

The Dizzy Patient

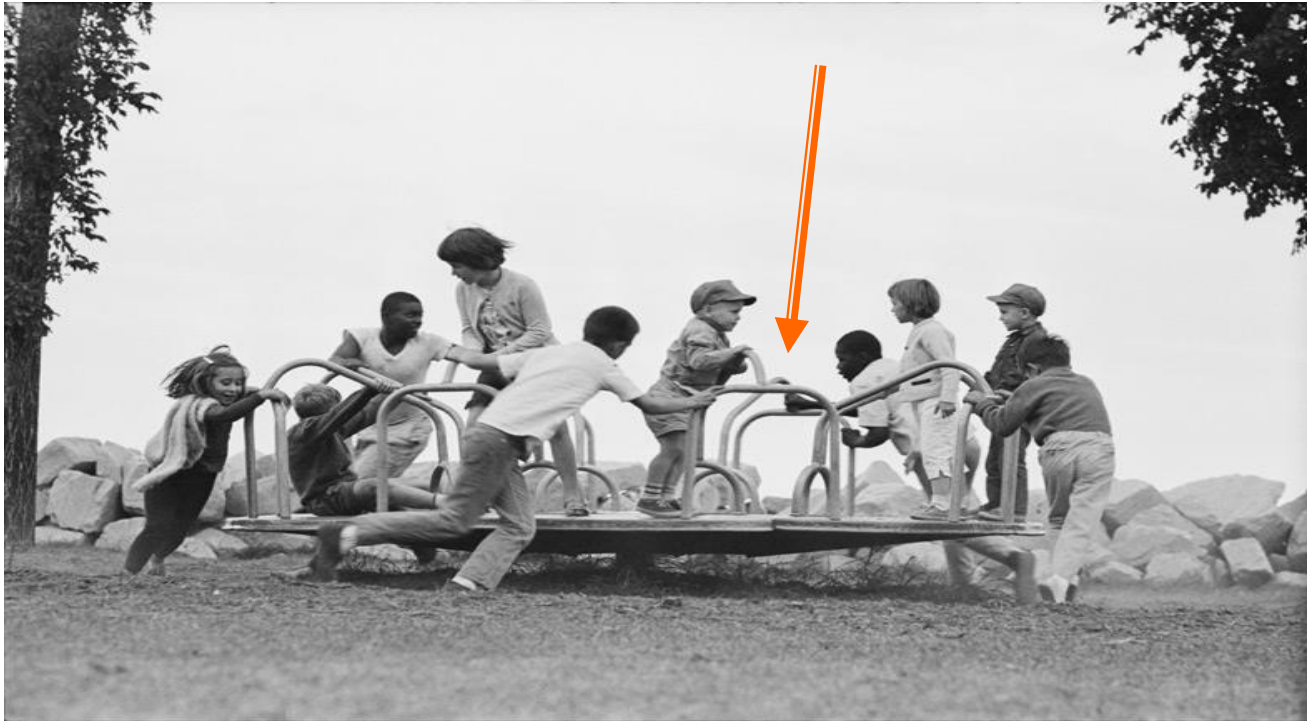
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Balance

- The ability to control/maintain equilibrium

Static Equilibrium

1) keep the body in a desired position,



Static equilibrium –The equilibrium is maintained in a **FIXED POSITION**, maintenance of body posture relative to gravity while the body is still.

Dynamic Equilibrium

2) move the body in a controlled way .

Dynamic equilibrium The equilibrium must be maintained **while performing a task** which involves MOVEMENT e.g. Walking the beam. – maintenance of the body posture (mainly the head) in response to sudden movements. Tracking a moving object.

Systems regulating body balance

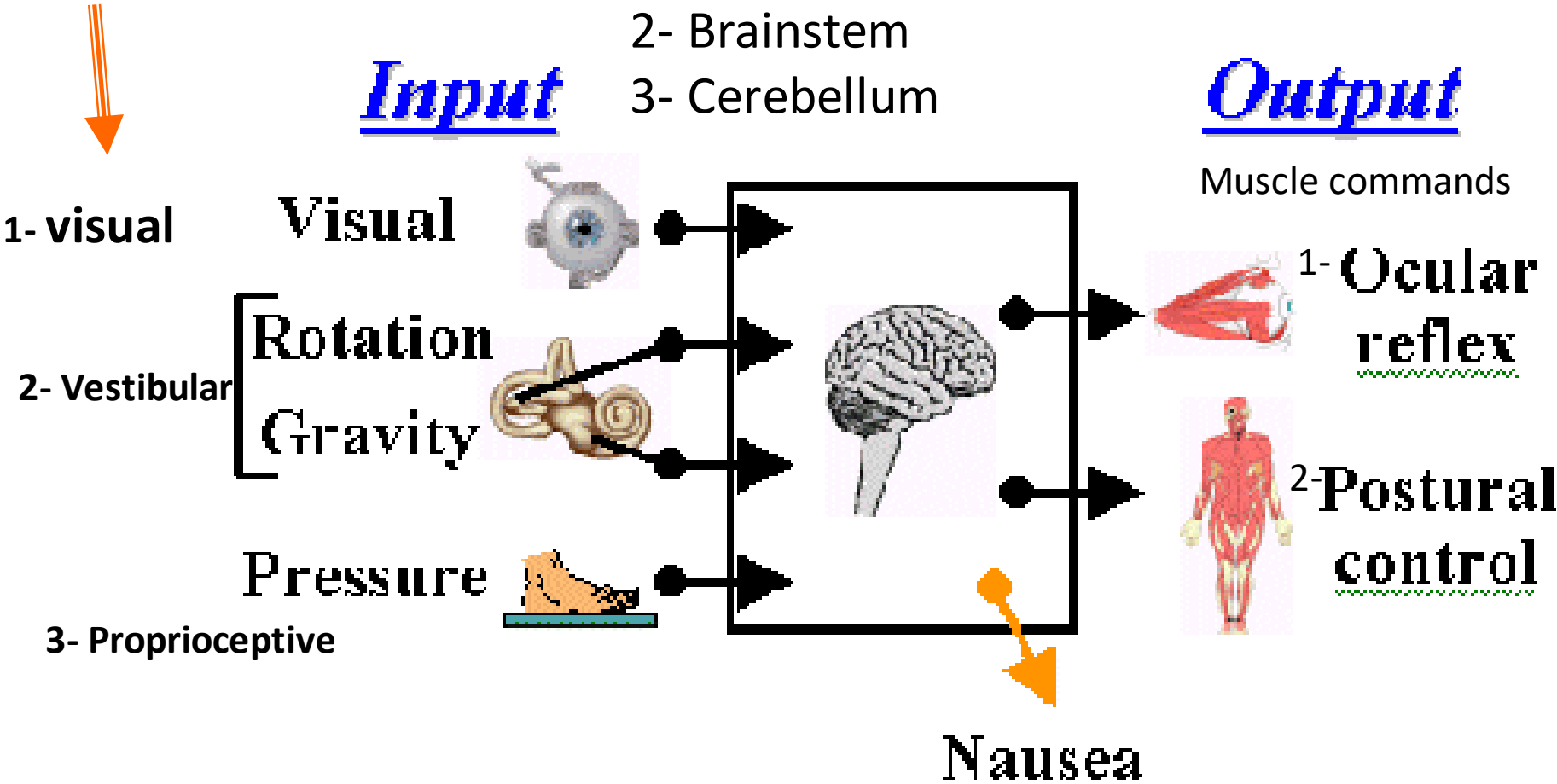
CNS

• Humans use three systems:

- 1- Cerebral cortex
- 2- Brainstem
- 3- Cerebellum

Input

Output



History

- Non specific lightheadedness (woozy, giddy)
- Near syncope
- Unsteady/Imbalanced
- Vertigo

Near syncope/syncope

- Feeling that one is about to pass out
- Triggered by position change (supine/sitting/standing)
- Usually brief <5 minutes
- May have associated syncope

Etiology

Young patients- POTS

Syncopal variants- cough/micturition

Elderly- volume depletion, vasodilators, peripheral neuropathy, autonomic failure

Non specific dizziness

- Vague/subjective complaints
- Usually no falls/veering
- Associated with anxiety, hyperventilation, anemia, concussion, depression

Unsteady/Imbalanced

- Often do not complain of light headedness or spinning.
- Report lurching/swaying to either side, concerned about falling
- Etiology
 - Loss of proprioception e.g severe neuropathy, myelopathy,
 - Cerebellar lesion

Vertigo

- Spinning is the hallmark
- D/dx dictated by characteristics of the vertigo
 - BPPV : Brief <30 seconds, triggered by rolling over in bed/turning head- relieved with holding the head still
 - Vestibular neuronitis : monophasic, vertigo constant lasting 2-3 days to >1 week, with nausea/vomitting, unsteady gait. Otherwise normal neurological exam

Vertigo

- Migrainous vertigo – spinning lasting 30 seconds to 30 mins or longer. Not positional, often followed by migraine headache. Patient usually has a history of either episodic or chronic migraine.
- Menieres disease – vertigo lasting minutes to hours, with associated gait imbalance and vomiting. Associated fullness in the ear, tinnitus and deafness. Multiple attacks with periods of remission in between.
- Vertebrobasilar insufficiency – Vertigo can occur, usually accompanied by brainstem symptoms i.e. dysphagia, dysarthria, diplopia etc. Can occur as TIA (usually <30 minutes duration) or stroke (persistent symptoms)

Case I

- 21 year old woman presents with 10 year history of recurrent spells of passing out.
- Usually occur during periods of stress, after exercise and in the summer.
- Preceded by lightheadedness, feeling faint, occur only when standing/upright position.
- LOC is brief <1 minute, and there is no confusion or other symptom during or after the spell
- Mom has a history of fainting during venepuncture.

Exam:

- BP 100/65 HR 73 RR18
- General and Neurological exam normal

Diagnosis?

Management?

Case 2

- 31 year old man with c/o dizziness. Has had it off and on for years- worse in the past 3 months
- No spinning, no falls, spells occur frequently often daily. Cant say how many times per day or how long each spell is.
- No imbalance, tripping or falls. Does not feel as if he is going to pass out.
- No association with change in position
- Employed in Oil and Gas Sector- 25% workforce laid off in December, 2015

Case 2

- Normal exam

Diagnosis?

Treatment?

Case 3

- 60 year old woman with 10 year history of DM. On insulin for 5 years, HbA1C 9.2
- Reports feeling faint/about to pass out when she first gets out of bed in the morning. Has to sit at the edge of the bed for a few minutes to avoid falling.
- Spells occur consistently with change in position, started infrequently a year ago, occurring daily now.
- Admitted to the hospital 2 weeks ago with a syncopal spell after getting out of bed in the morning. Workup in the hospital included MRI brain, MRA head and neck, CT head, 2D Echo- all normal.

Case 3

- Exam: BP supine 150/85, HR 70, Standing 110/60 HR 75
- Neurological exam: reflexes trace throughout and decreased proprioception at the big toe bilaterally, + romberg
- Diagnosis?
- Treatment?

Case 4

- 69 year old cardiologist presents with 8 month history of dizziness.
- He describes this as unsteadiness when running. He reports that his left leg drags when he tries to walk fast or run. He gave up playing tennis 3 months ago. He also reports transient migratory tingling in the hands and left knee.
- Medical history DM on metformin, HbA1C 6.1

Case 4

- Exam: BP 138/82 HR81
- Neurological Exam: Reflexes 3+ throughout, + Hoffman sign bilaterally, Babinski + bilaterally, + ankle clonus bilaterally, + Romberg
- Diagnosis?
- Treatment?



Case 5

- 28 year old woman presents with 2 week history of vertigo. She describes a persistent spinning sensation for the past 2 weeks, slowly improving. The spinning is constant with episodic exacerbation with sudden head movement. She also reports horizontal diplopia for the past 2 weeks.
- 6 months ago she had painful loss of vision in the left eye that lasted 4 weeks and resolved spontaneously without any treatment.

Case 5

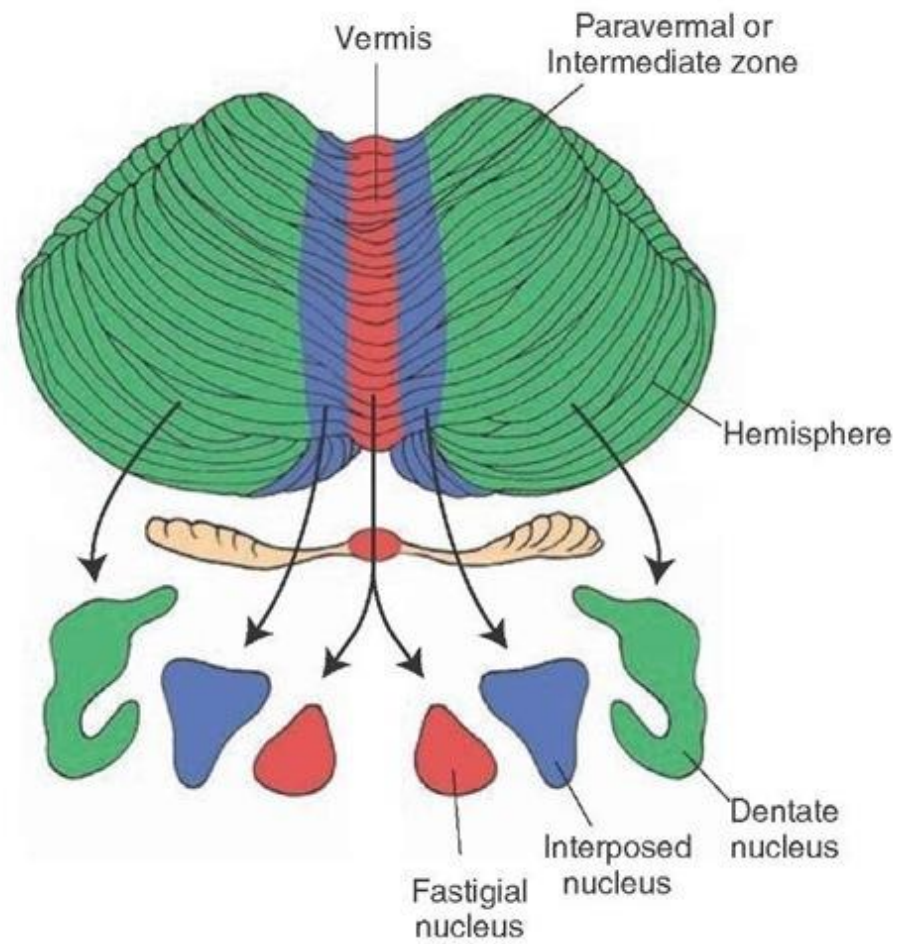
- Exam : VSS
- Neurological Exam:
- Mild weakness of the right eye abduction
- Mild dysmetria right F-N testing
- + Romberg
- Diagnosis?
- Treatment?

Case 6

- 21 year old woman presents with 1 month history of dizziness and headache.
- Dizziness- patient describes this as a sense of being imbalanced, like she is about to topple over, particularly when making turns. There is no feeling of fainting or vertigo.
- Headache is constant, aching, pressure like, primarily occipital, with occasional nausea.
- Headaches are worse at night and with coughing and sneezing

Case 6

- Exam: VSS
- Neurological exam: Romberg +, Finger to nose no dysmetria, cannot stand on one foot.
- Diagnosis?
- Treatment?



Case 7

- 61 year old man with brief spells of vertigo for >20 years
- Spells of spinning sensation- last anywhere from 5 to 60 seconds at a time. Frequency 0-3 times/day
- May or may not be triggered by change in head position
- Often associated nausea/vomitting
- No disturbance in hearing or other otological symptoms
- Sometimes, the vertigo spells are followed 30 minutes later by a throbbing headache which lasts several hours and is relieved with tylenol and coffee.
- Has seen numerous physicians over the past 20 years and is on meclizine 25 mg tid to treat these symptoms.
- Multiple prior CT/MRI brain scans normal

Case 7

- Exam: VSS, irregularly irregular pulse (known history of A fib- on coumadin)
- Neurological exam : Normal
- Diagnosis?
- Treatment?

Case 8

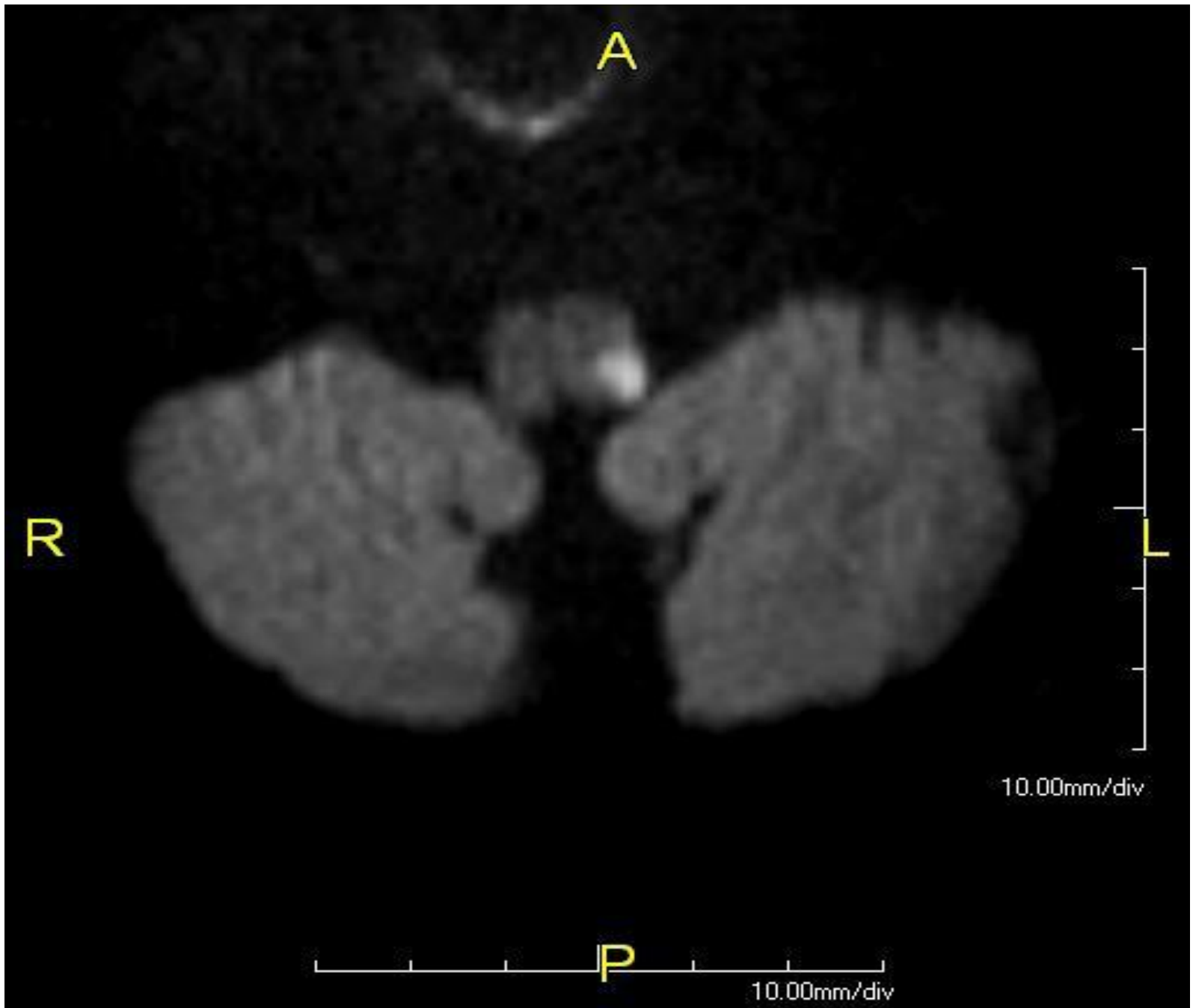
- 34 year old man, USOH until 1 day ago, was weightlifting (deadlifting 150 lbs). Sudden onset dizziness.
- Spinning sensation. Worse with movement, better but not gone on holding still.
- Gait severely impaired, lurching to one side
- Complained also of left facial “heaviness” and left sided neck pain

Case 8

- Exam: BP 175/90 HR 85
- Neurological exam: Mild left ptosis and left miosis, reports altered sensation on left face
- Left F-N dysmetria
- Dix Hallpike + bilaterally

Case 8

- Diagnosis?
- Treatment?





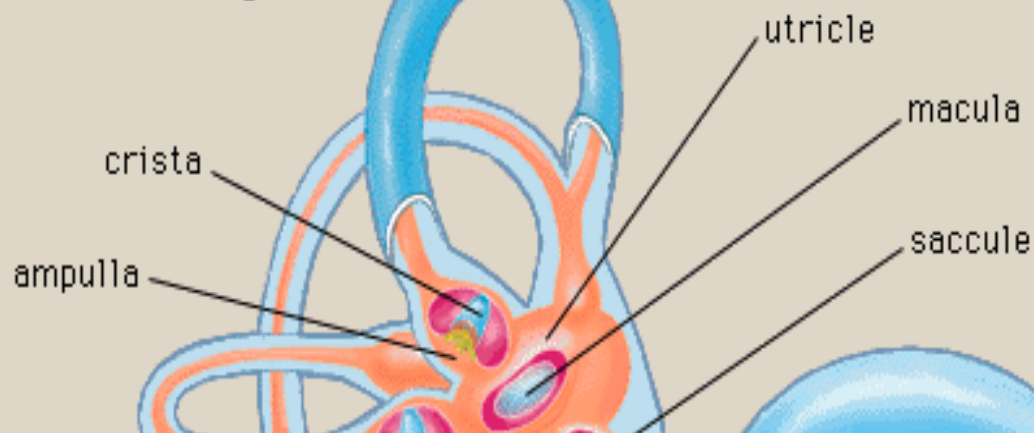
Case 9

- 55 year old man presents with 3 week history of vertigo.
- Spells are brief <1 minute in duration, occur 0-5 times per day.
- Always triggered by change in head position and relieved by holding head still
- Occasional nausea, no gait disturbance

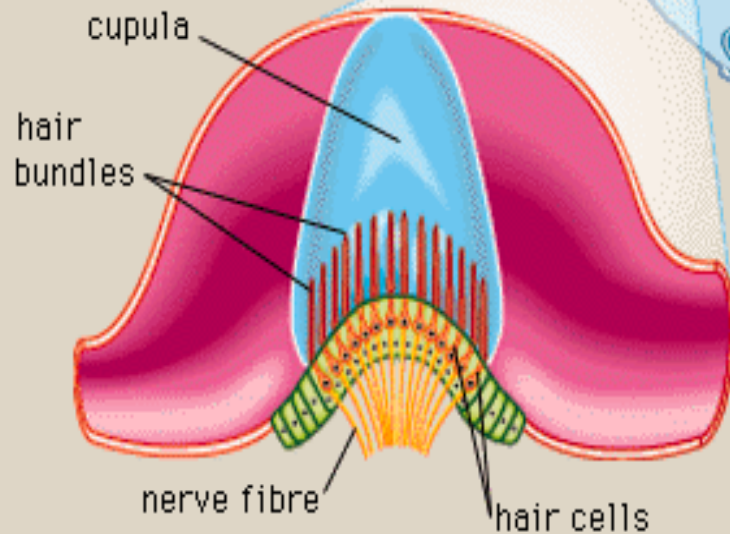
Case 9

- Exam: VSS
- Neurological Exam: Normal other than + Dix Hallpike on the right
- Diagnosis?
- Treatment?

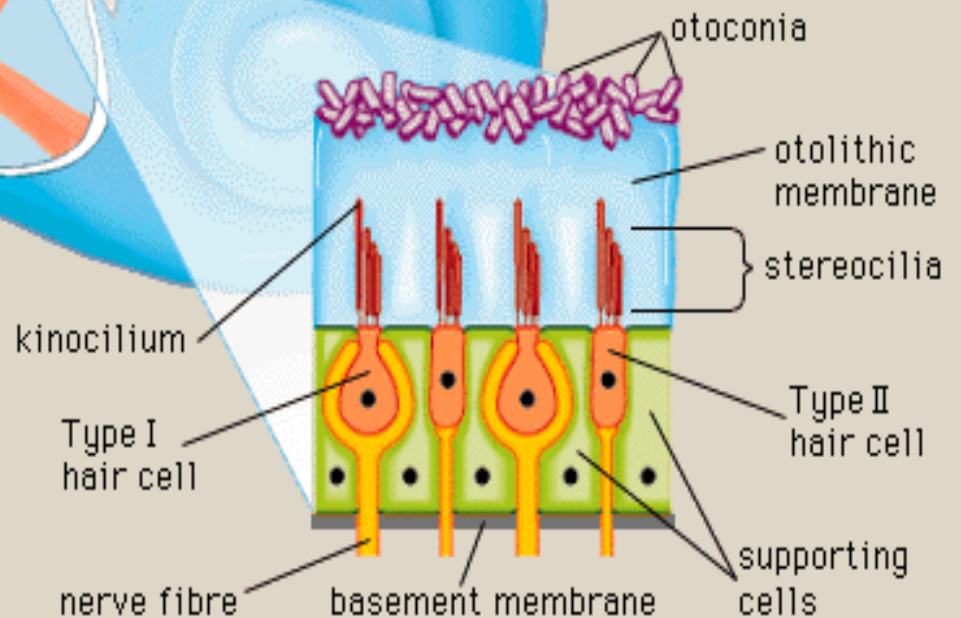
vestibular system



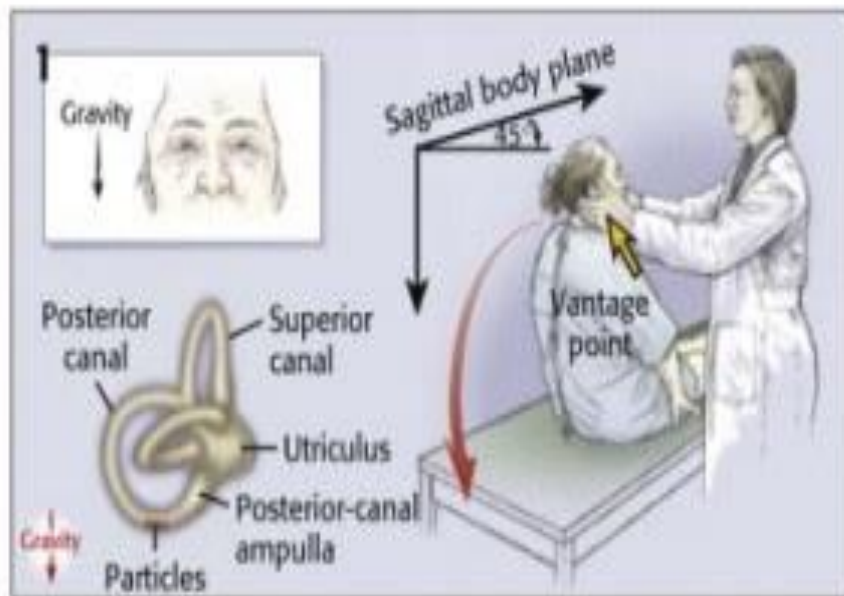
enlargement of crista



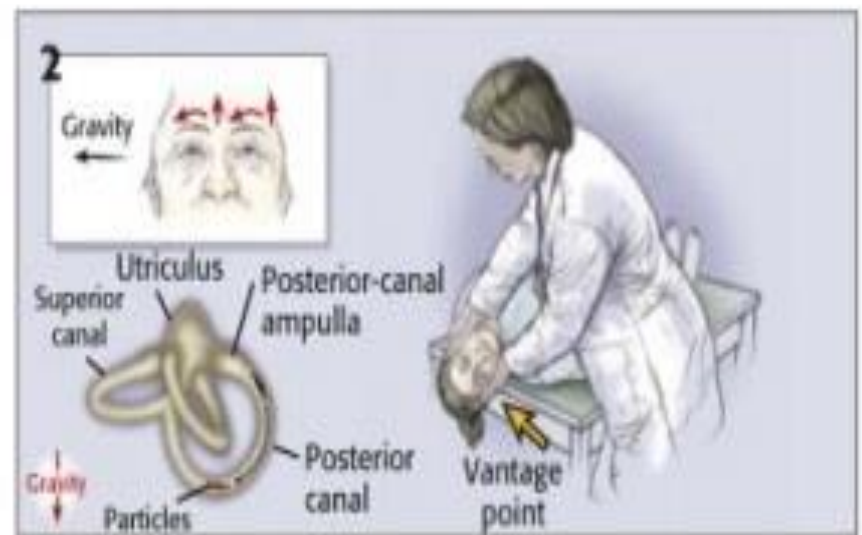
enlargement of macula



DIX-HALLPIKE MANEUVER



The examiner stands at the patient's head, 45° to the right, to align the right posterior semicircular canal with the sagittal plane of the body.



The examiner moves the patient, whose eyes are open, from the seated to the supine, right-ear-down position and then extends the patient's neck slightly so that the chin is pointed slightly upward. The latency, duration, and direction of nystagmus, if present, and the latency and duration of vertigo, if present, should be noted. *Inset:* The arrows over the eyes depict the direction of nystagmus in patients with typical BPPV. The presumed location in the labyrinth of the free-floating debris thought to cause the disorder is also shown.

Brandt Daroff Maneuver

