

Overview of Examination of the Dizzy Patient

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Goals of the Exam

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

Strategy of the exam

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

I. Standing

- n Gait and Romberg
- n Motor power in lower extremities
- n Blood pressure/Pulse standing

Romberg



This is eyes-open regular Romberg (EORR).

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.pacifcu.edu/ce/catalog/COPE9462/FIG24.JPG>

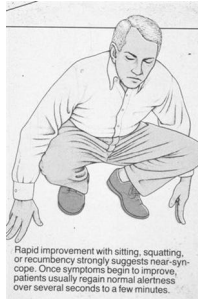


Standing -- Motor power

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

Standing -- Blood pressure/Pulse

- n Measure BP/pulse



II. Essential Cranial Nerves

- n Vision
- n Oculomotor
- n Hearing

II. Vision

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



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

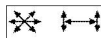
- n Distance vision with head still
- n Distance vision with head moving
- n Normal: 0-2 lines change.
- n Abnormal: 4-7 lines change



II. Oculomotor

- Does patient have double vision, nystagmus ?
- Can patient track ?

- n Range, alignment and Gaze



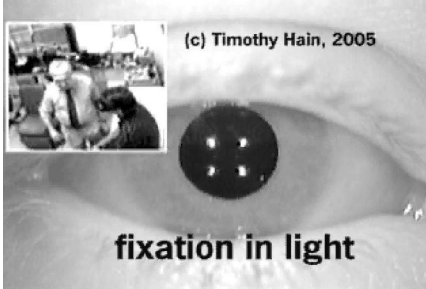
- n Saccades
- n Pursuit

II. Gaze Testing

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

Gaze nystagmus

n Alexander's Law



II. Hearing -- 8th nerve

n Screen Hearing

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



Motor

- n Deep tendon reflexes
- n Babinski sign
- n Tremor
- n Tone



Coordination

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

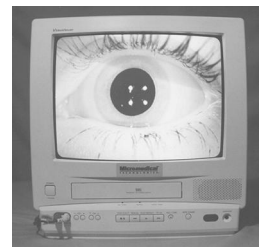


Sensory Examination

n Vibration sense (ankles)



III. Frenzel Goggles (Video is best)



Optical Frenzel Goggles



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

Frenzel – routine test Spontaneous Nystagmus Test

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



Frenzel -- Routine Vibration

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



Vibration Induced Nystagmus

- n Unidirectional horizontal nystagmus strongly suggests contralateral vestibular lesion.



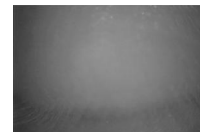
Frenzel -- Routine Positional Testing

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



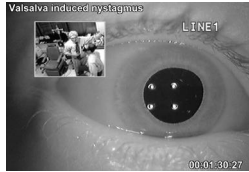
IV Frenzel – Situational Head-shaking test

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



IV Frenzel Situational Tests Pressure sensitivity

- n Valsalva test
 - 10 seconds of exhale against closed glottis (to increase CSF pressure)
 - Sensitive



IV Frenzel Situational Tests: Hyperventilation

- n 30 seconds of brisk HVT
- n Exam for change in nystagmus
 - Irritable vestibular nerve (tumor, v. neuritis)
 - Seizure (very rare)
 - Anxiety (dizzy, no nystagmus)

Hyperventilation induced nystagmus
in vestibular schwannoma

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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