

LIDS, ORBICULIS, PUPILS, EXOPHTHALMOMETRY, CN V, IOP In the Assessment of Diplopia

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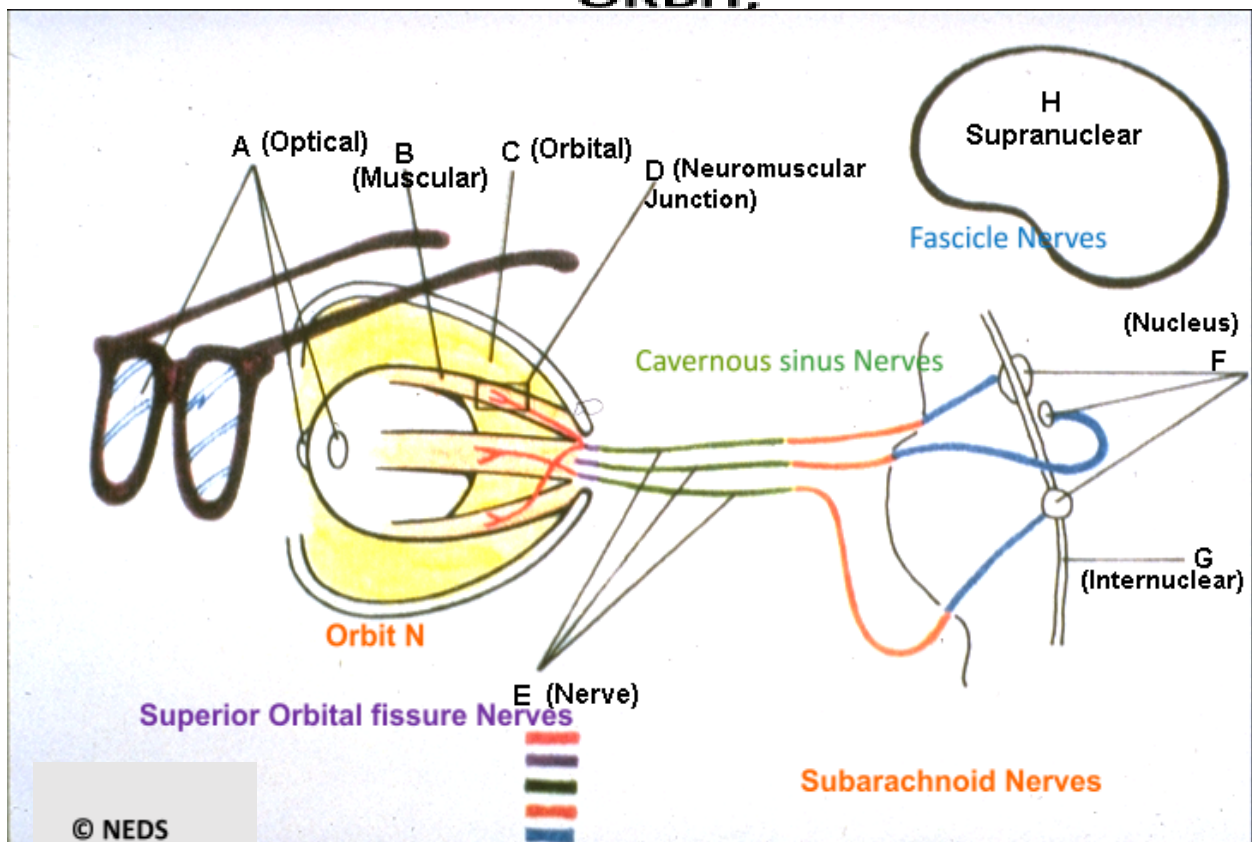
Patients with diplopia: Goal of Providers

Where it is? Historical clues/ Exam clues

What it is? Historical clues/ Where is the lesion/ Other confirmatory tests

ORBIT, NEUROMUSCULAR JUNCTION, SUPERIOR ORBITAL FISSURE, CAVERNOUS, SUBARACHNOID, BRAINSTEM

BRAINSTEM, ORBIT.



Exam clues (distal to proximal) you can tell which fellow travelers affected:

Orbit involving the EOMS (include orbital apex)

Lids (swelling, IIIrd, rarely orbital Horner's)

Pupils (CN II, rarely orbital Horner's)

Exophthalmometry (orbital mischievous)

IOP (due to raised intraorbital pressure)

Neuro-Muscular Junction besides involving the EOMS

Lids

Orbicularis

Superior Orbital Fissure/Cavernous Sinus involving the EOMS (bruit in CS)

Lids (swelling, IIIrd, Horner's)

Pupils (Horner's)

Exophthalmometry (Cavernous sinus fistula increases venous return)

CN V (V1 and or V2, numb forehead and/or cheek)

IOP (due to raised episcleral venous pressure)

Subarachnoid Space involving the EOMS

Lids (IIIrd)

Orbicularis (if CN VII involved also look for facial weakness)

Pupils (CN II)

CN V (V1-3 possible)

Brainstem involving the EOMS (vertigo, hiccups, arms/legs sensorimotor, ataxia)

Lids (IIIrd)

Orbicularis (if CN VII involved also look for facial weakness)

Pupil(CN II)CN V (V1-3 possible)

History Clues (distal to proximal) you can tell which fellow travelers affected:

Orbit involving the EOMS (include orbital apex)

Lids (swelling, IIIrd, rarely orbital Horners) / Is there lid droopiness/ swelling

Pupils (CN II, rarely orbital Horners and IIIrd) / Are the pupils asymmetric?

Exophthalmometry (orbital mischief) / Is the eye protruding?

IOP (due to raised intraorbital pressure) / Does the eye hurt?

Neuro-Muscular Junction besides involving the EOMS

Lids / Is there lid droopiness?

Orbicularis / Hard to close eye tight?

Superior Orbital Fissure/Cavernous Sinus involving the EOMS

Lids (swelling, IIIrd, Horners) “

Pupils (Horners) “

Exophthalmometry (Cavernous sinus fistula increases venous return) “

IOP (due to raised episcleral venous pressure) “

CN V (V1 and or V2, numb forehead and/or cheek) / numbness of forehead/cheek

Subarachnoid Space involving the EOMS

Lids (IIIrd) “

Pupil(CN II or III) “

Orbicularis (if CN VII involved also look for facial weakness) “

CN V (V1-3 possible) “

Brainstem involving the EOMS (vertigo, hiccups, arms/legs sensorimotor, ataxia)

Lids (IIIrd) “

Pupil(CN II) “

Orbicularis (if CN VII involved also look for facial weakness) “

CN V (V1-3 possible) “

Examination Techniques

Vision: Is there optic neuropathy?

Color: Is there optic neuropathy?

Amsler: Is there optic neuropathy? Is there chiasmal/cavernous sinus process

Visual Fields: Is there optic neuropathy? Is there a chiasmal/cavernous sinus process

Lids: MRD + and - Lid Twitch (Cogans) Lid Fatigue Enhanced Ptosis

Lid lag Lid signs in aberrant regeneration

Orbicularis: How to test

Pupil: How to find a small APD, size of pupil in light and dark (sympathetic vs Parasympathetic denervation, How to find dilation lag

Exophthalmometry: How to do it

CN V

EOMs:

Basic Examination Techniques

Techniques to discriminate between thyroid and myasthenia

Review of intermittent diplopia, mechanisms in TED

horizontal and vertical deviations: Classified as intermittent (present upon awakening or during fatigue, present at extremes of gaze) or constant when present in primary gaze and/or reading position

Phoria vs Intermittent tropia vs Tropia

A **phoria** (or latent deviation) the eyes are aligned but have a deviation broken down by interrupting fusion, therefore fusion keeps the eyes aligned

An **intermittent tropia** is a misalignment of the eyes sometimes and not others, so there is intermittent fusion

A **tropia** is a misalignment of the two eyes when a patient is looking with both eyes uncovered.

How to discriminate between phoria, intermittent phoria and tropia

Alternate Cover Test

Cover/Uncover Test

Cover Test

How to discriminate between Thyroid diplopia and Myasthenia Gravis (MG)

- Graves has orbital signs usually and worsening in AM. The most common misalignment is due to the involvement of the inferior rectus and medial rectus, but in this scenario the involvement is restrictive so inferior rectus involvement causes a hypotropia and medial rectus involvement causes a esotropia. Photos will be shown regarding eye signs.
- MG has NO orbital signs of proptosis unless concomitant thyroid disease. Usually signs tend to worsen toward the end of the day when the patient is tired or after some fatiguing activities. Videos will be shown for specific findings with M.G.

D OD: sc 20/ cc 20/ ph 20/
 OS: sc 20/ cc 20/ ph 20/

N OD: sc 20/ cc 20/ ph 20/
 OS: sc 20/ cc 20/ ph 20/

R_x OD: _____ x _____ ADD _____
 OS: _____ x _____ ADD _____

M OD: _____ x _____ = 20/
 OS: _____ x _____ = 20/
 add _____ 20/
 add _____ 20/

C OD: _____ x _____ = 20/
 OS: _____ x _____ = 20/

LIDS:

	MRD w/o BF	MRD w/ BF	LEV FUNCT	FOLD	FATIGUE	COGANS SIGN	DERMATO	LAG OPTH	DYSKINESIS	FASCIC	BLEPH SPASM	ORBICUL. FUNC	SCLERAL SHOW INF. SUP.
O.D.													
O.S.													

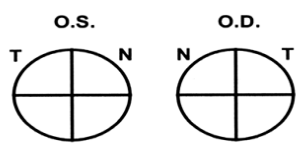
Explain: _____

PUPILS:

	SHAPE	S. LIGHT	S. DARK	D. LAG	D. RX	C. RX	N. RX	RAPD
O.D.								
O.S.								

VISUAL FIELDS:

Confrontation:



ORBIT:

	Exoph. Base	Retropuls.	Bruits	Masses	Other
O.D.					
O.S.					

SENSORY:

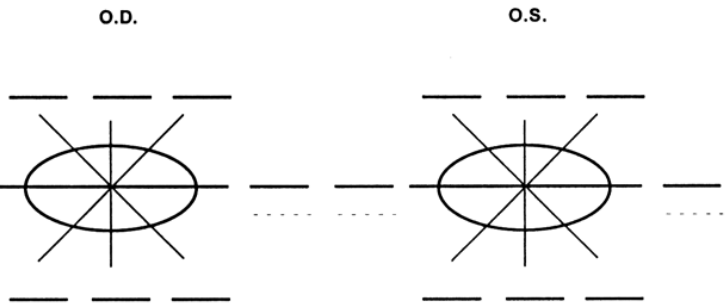
Amsler Grid: see attached grid
 O.D.: nl abnl _____
 O.S.: nl abnl _____

DUCTIONS:

_____ = degree of defect
 -1 to -4
 Normal = 0
 degree of overaction
 +1 to +4

----- = mm of scleral show

	FATIGUE	FORC. DUCT.
O D		
O S		

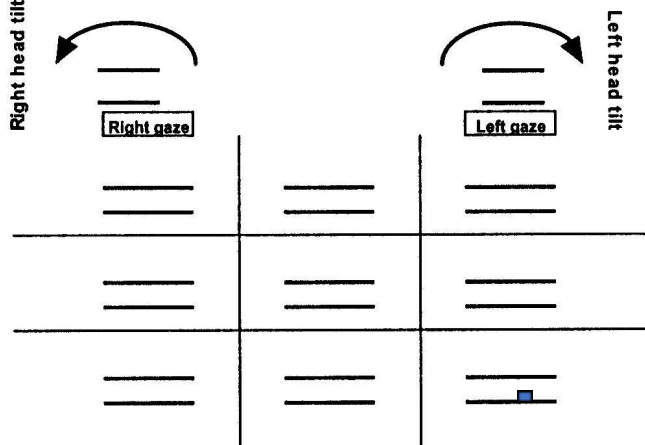


DISTANCE cc sc

▲ PRISM IN RX

O.D. O.S. Fixating

Comments:
 In 1 position with
 OD OS fixing
 Measurement = _____



NEAR cc sc

▲ PRISM IN RX

O.D. O.S. Fixating

Primary

Reading