

## 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
  - (not “Rhomberg”)
- n Motor power in lower extremities
- n 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 25<sup>th</sup> percentile

<http://www.opt.pacificu.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 ?



## 8<sup>th</sup> 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

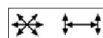


## II. Oculomotor

Does patient have double vision, nystagmus ?

Can patient track ?

n Range, alignment and Gaze



n Saccades

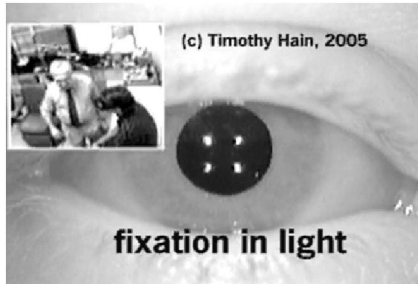
n Pursuit

## 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 -- 8<sup>th</sup> 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)

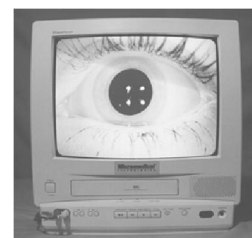


## Sensory Examination

n Vibration sense (ankles)



## III. Frenzel Goggles (Video is best)



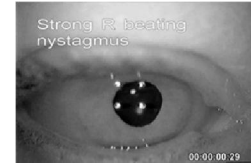
## Optical Frenzel Goggles



- 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



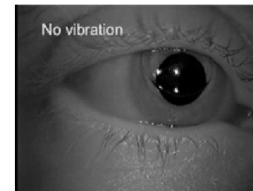
## Frenzel -- Routine Vibration

- n Method: Apply 60-120 hz vibration to SCM, first one side, then the other. 5 seconds is enough.
- n 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.



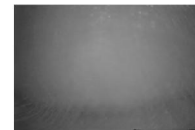
## Frenzel -- Routine Positional Testing

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



## IV Frenzel – Situational Head-shaking test

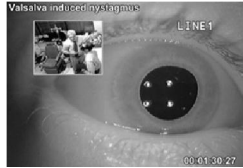
- n Method: 20 cycles of horizontal head rotation
- n Frenzel goggles to monitor nystagmus prior to and following head-shaking.
- n Positive – substantial change in nystagmus following head-shaking. Usually beats away from bad ear.



## IV Frenzel Situational Tests Pressure sensitivity

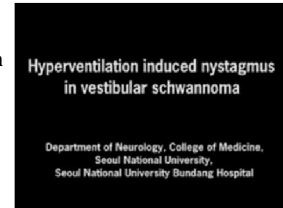
### n Valsalva test

- 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: Hyperventilation

- n 30 seconds of brisk HVT
- n If a change in nystagmus (other than DBN)
  - Irritable vestibular nerve (tumor, v. neuritis)
  - 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](http://www.dizziness-and-hearing.com)