

Do You See What I See?

Beth Colon, CO

Hirshberg Test

- This test is used to test for misalignment when VA is very poor in one eye and unable to fixate when the other eye is covered as with the cover test.
- Have the patient look at the muscle light and you observe the light reflex in the pupil. These reflexes should be equally centered. If these are not equal, one eye is deviated.
- 1 mm displacement = 7 degrees or 15 prism diopters

Krimsky Test

This test is often used when one eye has very poor VA or poor cooperation from the patient.

Have the patient look at the muscle light, use the prism bars to align the deviated reflex to equal the centered reflex.

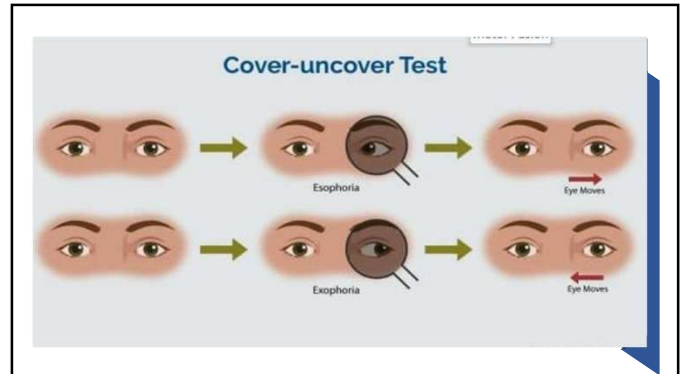
Cover Test

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Eye Muscle Alignment Testing

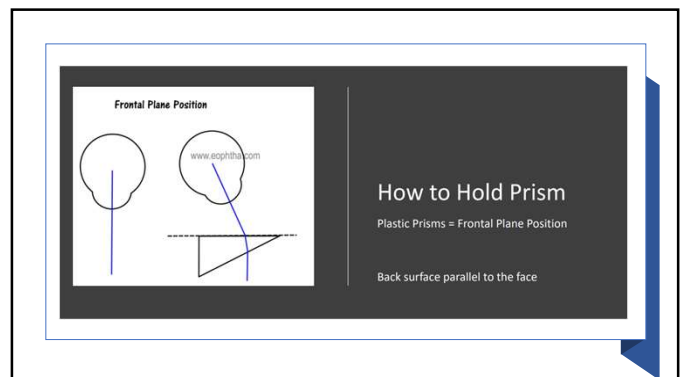
Cover/ Uncover Test--Testing for a Tropia

- The patient reads from the chart as you cover OD and uncover OD about three times. As you do this, you observe OS. If the OS moves to fixate, the patient has a tropia. The repeat by covering the left eye and observe the right eye.
- To measure how much prism diopters deviated, align the prism over eye with apex pointed toward the deviation and perform alternating cover until there is no movement to fixate.
- Strabismus in resting gaze-Misalignment is always there



• Alternate Cover Test—Testing for a phoria

- Eyes appear straight when observing but break when you disrupt fusion
- Ask the patient to fixate on a letter on the chart then cover the OD, quickly move the occluder across the bridge of the nose and cover the OS. You observe the movement of the eye immediately after the cover is removed. If the eye moves to refixate, the patient has a phoria.
- Measure with prism the same as for Cover/Uncover Test.



Neutralizing Deviation with Prisms

Rule- Apex in direction of deviation

Esotropia- Base OUT (Apex in)
 Exotropia- Base IN (Apex out)
 Hypertropia - Base DOWN (Apex up)
 Hypotropia - Base UP (Apex down)

Assessing Muscle Action

Range of Motion Binocularly
Versions or
Movement of two eyes in same direction

- Have patient follow a light or an object instructing patient not to move head and follow with eyes only.
- Move object in all gazes.
- Note any gaze where the eye does not move as well or is an overaction

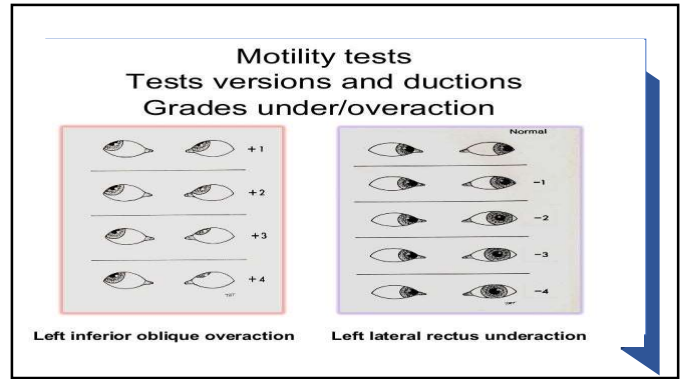
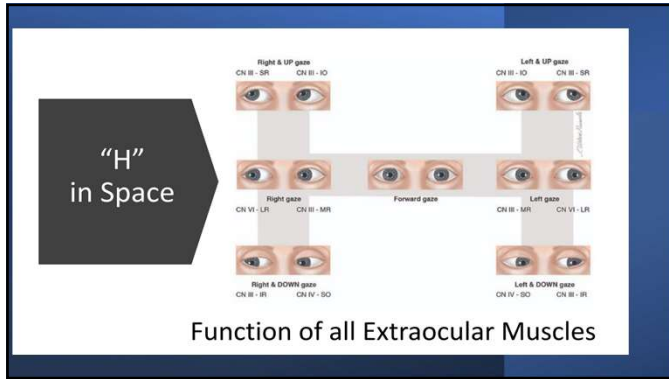
Range of Motion Monocularly
Ductions or
Movement of one eye

- Have patient follow a light or an object with one eye only as the other eye is covered

Vergences
Movement of two eyes in opposite direction

Muscle	Primary	Secondary	Tertiary
Media Rectus	Adduction	—	—
Lateral Rectus	Abduction	—	—
Inferior Rectus	Depression	Extorsion	Adduction
Superior Rectus	Elevation	Intorsion	Adduction
Inferior Oblique	Extorsion	Elevation	Abduction
Superior Oblique	Intorsion	Depression	Abduction

Diagnostic positions of gaze:-9



Documentation

• Muscle scheme show muscle in functional position NOT anatomical position.

Extraocular Movement

Full Ortho

Right	ni	Left	ni
0	0	0	0
0	0	0	0
0	0	0	0

Scale: 0 to 4
- indicates underaction
+ indicates overaction

Extraocular Muscles

MUSCLE ACTIONS

	PRIMARY	SECONDARY	TERTIARY
LR	abduction	—	—
MR	adduction	—	—
SR	elevation	intorsion	add.
IR	depression	extorsion	add.
IO	extorsion	elevation	abd.
SO	intorsion	depression	abd.

INNERVATIONS

- CN3 - oculomotor nerve
- CN4 - trochlear nerve
- CN6 - abducens nerve

MEMORIC: "LR6 - SO4 - IR3"

- Lateral Rectus is 6th CN
- Superior Oblique is 4th CN
- Inferior Rectus is 3rd CN

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