

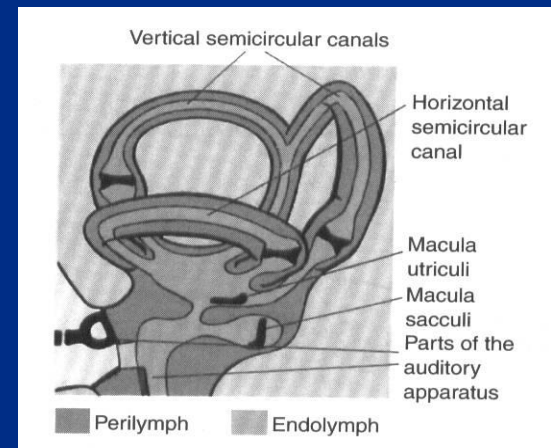
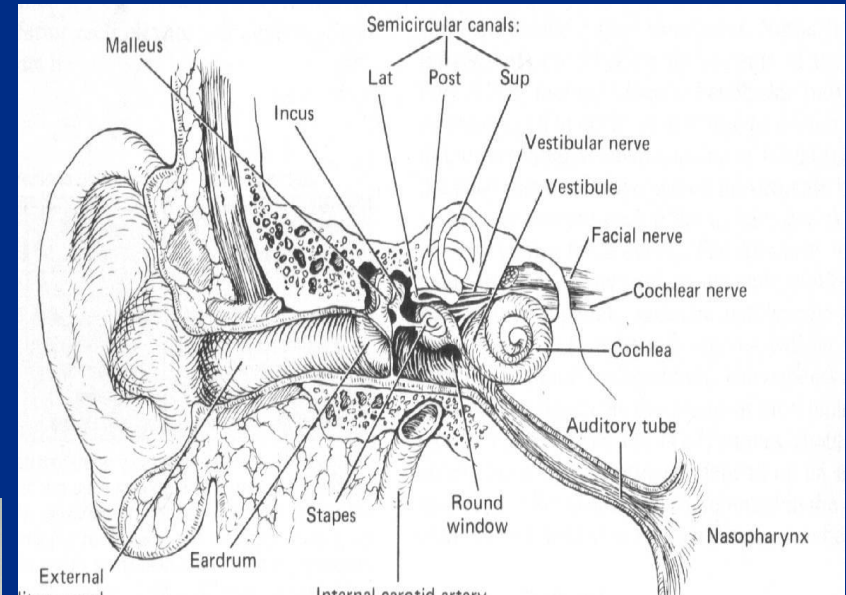
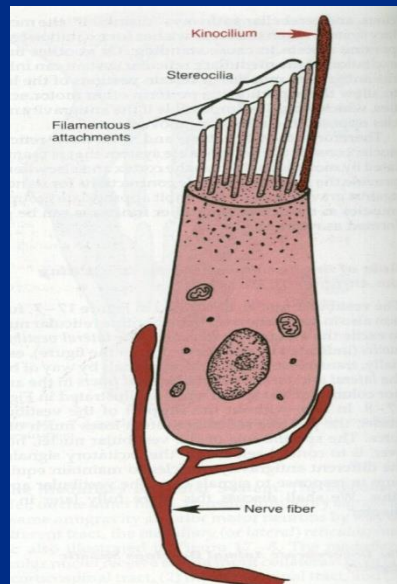
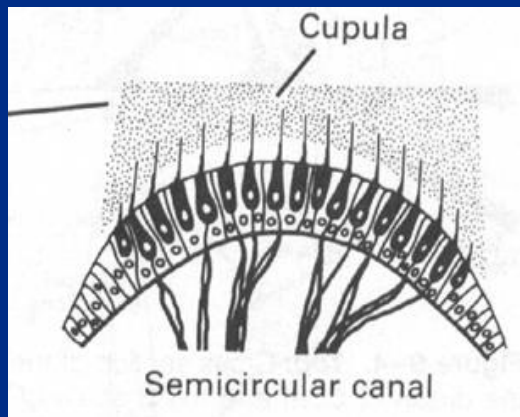
Nystagmus

עדי ענפי

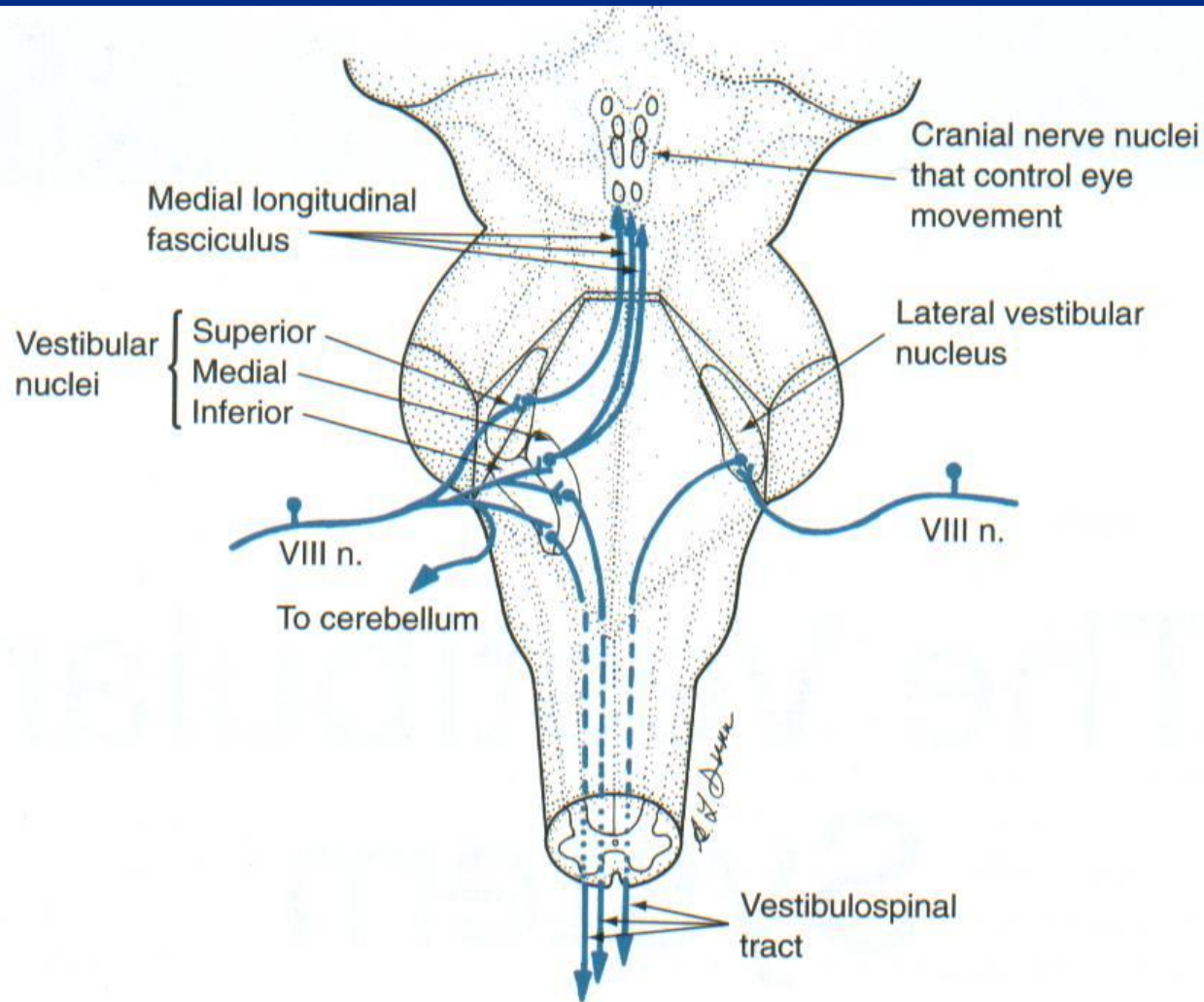
מחלקה פנימית ב'

The Vestibular System

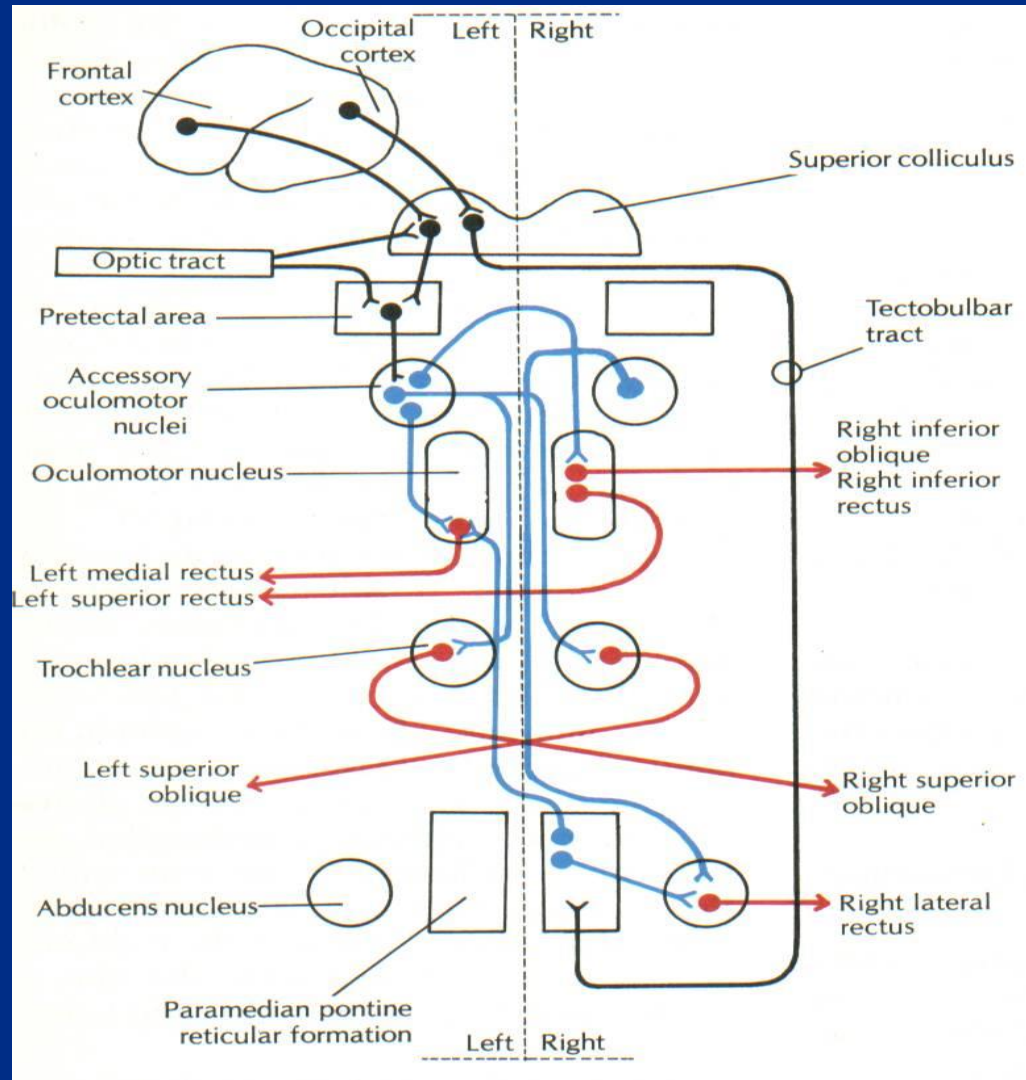
- Semicircular canals
- Crista ampullaris
- Cupula
- Utricle
- Saccule



The Vestibular System



Eye movement



Nystagmus

- Periodic rhythmic ocular oscillation of the eyes
- Horizontal, vertical, torsional (rotary), or any combination of these movements
- Unilateral or bilateral (unilateral it is more often asymmetric rather than truly unilateral)
- Congenital or acquired
- Physiology or pathology
- Slow initiating phase and a fast corrective phase (jerk nystagmus) or sinusoidal and of approximately equal amplitude and velocity (pendular nystagmus)

Pathophysiology

- A disorder affecting any of the 3 mechanisms that control eye movements:
 - Fixation
 - The vestibulo-ocular reflex
 - The neural integrator
- Both focal and diffuse disorders may cause nystagmus
- The characteristics of the nystagmus and the associated signs and symptoms help to localize the lesion and suggest possible etiologies

Nystagmus

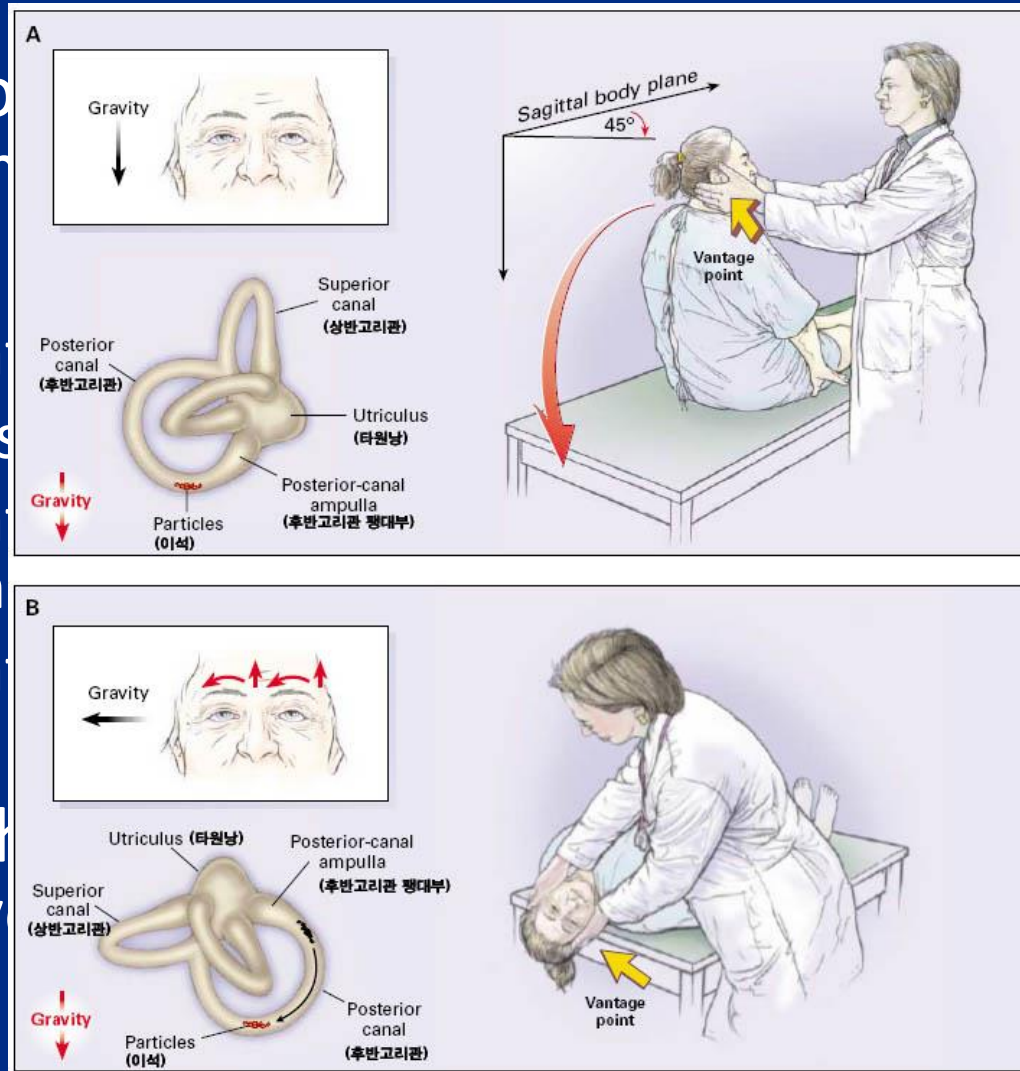
- Jerk nystagmus
- **Gaze-evoked nystagmus** - mild (normal), exaggerated (drugs, muscle paresis, myasthenia gravis, demyelinating disease, brain lesions)
- **Vestibular nystsgmus** - dysfunction of labyrinth, vestibular nerve, vestibular nucleus in brainstem. Discrete attacks with nausea, vertigo, tinnitus and hearing lose
- **Downbeat nystagmus** - brain stem and cerebellar stroke, drugs, alcoholism and multiple sclerosis

BENIGN PAROXYSMAL POSITIONAL VERTIGO

- Due to debris which has collected within a part of the inner ear - "**otoconia**" - small crystals of calcium carbonate derived **Utricle**
- The utricle may have been damaged by head injury, infection, or other disorder of the inner ear, or may have degenerated because of advanced age
- **Common cause of dizziness** - about 50% of all dizziness in older people
- Symptoms: dizziness or vertigo, lightheadedness, imbalance, and nausea
- **Precipitated by a change of position of the head**

Dix-Hallpike test

- A diagnostic test for benign paroxysmal positional vertigo (BPPV)
- Stages:
 - The patient is seated
 - Head is turned 45° to the right
 - The patient is held in this position for 30 seconds
 - The patient is then tilted back 45°
- The test is performed on both sides (inside the ear and the nerve)



benign

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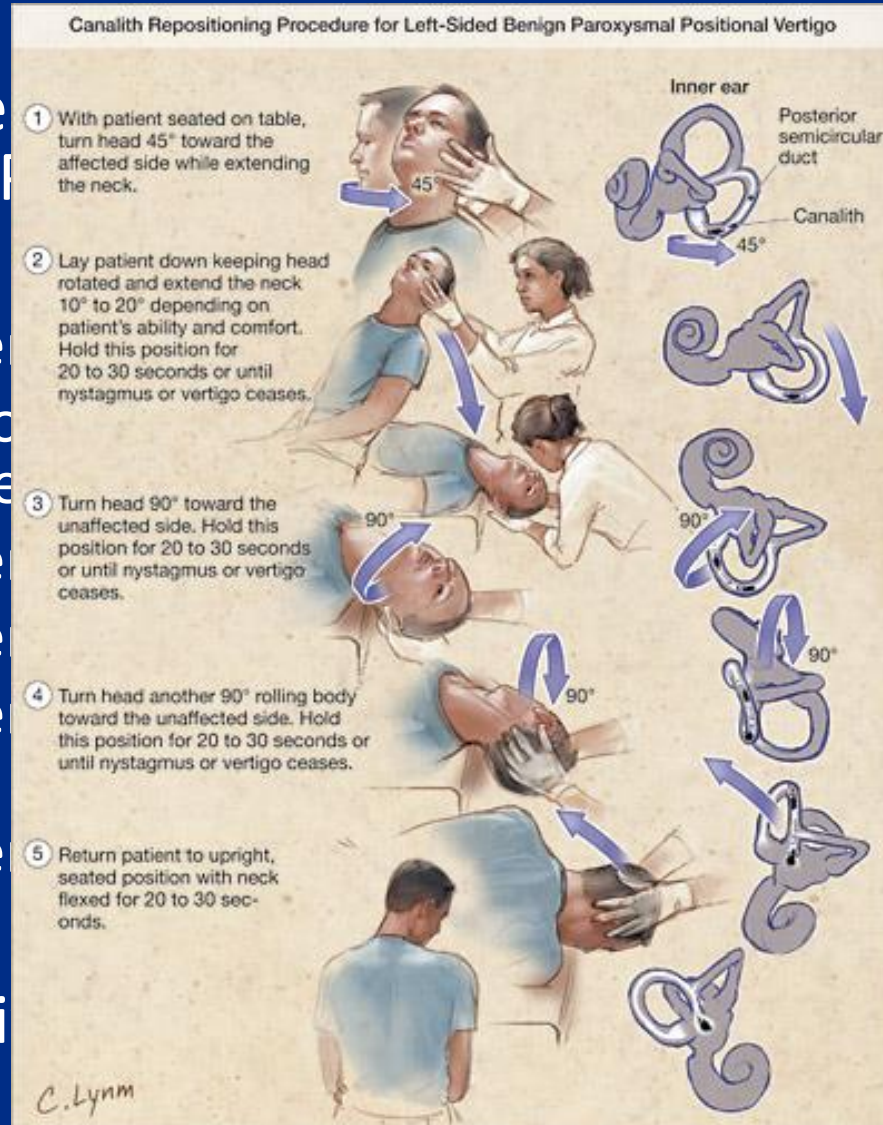
5 seconds

entral

r ear or

Epley's maneuver

- A maneuver for benign paroxysmal positional vertigo (BPPV)
- Stages:
 - The patient is seated
 - Head is rotated 45 degrees
 - The patient is tilted back
 - The patient is rolled onto the unaffected side
 - The patient is returned to upright
- Repeat 2-3 times
- Very effective



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for 5 min
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30 sec

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