Bedside Examination of the Dizzy Patient

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Goals of the Exam
- Identify medical problems
- Quantify vestibular deficit
- Quantify neurological deficit
- Identify psychological problems
- Quantify functional status

Strategy of the exam
- Order for your convenience
  I. Standing
  II. Sitting
  III. Frenzels
  IV. Special
- 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
- Motor power in lower extremities
- Blood pressure/Pulse standing

Motor power
- Is patient’s unsteadiness due to weakness?
  - Stand on heels and toes
  - Deep knee bend

This is eyes-closed regular Romberg.

Normal persons should be able to stand in ECTR for 6 sec.

Head extended ECTR for 6 seconds is in upper 25th percentile
Blood pressure/ Pulse
- Measure BP/pulse standing

II. Sitting exam (without goggles)
- Cardiac
- Cranial Nerve exam
- Upper ext. Neurological, DTR, Toe signs
- Vibration at Ankle

Cardiac
- Pulse
- Murmer
- Bruit

Essential Cranial Nerves
- Vision
- Oculomotor
- Hearing
- Rapid Dolls

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

Oculomotor
Does patient have double vision, nystagmus?
Can patient track?
- Range
- Saccades
- Pursuit
- Gaze
### 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 ?
- Is there rebound nystagmus ?

### 8th nerve
- Screen Hearing
  - Rubbed fingers (high frequencies)
  - Whisper test
  - Watch test 🕒

### 8th nerve: Rapid Dolls
- VOR: Vestibulo-ocular reflex

### 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

### Motor Power
- Motor power
  - Cortical pattern (hemi-face, hand)
  - Neuropathy pattern (distal)
- Deep tendon reflexes

### Motor Power
- Hand grip, biceps, triceps, deltoids
- Pronator sign
- Drift of extended arms
Deep Tendon Reflexes

- Does patient have cortical signs?
- Does patient have neuropathy?
  - Biceps
  - Knee
  - Ankle

Coordination

- Finger to nose, fine finger movements
- Rapid alternating movements

Sensory Examination

- Vibration sense (ankles)
- Position sense (ankles)

Spontaneous Nystagmus Test

- Observe nystagmus in light and dark
  - Acute vestibular disorders have strong horizontal "jerk" nystagmus.
  - Normal people and chronic vestibular disorders have little or no nystagmus.
  - Neural compensation for vestibular tone asymmetry is fast and effective. Most people can't "fake" nystagmus.
  - Almost everything unusual is central.

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

Video Frenzel Goggles

- C/o Micromedical Technology, Chatham IL
- 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
Vestibular Spontaneous Nystagmus

Vibration test

- Method: Apply 60-120 hz vibration to SCM, first one side, then the other. Shower massagers work well for this and are inexpensive.
- Video frenzel goggles - optical frenzels don’t work very well
- Compare nystagmus before and during

Vibration Induced Nystagmus

- Unidirectional horizontal nystagmus strongly suggests contralateral vestibular lesion.
- Direction changing nystagmus is a normal variant.
- Vertical or torsional nystagmus is of uncertain meaning. Seems more common in BPPV.

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.
Head-shaking in person with left sided vestibulopathy

Positional Testing
- Dix-Hallpike testing
- Situationally
  - Lateral canal
  - Head vs. Body position testing (prone)
  - Vertebral artery test (VAT)

Diagnosis: Dix-Hallpike Maneuver

BPPV nystagmus
- Latency (0-20 sec)
- Burst (< 60 sec)
- Upbeating/Torsion vector
- Reversal on sitting
- Fatigue with repetition

Positional Vertigo Dix-Hallpike Maneuver

Posterior Canal BPPV
**Posterior Canal BPPV**

- Upbeating/Torsional nystagmus (or at least torsional, top of eye beats toward ground)
- Latency: 0 to 30 sec
- Burst: up to 1 min
- Unwinds when sit up

**Situational Tests**

- Fistula test and/or Valsalva
- Hyperventilation

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**Situational Tests: Fistula/SCD**

Frenzel goggles

- Fistula test
  - Apply pulse of pressure (carefully)
- Valsalva test
  - 10 seconds of exhale against closed glottus
- Tullio test
  - Brief loud noise

**Situational Tests: Hyperventilation**

Frenzel goggles

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

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**More details**


www.dizziness-and-balance.com