

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. 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



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

Motor power

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

Blood pressure/Pulse

- Measure BP/pulse standing



II. Sitting exam (without goggles)

- Cranial Nerve exam
- Upper ext. Neurological, DTR, Toe signs
- Vibration at Ankle

Essential Cranial Nerves

- Vision
- Oculomotor
- Hearing

Vision

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



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

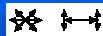
- Distance vision with head still
- Distance vision with head moving
- Normal: 0-2 lines change.
- Abnormal: 4-7 lines change



Oculomotor

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

- Range, alignment and Gaze
- Saccades
- Pursuit

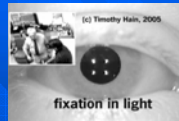


Gaze Testing

- 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 ?

Gaze nystagmus

- Alexanders Law
- Rebound



Patient BM
12/2003
Cerebellar
Degeneration

Hearing -- 8th nerve

- Screen Hearing
 - Rubbed fingers (high frequencies)
 - Whisper test (alternative)
 - Watch test (alternative)
 - Tuning forks (best but slow)



Motor Power

- Motor power
 - Heels, Toes, Deep knee bend, grip, pronator sign.
- Deep tendon reflexes
 - AJ, KJ, Biceps
- Babinski sign



Babinski Sign



Myelopathy
Including cervical v.
Stroke

Coordination

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



Movement Examination

- Tremors
 - Resting (Parkinson's)
 - Postural (Essential tremor)
 - Intention (Cerebellar)
- Tone
 - lead pipe rigidity (Parkinsons)
 - spasticity (Upper motor neuron)

Sensory Examination

- Vibration sense (ankles)



Video Frenzel Goggles



© Micromedical Technology, Channahon, IL

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

Spontaneous Nystagmus Test

- Observe nystagmus in light and dark
 - Acute vestibular disorders have strong horizontal “jerk” nystagmus.
- Many other types of nystagmus (to be shown later)



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.

NECK VIBRATION
MENIERES DISEASE
GENTAMICIN TO R SIDE

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.



Positional Testing

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



Tests for Pressure sensitivity

(situation dependent)

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



Situational Tests: Hyperventilation

- 30 seconds of brisk HVT
- Exam for change in nystagmus
 - Irritable vestibular nerve
 - 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
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Neurology (Ed. Biller), 2002.
Lippincott-Raven

www.dizziness-and-balance.com
