Bedside Assessment of the older person with dizzines

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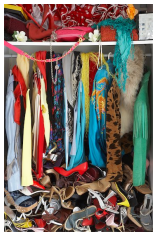
Dizziness

Syncope Falls

Tinetti et al (2000): Clinical Presentations in 261 Community Dwelling Older Adults

Characteristic	N (%)
Single sensation	114 (44)
Multiple sensations	146 (56)
Loss of balance	154 (59)
Only sensation	58 (22)
Plus other sensations	96 (37)
Spinning sensation	87 (33)
Only sensation	25 (10)
Plus other sensations	62 (24)
Near faint	106 (42)
Only sensation	31 (12)
Plus other sensations	78 (30)
Other presentations	44 (17)

You need a Framework



Making the diagnosis

HISTORY TAKING

Clinical examination

Specialist testing

History

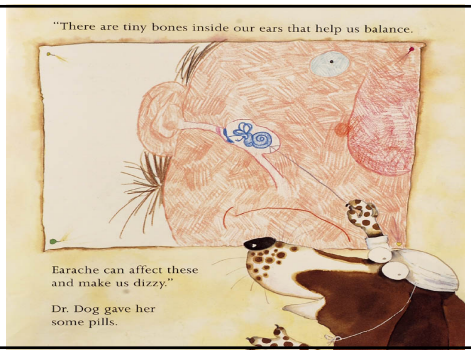
- Presyncope
- Unsteadiness /Gait Disorder – What Type
- Vertigo
- Non-specific

Vertigo “an illusion of movement” Tipping, not always rotation
Suggests peripheral or central vestibular cause
Difficult for patients to describe

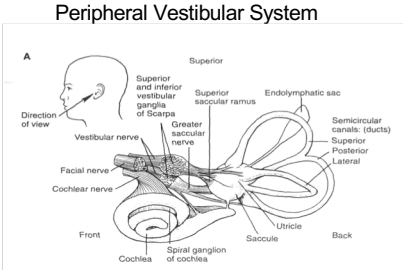
Which System is causing symptoms?

- Cardiovascular system
- Gait abnormality :
  - Lower level
  - Middle level
  - High level
- Peripheral vestibular system
- Central vestibular system

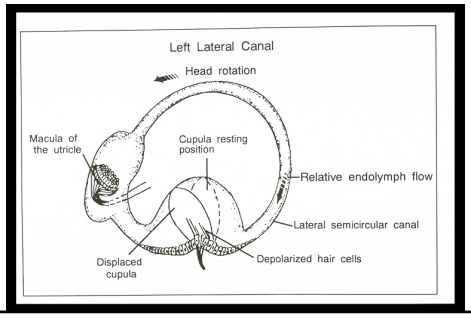
- Miscellaneous and ZZZZ words

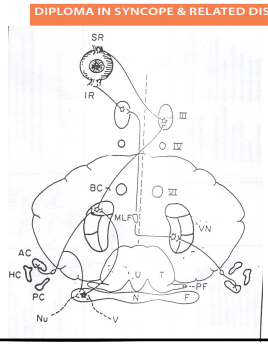


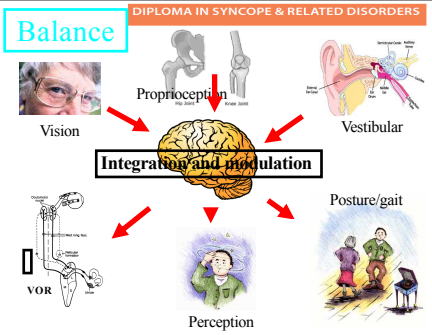
Peripheral Vestibular System



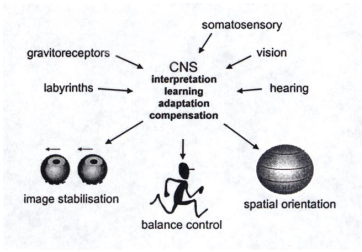
Cupula displaced







Maintenance of balance



Use the flow chart

- Is it vertigo
- Is it central or peripheral?
- Is it serious - RED FLAGS?
- Single episode
- Repeated episodes
- Is it spontaneous
- Is it provoked by head movement
- Or head position

Timing and Triggers in Acute Dizziness

Syndrome	Description	Common Benign Causes	Common Serious Causes
AVS	Acute, continuous dizziness lasting days, with nausea, vomiting, head motion intolerance, nystagmus and gait unsteadiness	Vestibular neuritis	Posterior circulation ischaemic stroke
s-EVS	Episodic dizziness that occurs spontaneously, is not triggered and lasts minutes to hours	Vestibular migraine Meniere's disease	TIA
t-EVS	Episodic dizziness brought on by a specific, obligate trigger (typically a change in head position or standing up) and lasting < 1 minute	BPPV	Orthostatic Hypotension Central paroxysmal positional vertigo

Examination

- What do you know and do anyway?
- Pulse, lying and standing BP
- Neurological examination cranial nerves, motor system, sensation, reflexes, cerebellar tests, proprioception
- Rombergs/Watch them walk
- Fire up the otoscope

Eye movement system

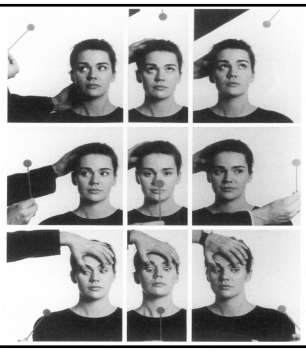
- The vestibulo-ocular and pursuit and saccade systems work cooperatively to stabilize gaze during head movements

Use MIKE

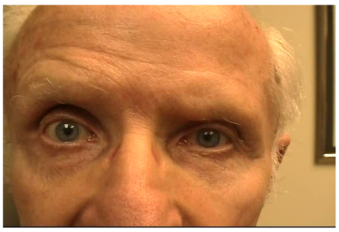
http://www.tutis.ca/Senses/L11EyeMovements/L11EyeMovements.swf

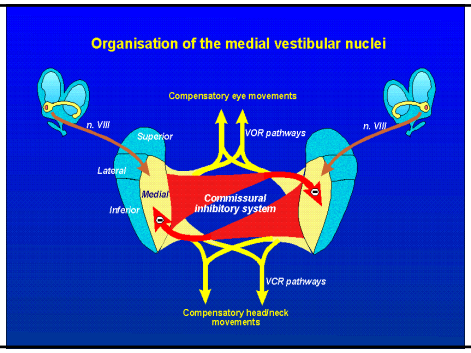
What are RED FLAGS?

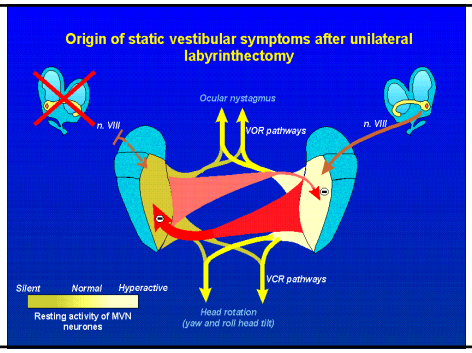
- CENTRAL OCULOMOTOR SIGNS
- Direction Changing nystagmus
- Abnormal saccades
- Very Broken smooth pursuit



Nystagmus







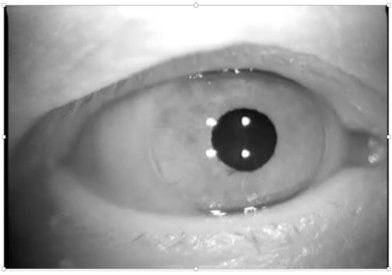
Static and Dynamic Defects from Acute Unilateral Vestibular Loss

Static Defects:

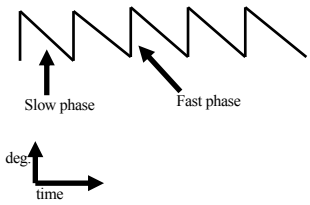
- **Spontaneous vestibular nystagmus**

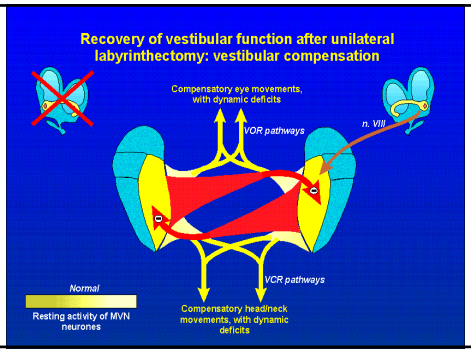
Dynamic Defects:

- Positive Head Thrust (decreased VOR)
- Decreased Dynamic Visual Acuity
- Head Shaking Nystagmus

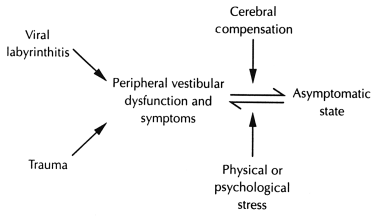


Saw-tooth or 'jerk' nystagmus





Vestibular compensation



Static and Dynamic Defects from Acute Unilateral Vestibular Loss

Static Defects:

- Spontaneous vestibular nystagmus
- Pathological ocular tilt

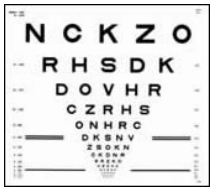
Dynamic Defects:

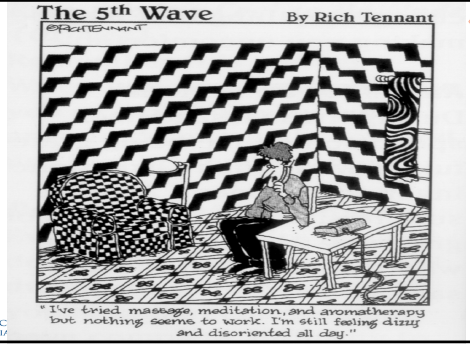
- **Positive Head Thrust (decreased VOR)**
- **Decreased Dynamic Visual Acuity**
- **Head Shaking Nystagmus**

Poorly compensated peripheral vestibular dysfunction

1º symptoms	2º symptoms
• Vertigo	• Neck pain
• Imbalance	• Muscle tension
• Gait ataxia	• Anxiety
• Blurred vision	• Avoidance behaviour
• Nausea	• Low mood

Dynamic Visual Acuity





I'm dizzy when I stand up - Which System is causing that symptom?

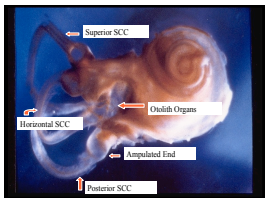
- Peripheral vestibular system
- Central vestibular system
- Cardiovascular system
- Gait abnormality :
  - Lower level
  - Middle level
  - High level
- Miscellaneous
- Is there > 1 type of symptom

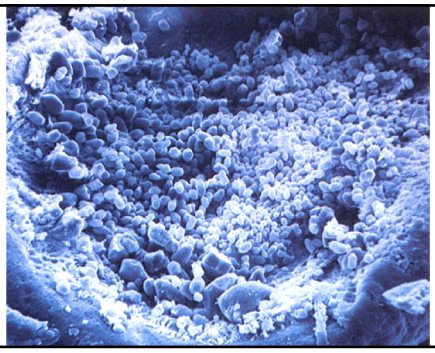
Commonest cause - BPPV in 2008

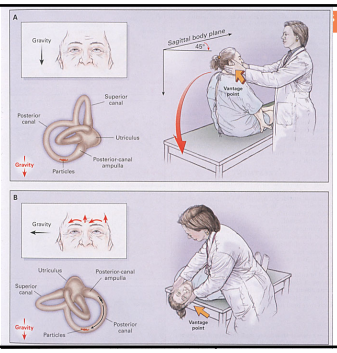
- BPPV means Benign Paroxysmal Positional Vertigo
- The commonest cause of episodic,recurrent vertigo
- Short lived, lasting less than a minute
- May present as sudden unsteadiness not spinning but always provoked by head movement up or down or postural change or lying flat.
- Treatable

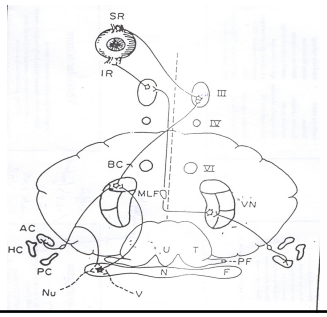
Provoking Positions

- Getting out of bed
- Lying down from sit to supine
- Bending over
- Looking up or reaching overhead
- Rolling in bed
- Going from supine to sit
- An inability to sleep without 3 pillows









- The prevalence of BPPV increases with age

Age Ranges	Number of patients with BPPV: Total: 71	%
20-30	2	2.8%
31-40	0	0%
41-50	8	11.1%
51-60	10	13.9%
61-70	16	22.2%
71-80	23	31.9%
81-90	10	13.9%
91-100	2	2.8%

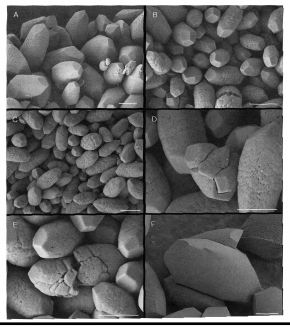
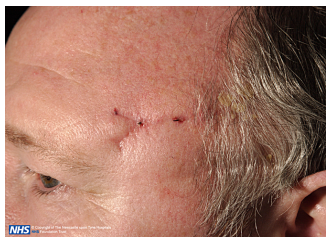


Fig. 2. High magnification field-emission scanning electron microscopy (FESEM) micrographs from middle-aged and aged rats. (A) Utricular otoconia in the peripheral region from a middle-aged rat. Most otoconial bodies are finely serrated, the terminal facets are smooth, and the lines of intersection of facets are sharp. Scale bar = 10 μm. (B) Utricular otoconia in the central region from an aged rat. Scale bar = 5 μm. (C–E) Saccular otoconia from the aged rats. Most otoconial bodies are pitted, fissured, penetrated, or broken into several fragments. Note that the terminal facets are smooth and the lines of intersection of facets are sharp, despite this degenerated body. Scale bar = 5 μm. (F) Giant otoconia from the outer margins of the utricular macula in an aged rat. Scale bar = 10 μm.



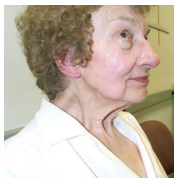
Cost of managing BPPV

- Costs $2000 to arrive at diagnosis
- Delays in diagnosis and treatment
- Duration of symptoms 12 months
- 10 % had consulted other specialities with same dizziness

It is cost effective to perform the CRP and pays to perform the Dix Hallpike test to assess for the presence of BPPV

Dix-Hallpike Test

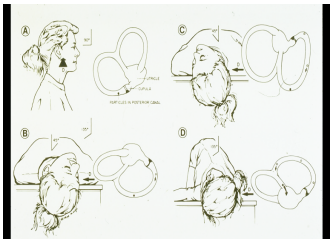
- No reports in literature that Dix-Hallpike has resulted in symptoms consistent with Vertebro-Basilar Insufficiency
- If neck range of motion is limited, tilt head of table down



"The canalith repositioning procedure: for treatment of benign paroxysmal positional vertigo."

Otolaryngol Head Neck Surg. 1992 Sep;107(3):399-404.

Movement of the otoconia during the canalith repositioning maneuver



Conclusion

- Older Adults have different types of dizziness
- Dizziness is not a syndrome : look for specific diagnoses
- Cross specialities ? Who should see them?
- Look for treatable common diagnoses in all of this group as the history may not be clear
- Educate professionals in the different specialities seeing older persons on BPPV, nystagmus and cardiovascular causes of dizziness.

Examination

Acute Admissions
- Exclude Central Oculomotor signs
- Search for spontaneous nystagmus
- NB peripheral – can you see their eyes in the dark?

Out patient Clinic
- Bedside VOR testing- Head thrust /DVA
- Positional Vertigo with Dix Hallpikes
- Otoscopy

DIPLOMA IN SYNCOPE & RELATED DISORDERS

Computerised Dynamic Posturography

DIPLOMA IN SYNCOPE & RELATED DISORDERS

DIPLOMA IN SYNCOPE & RELATED DISORDERS