestibular apparatus.

OTOLITH ORGAN:
 Utricle (lies in post part of bony vestibule.
 Saccule (lies in Ant to utricle opp to the footplate of stapes).

- > Receive S opening of 3 semicircular canal.
- > Sensory epithelium of utricle & saccule is Macula.

↓
It is the hair cell similar to hair cells of Crista Ampullaris.

- > Otolith ↑ the specific gravity of otolith membrane to about twice that of endolymph, hence it tends to respond to gravity channels.
- > In utricle → Macula is in ^{horizontal} vertical position. (detect → dorsiflexion & ventriflexion)
- > In saccule → Macula is in vertical position (detect → side to side movement of rock)

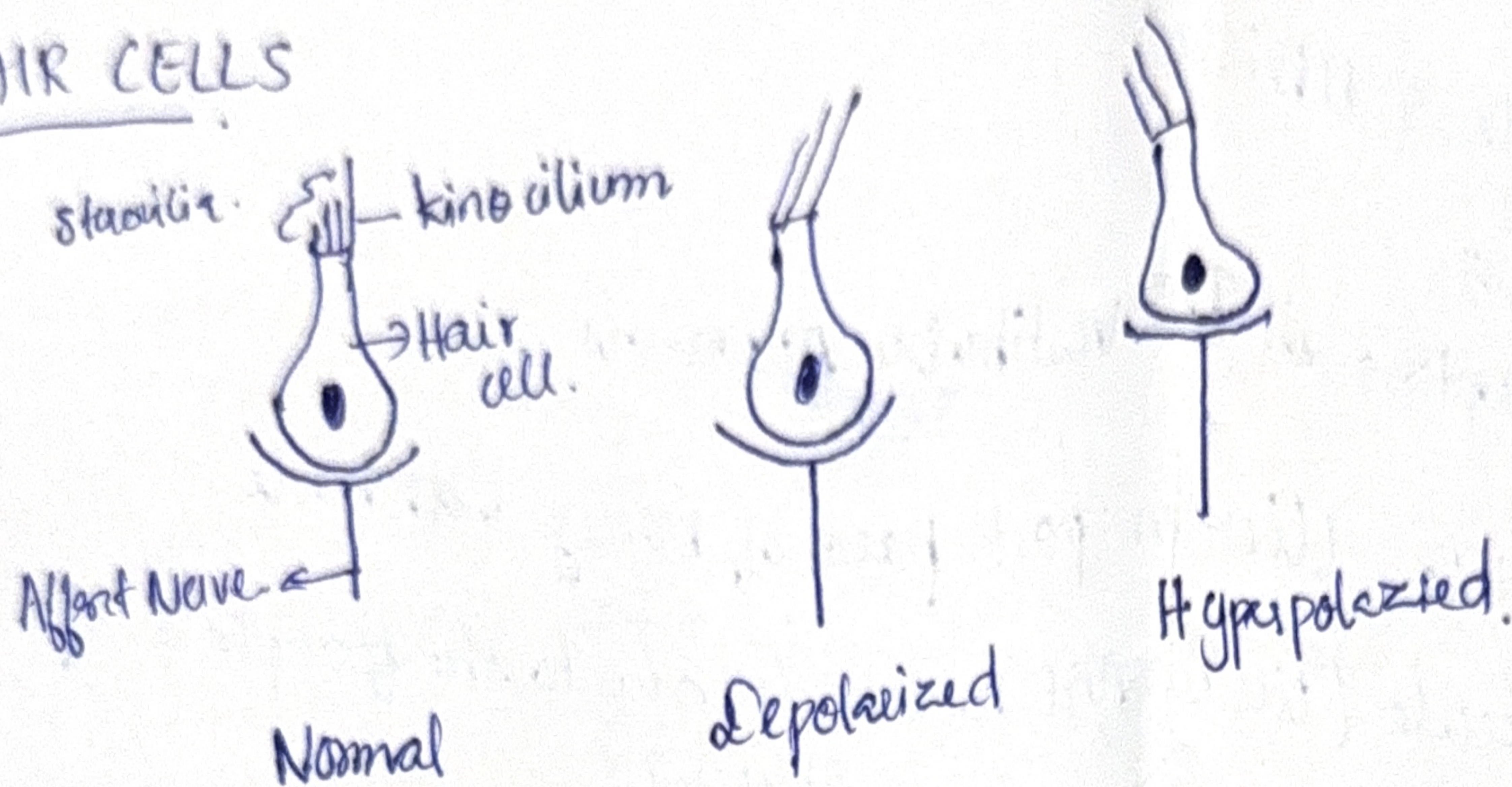


AA:

Meniere's disease

- Also called endolymphatic hydrops.
- It is a disorder of inner ear where endolymphatic system is distended with endolymph.

HAIR CELLS



> Activity conveyed through eighth C.N.

Bending of cilia toward kinocilium

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open K^+ channel.

↓
 Ca^{2+} enters hair cell.

↓
Depolarization.

Same for Hypopolarization.