

Overview of Examination of the Dizzy Patient

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Goals of the Exam

- Quantify functional status
- Identify medical problems
- Quantify vestibular deficit
- Quantify neurological deficit
- Identify psychological problems

Strategy of the exam

- Order for your convenience
 - I. Standing
 - II. Sitting
 - III. Frenzel basic tests
 - IV. Special tests
- Save potentially disturbing tests (e.g. vestibular testing) for the end
- Expand exam as needed based on history or previous examination

I. Standing

- Gait and Romberg
 - (not “Rhomborg”)
- Motor power in lower extremities
- Blood pressure/Pulse standing



Romberg



It is best to use eyes closed (ECTR)
Normal persons should be able to stand in ECTR for 6 sec.

Head extended ECTR for 6 seconds is in upper 25th percentile



<http://www.opt.pacificu.edu/ce/catalog/COPE9462/FIG24.JPG>

Standing -- Motor power

- Is patient's unsteadiness due to weakness ?
 - Stand on heels and toes
 - Deep knee bend
- Tell patient you are checking for power.
- You also should be checking for consistency – if can't do Romberg, but can do this, not inconsistency

Standing -- Blood pressure/Pulse

- Measure BP/pulse





II. Essential Cranial Nerves

- Vision
- Oculomotor
- Hearing


II. Vision

- Visual acuity
 - Is patient (nearly) blind ?
 - Can patient see with both eyes ?



8th nerve: Dynamic Illegible 'E' test(DIE test)

- Distance vision with head still
- Distance vision with head moving
- Normal: 0-2 lines change.
- Abnormal: 4-7 lines change




II. Oculomotor

Does patient have double vision, nystagmus ?

Can patient track ?

- Range, alignment and Gaze
- Saccades
- Pursuit

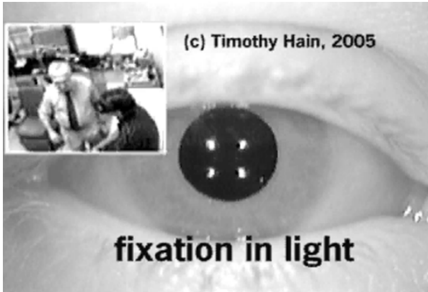


II. Gaze Testing

- Move finger to the limits of lateral gaze (bury sclera) – if can't bury, may have oculomotor palsy
- Move finger to limits of vertical gaze
- Do eyes reach end-gaze ?
- Is there end-gaze nystagmus ?

Gaze nystagmus

- Alexander's Law



II. Hearing -- 8th nerve

- Screen Hearing
 - Rubbed fingers (high frequencies)
 - Tuning forks (Good but slow)



Motor

- Deep tendon reflexes
- Babinski sign
- Tremor
- Tone



Coordination

- Finger to nose (FTN), fine finger movements
- Rapid alternating movements (RAM)

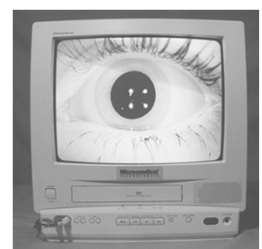


Sensory Examination


- Vibration sense (ankles)



III. Frenzel Goggles (Video is best)




Optical Frenzel Goggles



- Inexpensive (about \$500)
- Portable – take on the road
- A little limited – can't do vibration, head-forward or cross-cover
- Can get hot, bulbs burn out and break


Frenzel – routine test Spontaneous Nystagmus Test

- Observe nystagmus in light and dark
 - Acute vestibular disorders have strong horizontal “jerk” nystagmus.
- Many other types of nystagmus




Frenzel -- Routine Vibration

- Method: Apply 60-120 hz vibration to SCM, first one side, then the other. 5 seconds is enough.
- Shower massagers work well for this and are inexpensive.
- Use Video Frenzel goggles – optical Frenzels don't work
- Compare nystagmus before and during



Vibration Induced Nystagmus

- Unidirectional horizontal nystagmus strongly suggests contralateral vestibular lesion.

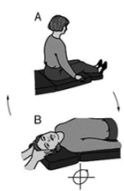


NECK VIBRATION
MENIERES DISEASE
GENTAMICIN TO R SIDE

Post gentamicin R


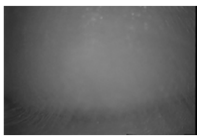
Frenzel -- Routine Positional Testing

- Dix-Hallpike testing
 - For PC/AC BPPV
- Situational testing
 - Lateral canal
 - Head vs. Body position testing (prone)



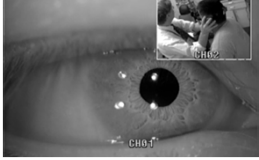
IV Frenzel Head-shaking test

- Method: 20 cycles of horizontal head rotation
- Frenzel goggles to monitor nystagmus prior to and following head-shaking.
- Positive – substantial change in nystagmus following head-shaking. Usually beats away from bad ear.

V. Video or no goggle HIT (Head impulse test)

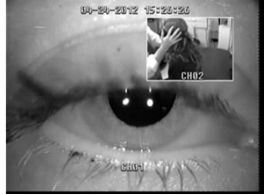
- Method: Rapid rotation of head from one side to other
- Monitor for catch-up saccade to side of dead ear
- Positive – reproducible saccade in one direction, that correlates with vibration or HSN.



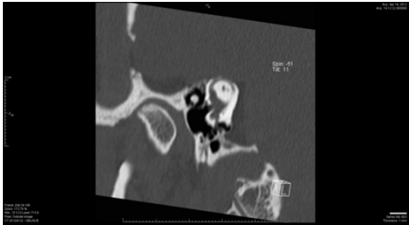
Positive HIT to L in patient post VNS to L

IV Frenzel Situational Tests Pressure sensitivity

- Valsalva test
 - 2 seconds of exhale against closed glottis (to increase CSF pressure)
 - Torsion is sensitive for SCD
 - Small amounts of horizontal is common and of unknown significance

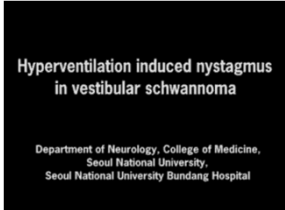


IV Frenzel Situational Tests Pressure sensitivity



IV Frenzel Situational Tests: Hyperventilation

- 30 seconds of brisk HVT
- If a change in nystagmus (other than DBN)
 - Irritable vestibular nerve (tumor, v. neuritis, gamma knife)
 - Seizure (very rare)
 - Anxiety (dizzy, no nystagmus)



More details

Hain, T.C. Approach to the patient with Dizziness and Vertigo. Practical Neurology (Ed. Biller), 2002, 2007. Lippincott-Raven

More movies

www.dizziness-and-hearing.com