PRACTICAL APPROACH TO DIZZINESS

Mohamed Elrakhawy, MD
Assistant Professor
Department of Otolaryngology-Head and Neck Surgery
Rush University Medical Center

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- **“There can be few physicians so dedicated to their art that they do not experience a slight decline in spirits on learning that their patient’s complaint is dizziness.”**

  W.B. Mathews (20th century neurologist)

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What makes dizziness difficult?

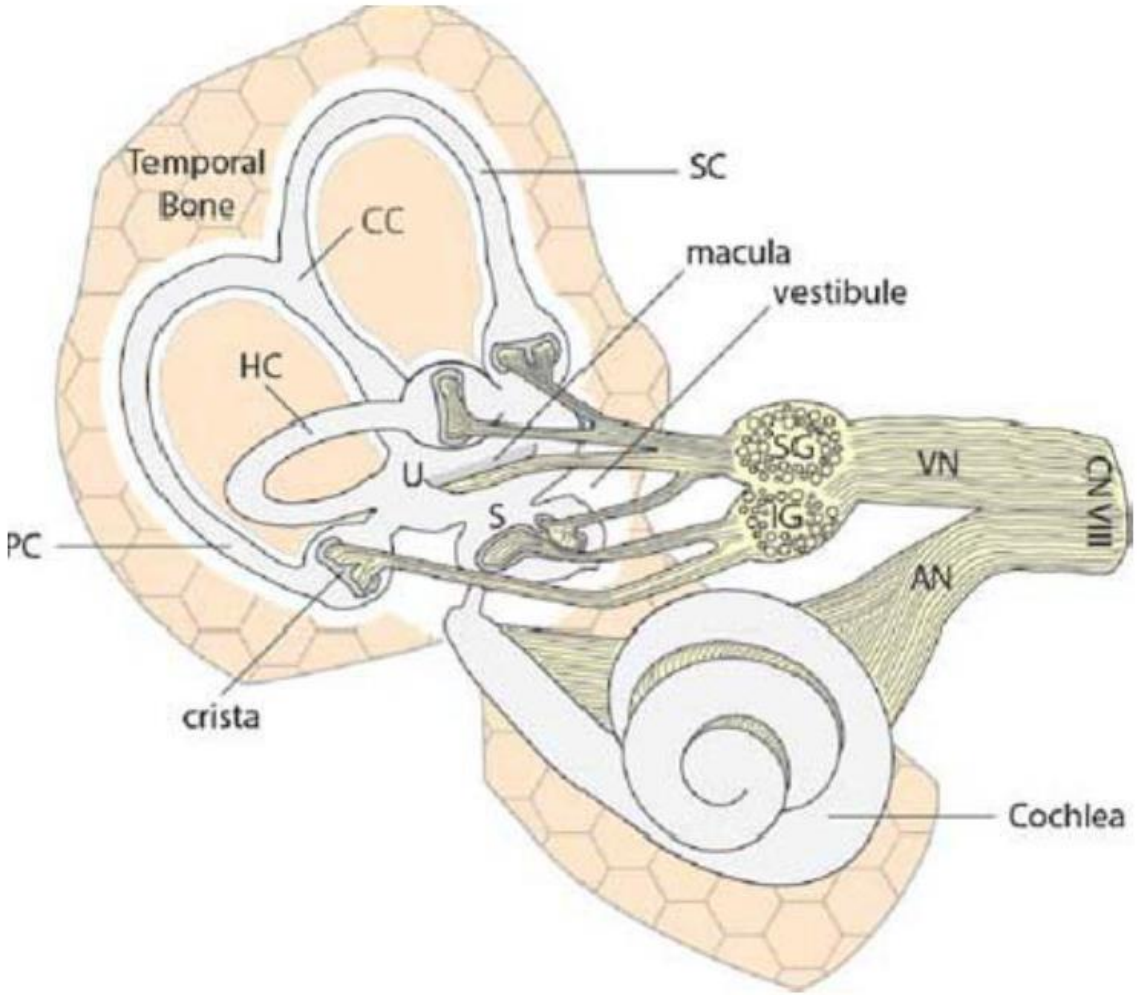
- Dizziness has **many causes**
- Time for history and evaluation is **limited**
- Patients demand/require **immediate relief**
- Symptoms related to dizziness are **difficult to describe**

Goals

- Improve ability to recognize common disorders that cause dizziness
- Understand pathophysiology of common disorders that cause dizziness
- Become familiar with initial treatments which may be effective

NOT Goals

- Comprehensively review of disorders
- Understand laboratory testing
- Learn a comprehensive vestibular exam
- Understand current surgical treatments


Temporal Bone
SC
CC
macula
vestibule
HC
SG
VN
CN VIII
U
S
IG
PC
AN
crista
Cochlea

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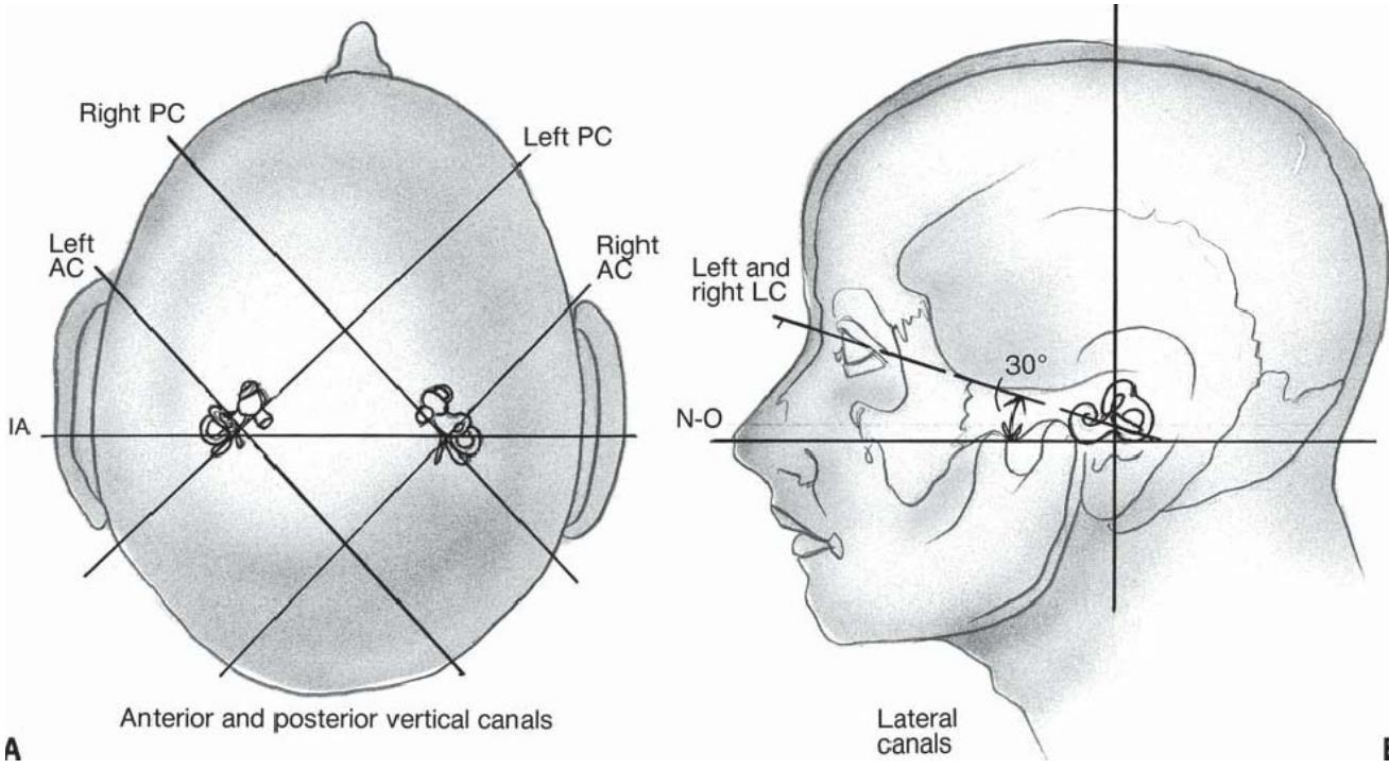
Right PC
Left PC
Left
AC
Right
AC
IA
Anterior and posterior vertical canals
A
Left and
right LC
30°
N-O
Lateral
canals

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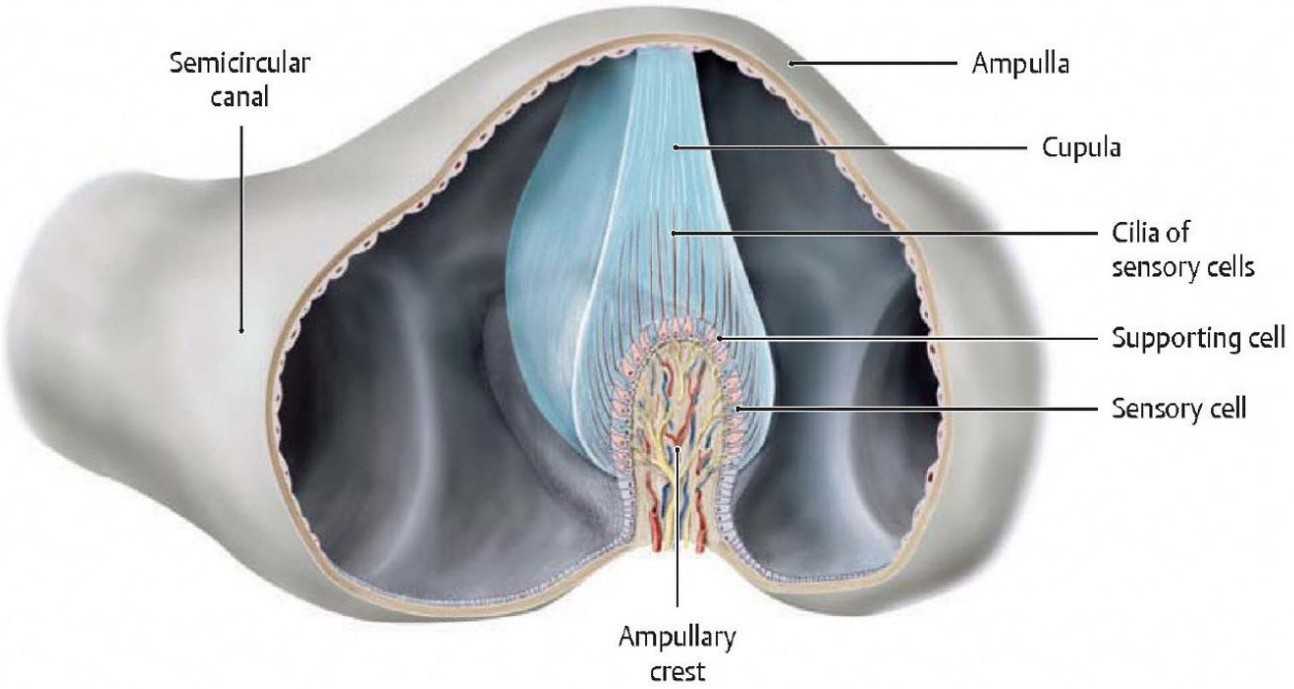
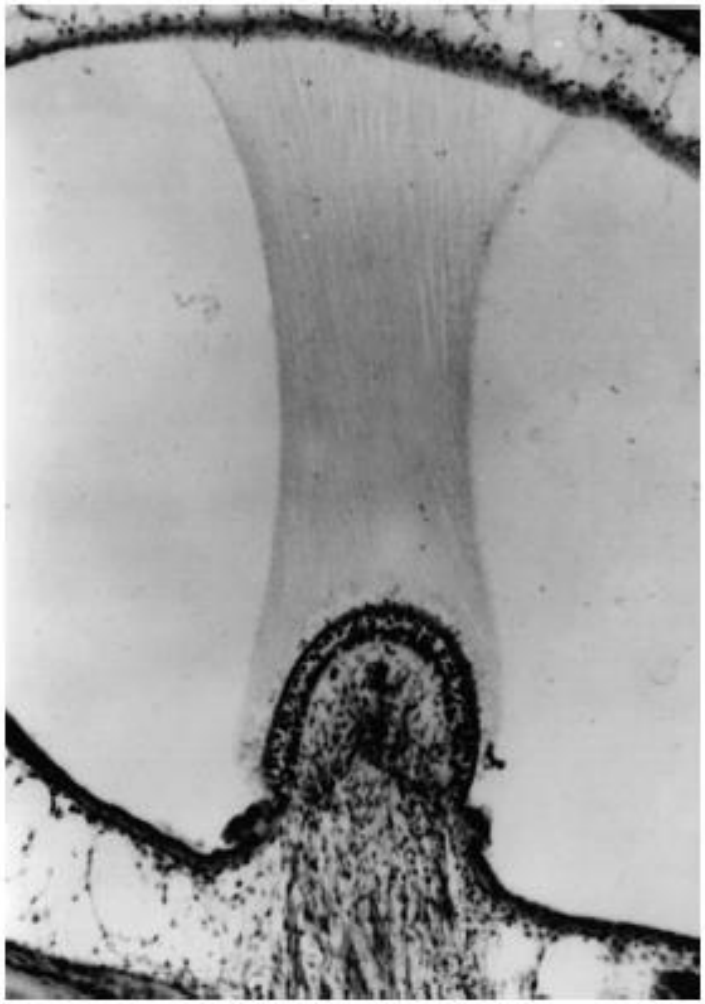

Semicircular canal
Ampulla
Cupula
Cilia of sensory cells
Supporting cell
Sensory cell
Ampullary crest



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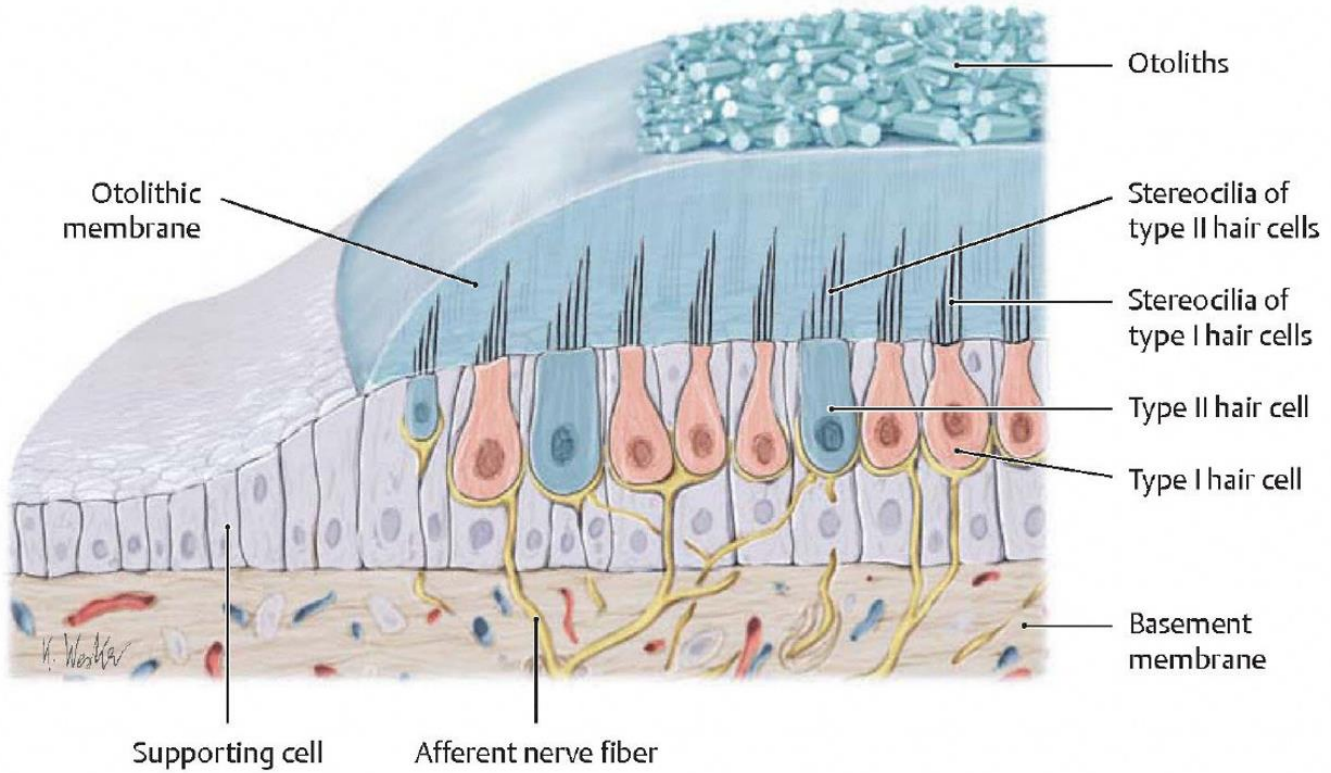
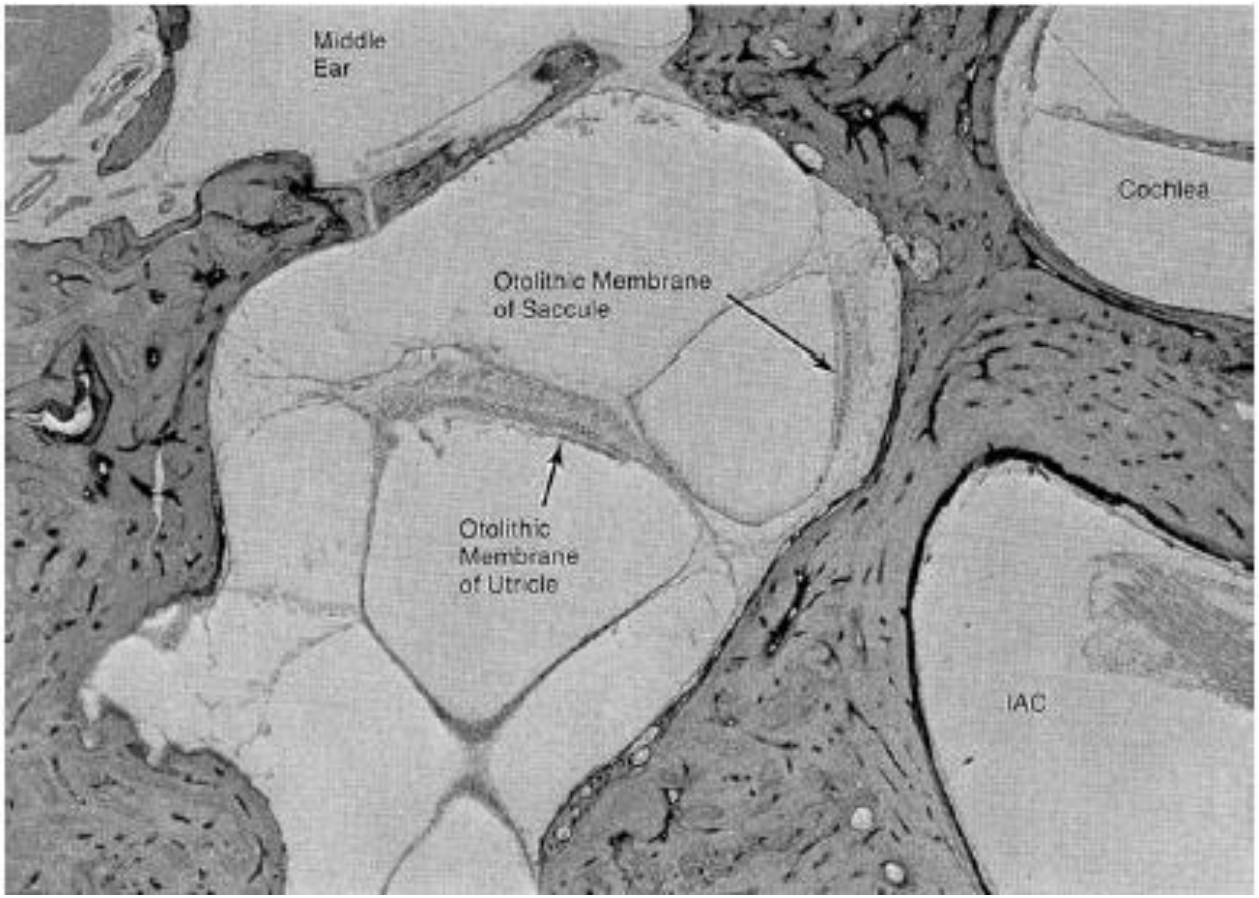

Otoliths
Otolithic membrane
Stereocilia of type II hair cells
Stereocilia of type I hair cells
Type II hair cell
Type I hair cell
Basement membrane
Supporting cell
Afferent nerve fiber


Middle
Ear
Cochlea
Otolithic Membrane
of Saccule
Otolithic
Membrane
of Utricle
IAC

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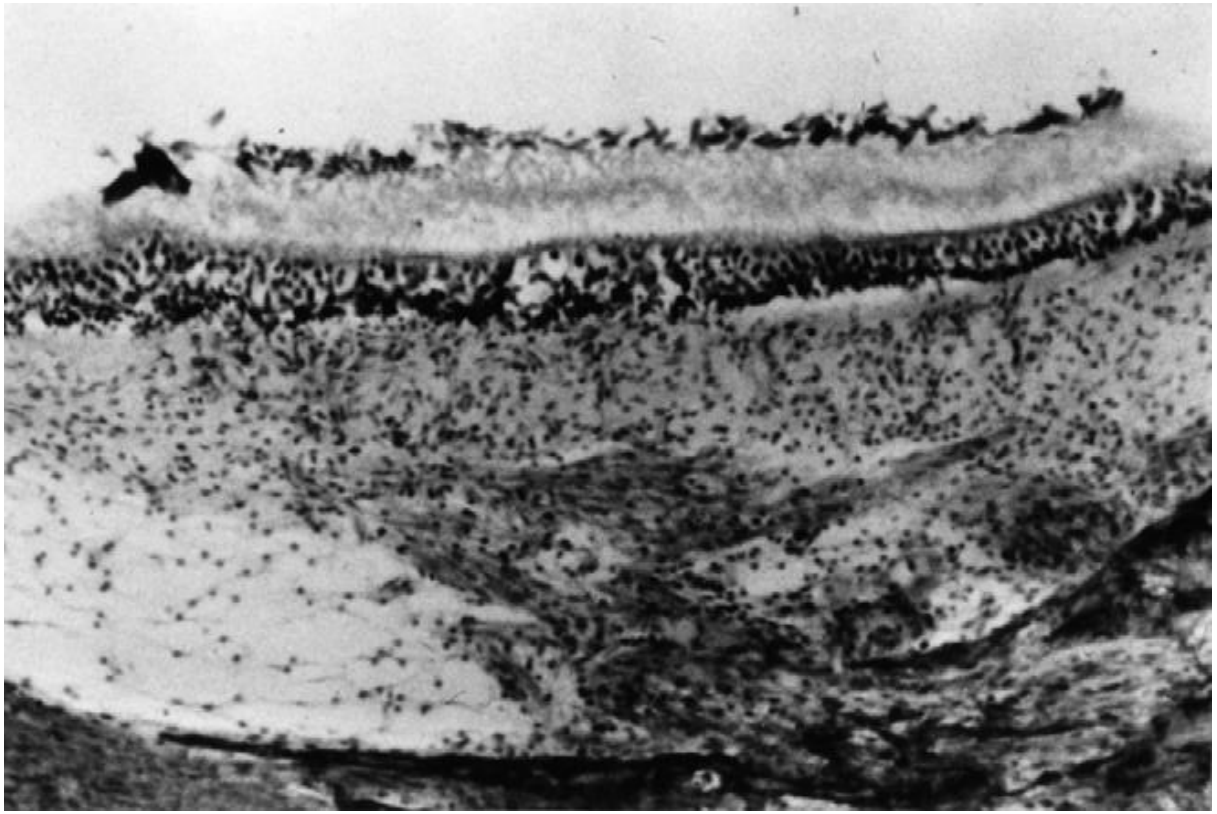

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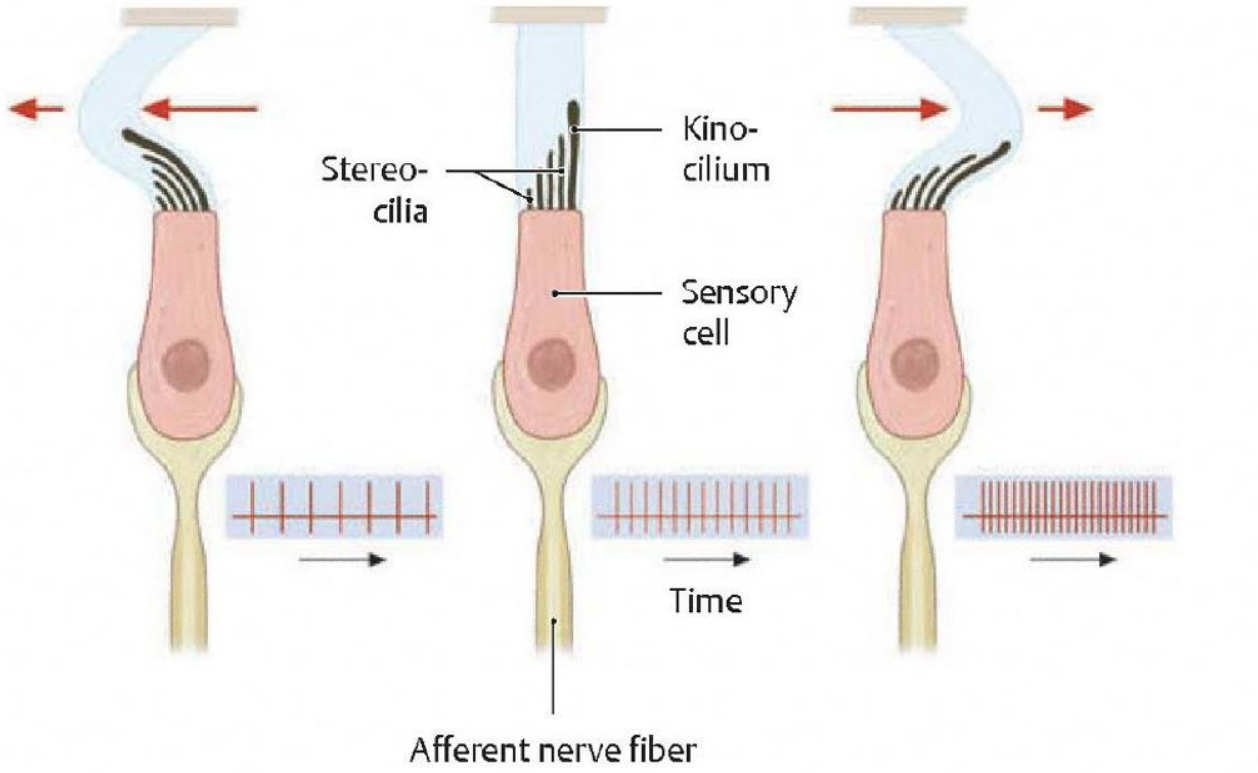
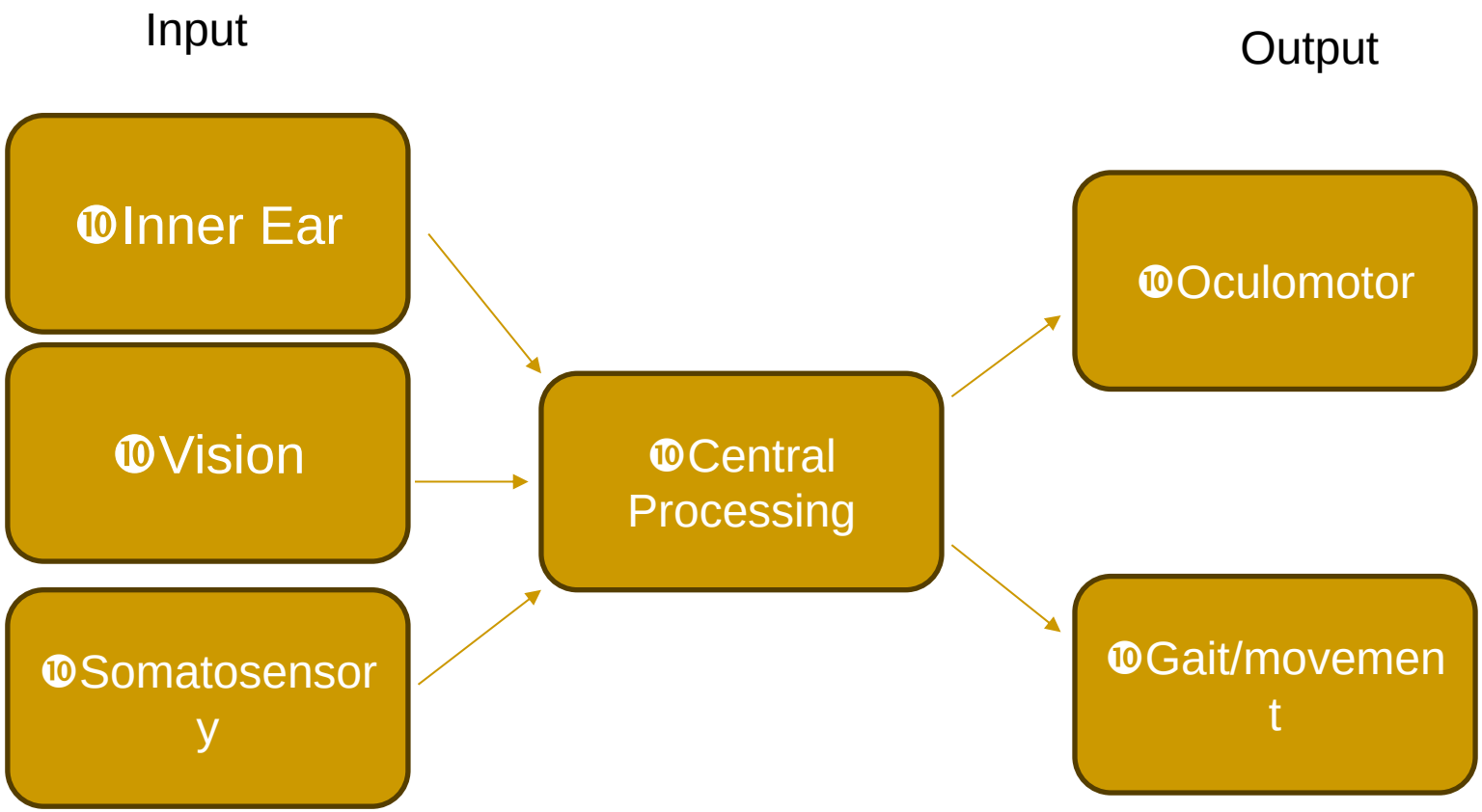
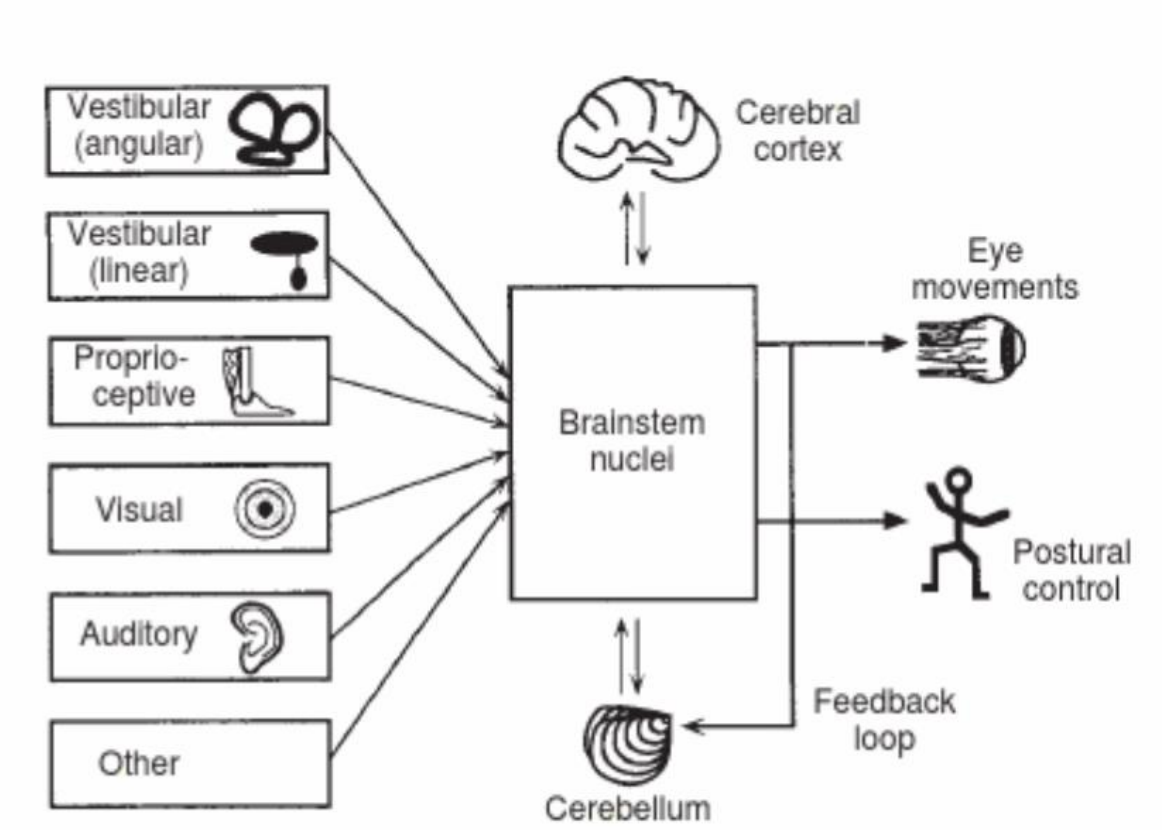

Stereo-
cilia
Kino-
cilium
Sensory
cell
Time
Afferent nerve fiber


Input
Output
Inner Ear
Vision
Somatosensory
Central Processing
Oculomotor
Gait/movement


Vestibular (angular)
Vestibular (linear)
Proprio-ceptive
Visual
Auditory
Other
Cerebral cortex
Brainstem nuclei
Cerebellum
Eye movements
Postural control
Feedback loop

HISTORY

THE MOST IMPORTANT TOOL TO USE TO ASSESS DIZZY PATIENTS

TYPE

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Types of “dizzy”

Lightheadedness

Disequilibrium

True vertigo

Trajectory of Dizziness

VN

BPPV

Meniere's

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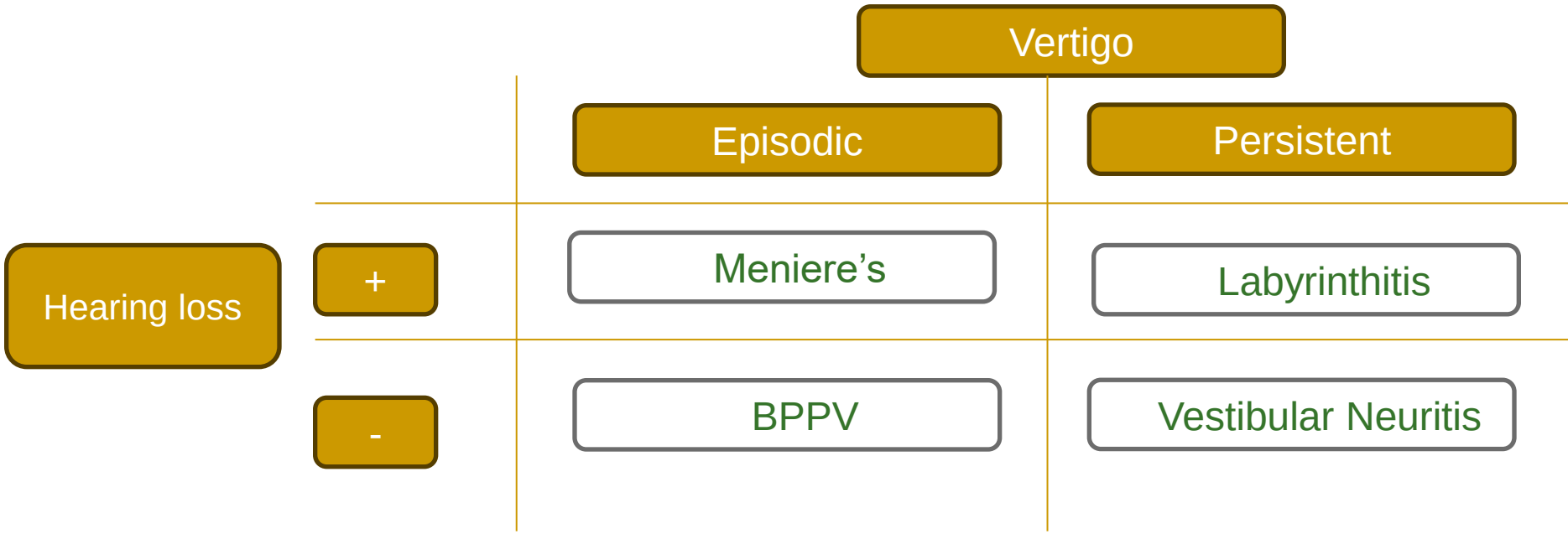
Matrix of acute vertigo

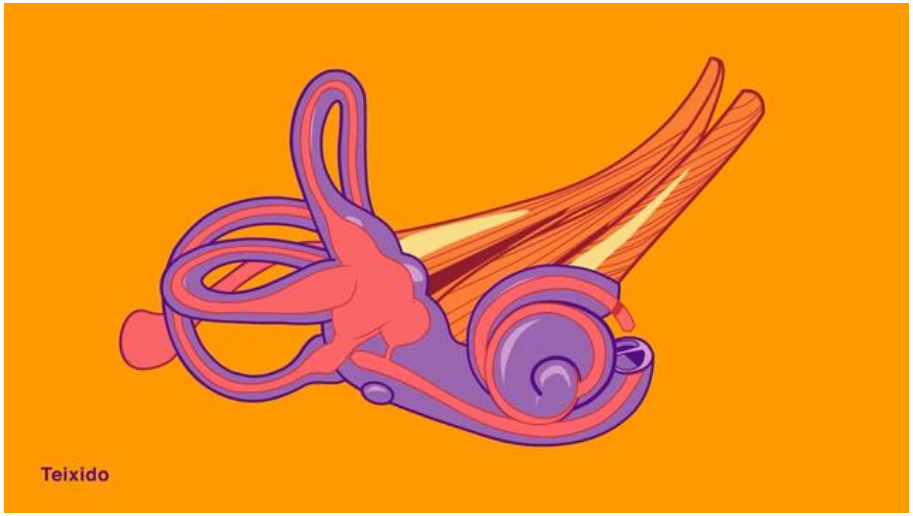


Meniere's disease

Episodic vertigo associated with Aural Pressure, Fluctuations in Hearing and Tinnitus

Patients can tell which ear is causing the attack (**unilateral**)

Attacks last **hours**



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Meniere's disease-treatment

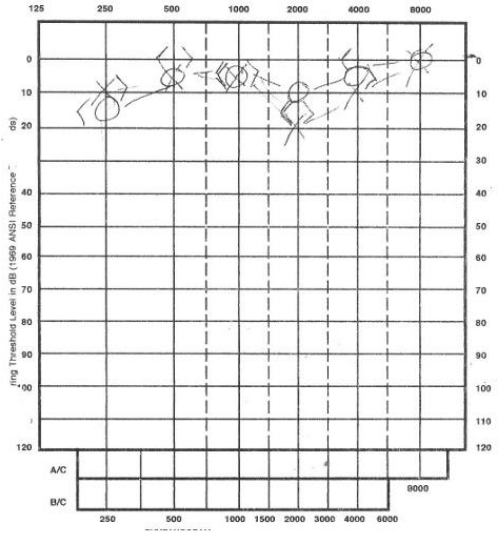
- Intratympanic Steroids
- Intratympanic Gentamycin
- Labyrinthectomy

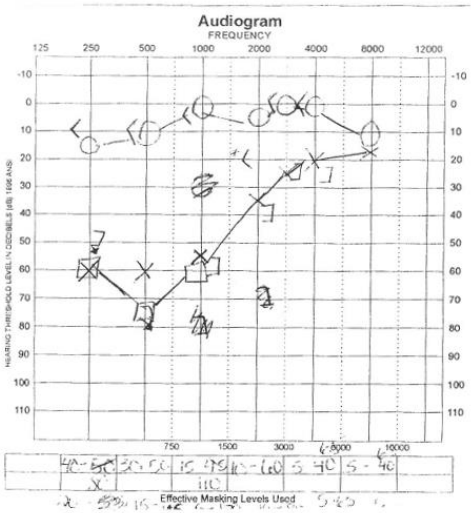
Salt restriction/Diuretics-if salt sensitive

Endolymphatic Sac Surgery

Labyrinthectomy

Vestibular Suppressants PRN





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Benign Paroxysmal Positional Vertigo

Understand BPPV in one minute

Michael Teixido, M.D.

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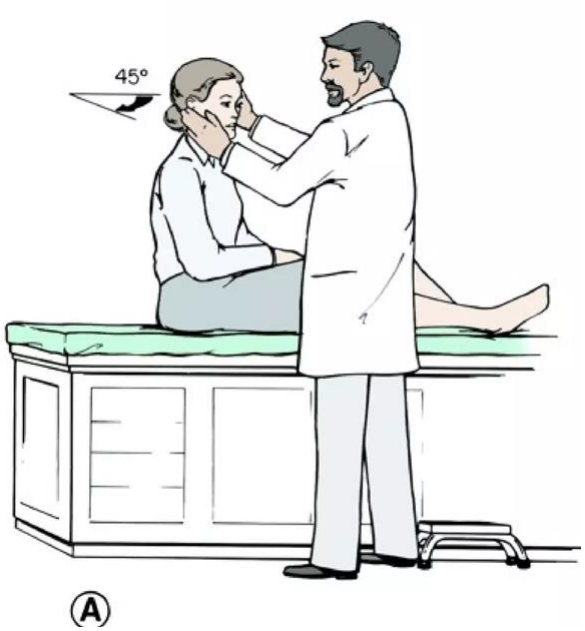
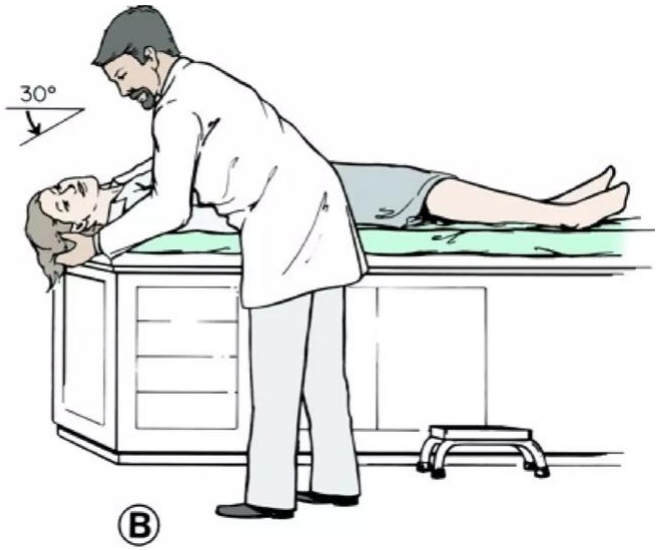
Benign Paroxysmal Positional Vertigo

- Short bursts of vertigo – 5-30 seconds
- Changes in head position
- Symptoms disappear for weeks
- Often follows head trauma or neuronitis
- Constant low-grade disequilibrium is common
- Often coexists with other conditions

BPPV-Diagnosis





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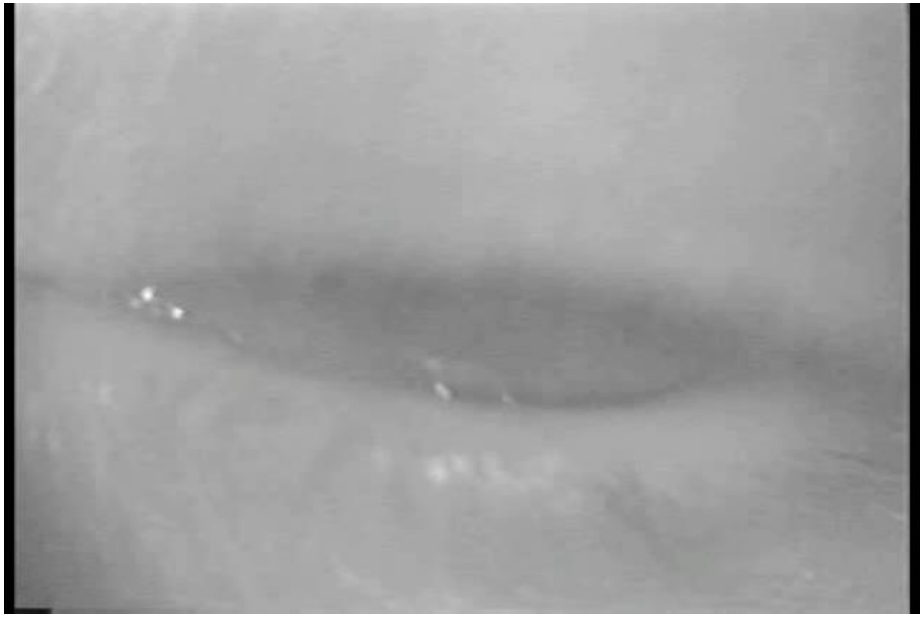
BPPV-Diagnosis



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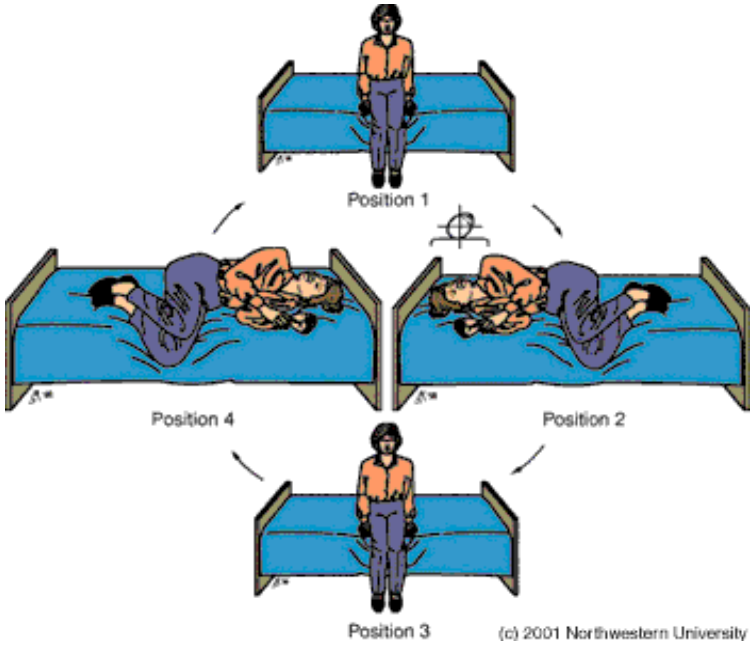
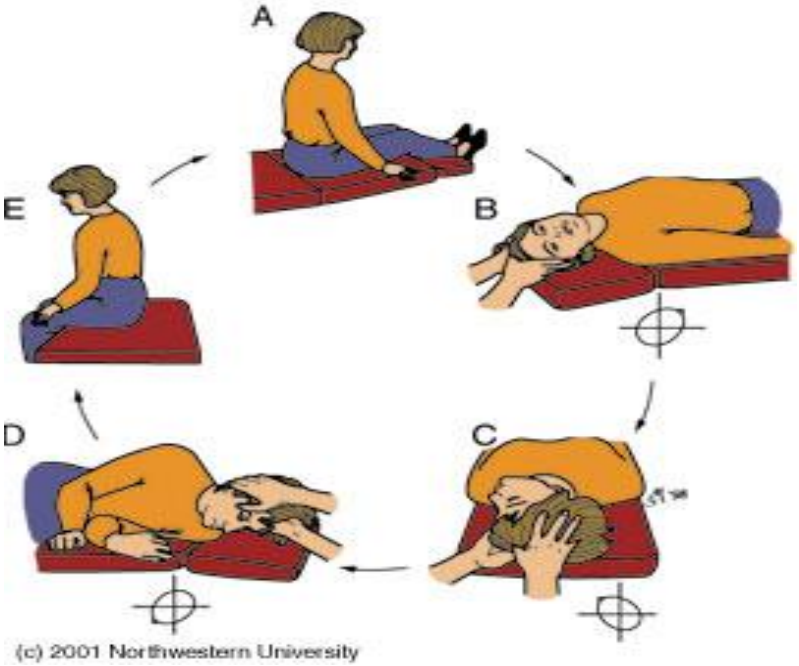
Bppv-treatment





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Vestibular neuritis/Labyrinthitis

Viral neuritis causes sudden labyrinthine paralysis

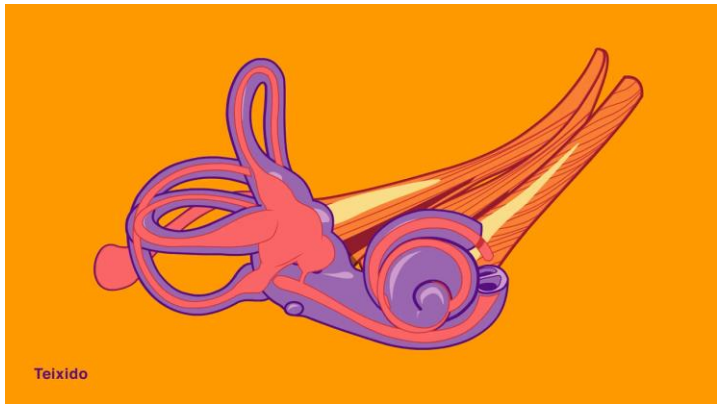
Sudden onset with little warning

Severe vertigo with nausea/vomiting

Attack lasts a full day at maximum intensity then slow resolution

Single attack

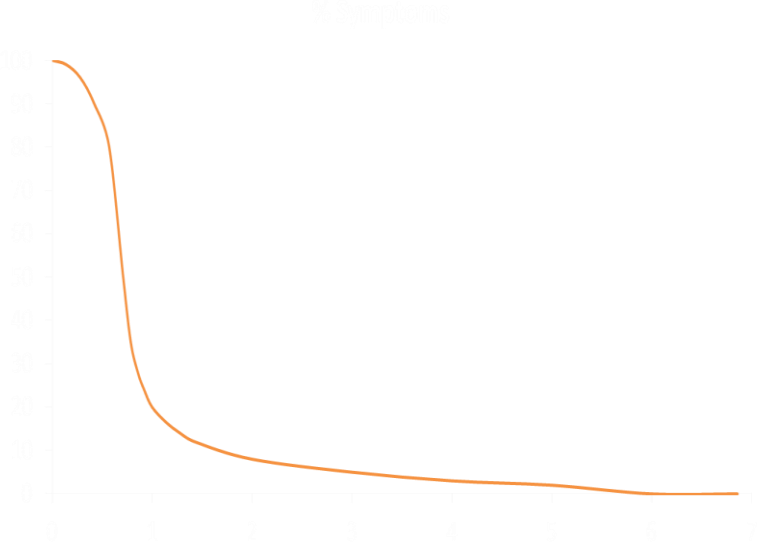
If associated with hearing loss: labyrinthitis



Vestibular neuritis/Labyrinthitis

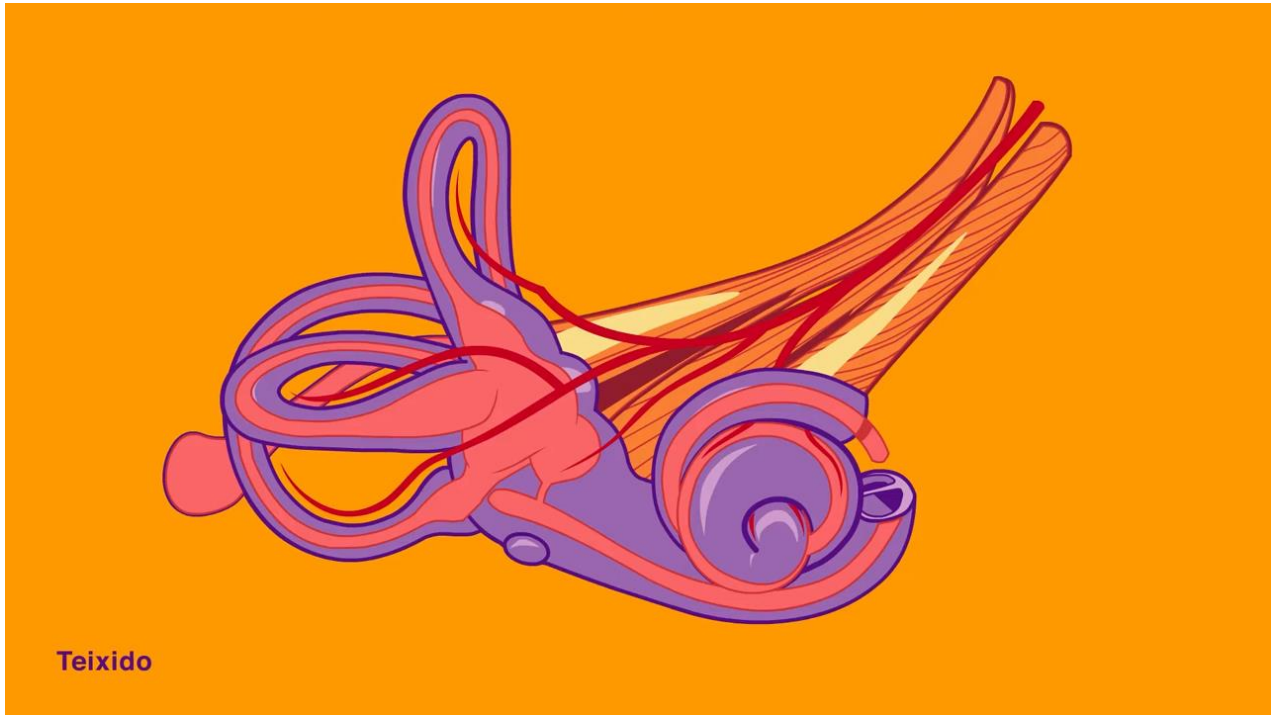
Vestibular suppressants until vomiting and severe nausea pass – Meclizine, Diazepam

Start Vestibular Physical Therapy in one week



What if it doesn't fit in the matrix?

- Vestibular Migraine



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What is migraine?

- Disorder characterized by episodic attacks of head pain and associated symptoms, such as nausea, sensitivity to light, sound, or head movement

Highly variable presentation

Headache not necessarily present

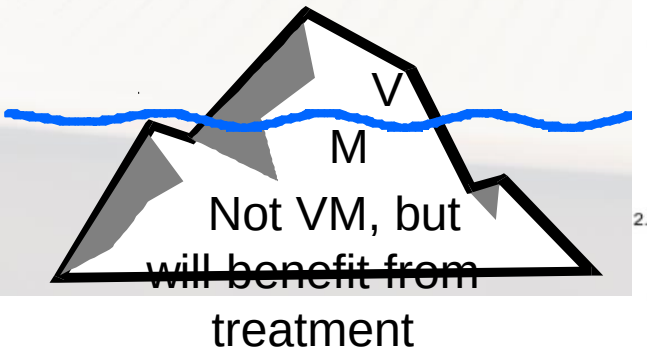
More common in women

What is vestibular Migraine?

- The symptoms may be described **spinning**, **rocking**, **disorientation in space**, **lightheadedness**, **swaying**, or simply **disequilibrium**.
- **Variable in duration**, lasting seconds to days in episodic cases, or may present as constant disequilibrium lasting for months.
- **Triggerability** by foods ,stress, environment
- **Intolerance to movement** of the head or the visual world is a frequent finding.

Diagnostic criteria

- Necessary for epidemiologic and drug efficacy studies
- Used as exclusion criteria for treatment



1. **Vestibular migraine**

   A. At least 5 episodes with vestibular symptoms of moderate or severe intensity, lasting 5 min to 72 hours.
   B. Current or previous history of migraine with or without aura according to the International Classification of Headache Disorders (ICHD)[9]
   C. One or more migraine features with at least 50% of the vestibular episodes:
      - o headache with at least two of the following characteristics: one sided location, pulsating quality, moderate or severe pain intensity, aggravation by routine physical activity
      - o photophobia and phonophobia,
      - o visual aura
   D. Not better accounted for by another vestibular or ICHD diagnosis[9]

2. **Probable vestibular migraine**

   A. At least 5 episodes with vestibular symptoms of moderate or severe intensity, lasting 5 min to 72 hours
   B. Only one of the criteria B and C for vestibular migraine
   C. Not better accounted for by another vestibular or ICHD diagnosis[9]

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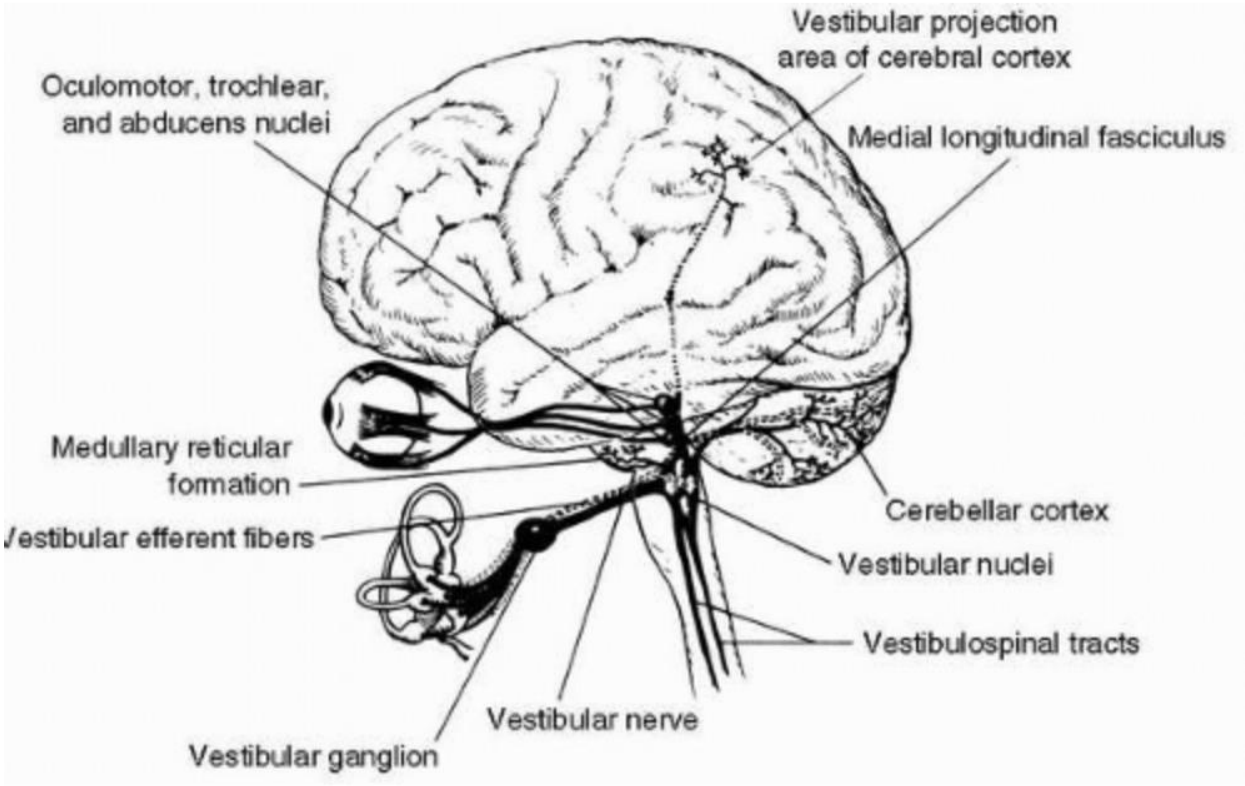
Vestibular projection
area of cerebral cortex
Oculomotor, trochlear,
and abducens nuclei
Medial longitudinal fasciculus
Medullary reticular
formation
Vestibular efferent fibers
Cerebellar cortex
Vestibular nuclei
Vestibulospinal tracts
Vestibular nerve
Vestibular ganglion

Vestibular migraine-treatment

- Trigger identification and avoidance and migraine prophylaxis
- Rx: Nortriptyline, Propranolol, Topiramate
- PT *not* helpful
- Vestibular testing: torture

- May be the cause of BPPV or Ménière's disease!

Conclusion

40%	BPPV- Most Common/Positioning Vertigo/Hallpike Maneuver/Brandt-Daroff Exercises
40%	Vestibular Migraine- Second most common. Routine prevention/prophylaxis management
10%	Vestibular Neuronitis- One Long Severe Attack Suppressants Early/Vestibular PT
3-5%	Ménière's Disease- Rare. Recurring Sudden Attacks of Fullness, Hearing Loss and Tinnitus/Steroids, Salt-Restriction/Migraine Rx/Suppressants PRN

Questions?

mohamed_elrakhawy@rush.edu