

Welcome to:
DRUG IMPAIRMENT TRAINING
for
EDUCATION PROFESSIONALS
(DITEP)

Day Two

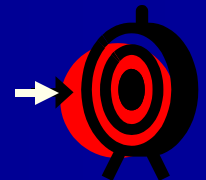
DITEP Main Menu - Day II

- Session VII: Eye Examinations
- Session VIII: Vital Signs
- Session IX: Divided Attention Testing
- Session X: Drug Combinations
- Session XI: Assessments
- Session XII: Conclusion

Day Two - Objectives

Upon successful completion of this training, participants will be better able to:

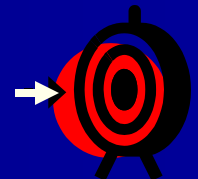
1. Define nystagmus and distinguish between the different types.
2. Demonstrate the administration of the horizontal gaze nystagmus (HGN) test, vertical nystagmus test, and lack of convergence tests.



Day Two – Objectives (cont.)

Upon successful completion of this training, participants will be better able to:

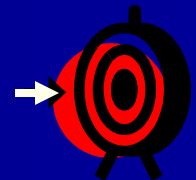
3. Demonstrate the procedures used to estimate pupil size.
4. Explain the relationship between the eye examinations and the drug categories.



Day Two – Objectives (cont.)

Upon successful completion of this training, participants will be better able to:

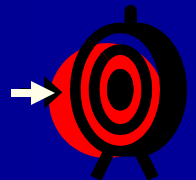
5. List the “normal ranges” for pulse rate, blood pressure, and body temperature.
6. Explain the relationship between the vital sign examinations and the drug categories.
7. Demonstrate the administration and evaluation of the psychophysical tests.



Day Two – Objectives (cont.)

Upon successful completion of this training, participants will be better able to:

8. Distinguish between the effects of the four types of drug combinations.
9. Identify and explain the components of the DITEP assessment form.







Eye Examinations Session VII

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Horizontal Gaze Nystagmus



The involuntary jerking of the eyes occurring as the eyes gaze towards the side

Categories of Nystagmus

- Vestibular (Inner Ear Related) Nystagmus
 - Rotational - while being spun in a circle
 - Post-Rotational - after being spun
 - Caloric - temperature differences in the ears
 - Positional Alcohol Nystagmus - unequal concentrations in the ear and blood

Categories of Nystagmus (cont.)

➤ Neural Nystagmus

- Optokinetic – caused by fast moving objects
- Physiological – natural nystagmus

➤ Gaze Nystagmus

- Horizontal Gaze Nystagmus
- Vertical Nystagmus
- Resting Nystagmus

Pathological Disorders and Diseases

Nystagmus may be the result of certain pathological disorders. These include brain tumors and other brain damage or some diseases of the inner ear.

Administrative Procedures

- Glasses / Contacts
- Verbal Instructions
 - Stand straight
 - Feet together
 - Follow with your eyes only, do not move your head



➤ Administrative Procedures (Cont.)

- Position the stimulus 12" - 15" slightly above eye level

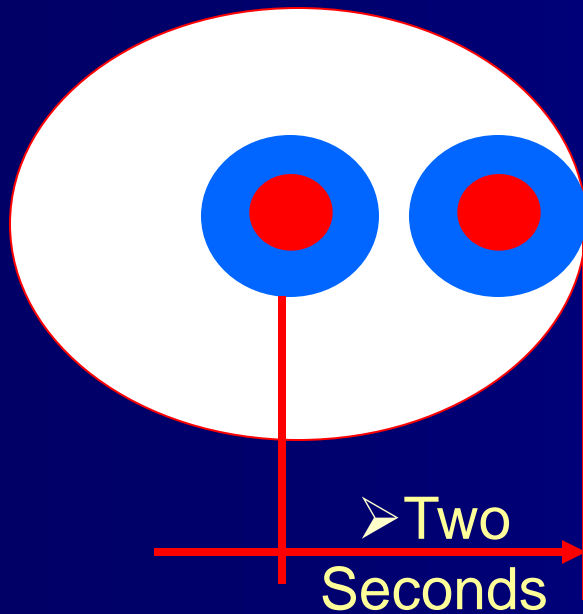


➤ Preliminary Tests:

- Equal tracking
- Equal pupil size
- Resting Nystagmus

➤ Clues of Horizontal Gaze Nystagmus

1. Lack of Smooth Pursuit



Nose

Left Side

- Move the stimulus to the person's left
- It should take approximately 2 seconds to bring it to the side
- Check the other eye at the same speed
- Repeat

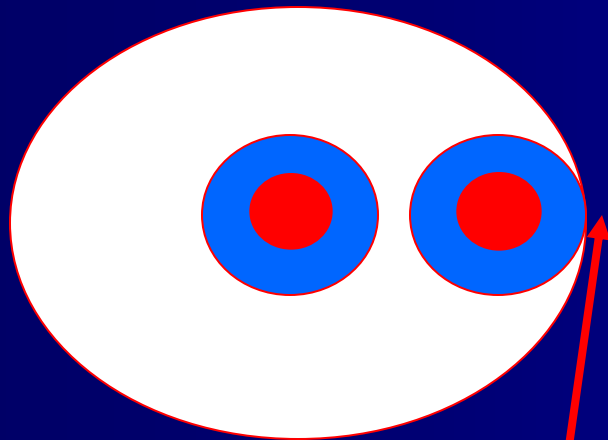
Lack of Smooth Pursuit



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Clues of Horizontal Gaze Nystagmus

2. Distinct and Sustained Nystagmus at Maximum Deviation



At least 4
Seconds

Nose

Left Side

- Move the stimulus to the person's left
- Hold the stimulus at the corner of the eye (no white showing) for at least 4 seconds
- Check the other eye and hold for same length
- Repeat

Distinct and Sustained Nystagmus at Maximum Deviation

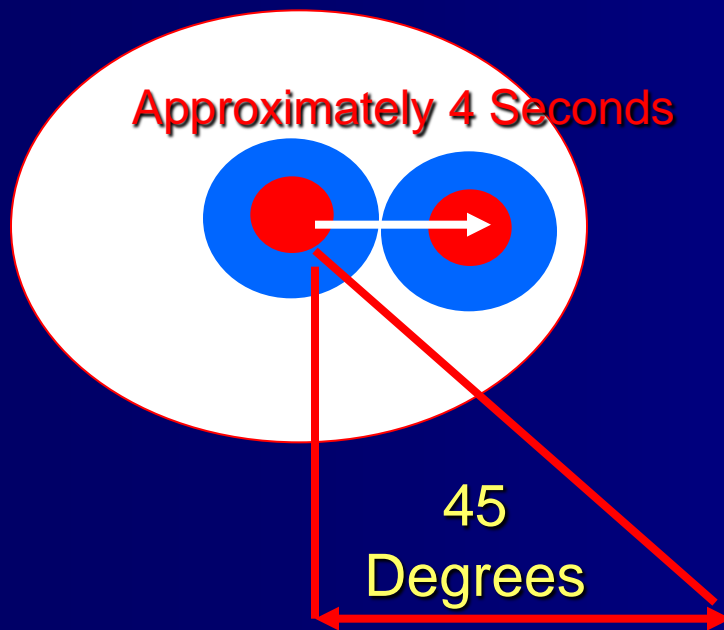


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Clues of Horizontal Gaze Nystagmus

3. Onset of Nystagmus Prior to 45 Degrees

- Slowly (approximately 4 seconds) move the stimulus to the person's left
- If nystagmus is observed, hold the stimulus to verify it continues
- Check the other eye and hold for same length
- Repeat



Onset of Nystagmus Prior to 45 Degrees



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Clues of H.G.N.

1. Lack of smooth pursuit
2. Distinct, sustained nystagmus at maximum deviation
3. Onset of nystagmus prior to 45°

Each clue assessed for each eye, for a total of **6** possible clues

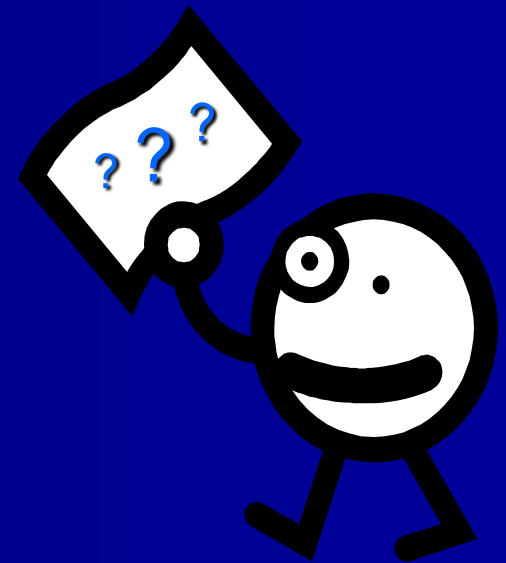
H.G.N. Clues for Impairment

4 out of 6 clues

is consistent with impairment by:

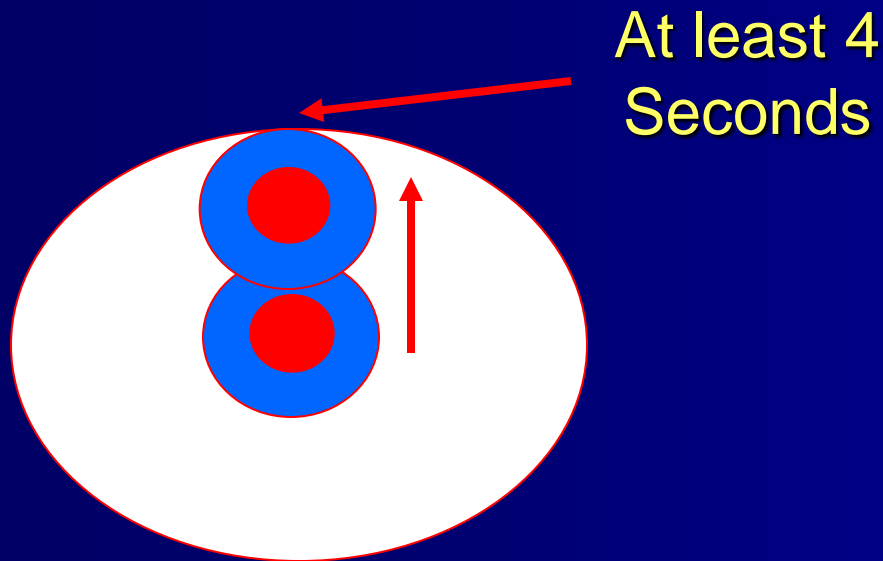
- CNS Depressants
- Dissociative Anesthetics
- Inhalants

QUESTIONS





Vertical Nystagmus



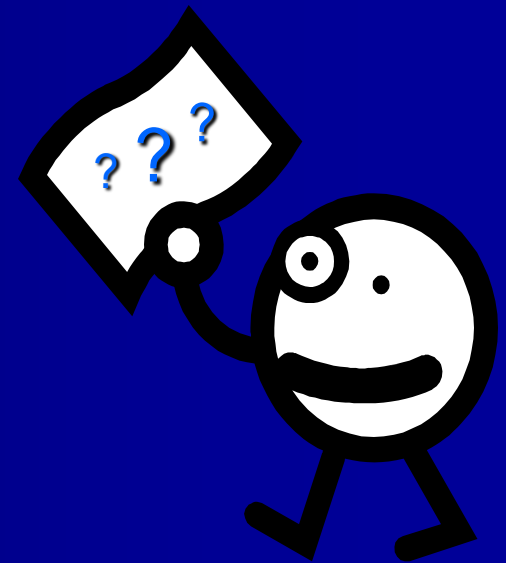
- Move the stimulus vertically
- Raise the stimulus until the individual's eyes are elevated as far as possible and hold for at least four seconds
- Repeat

Vertical Nystagmus



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QUESTIONS



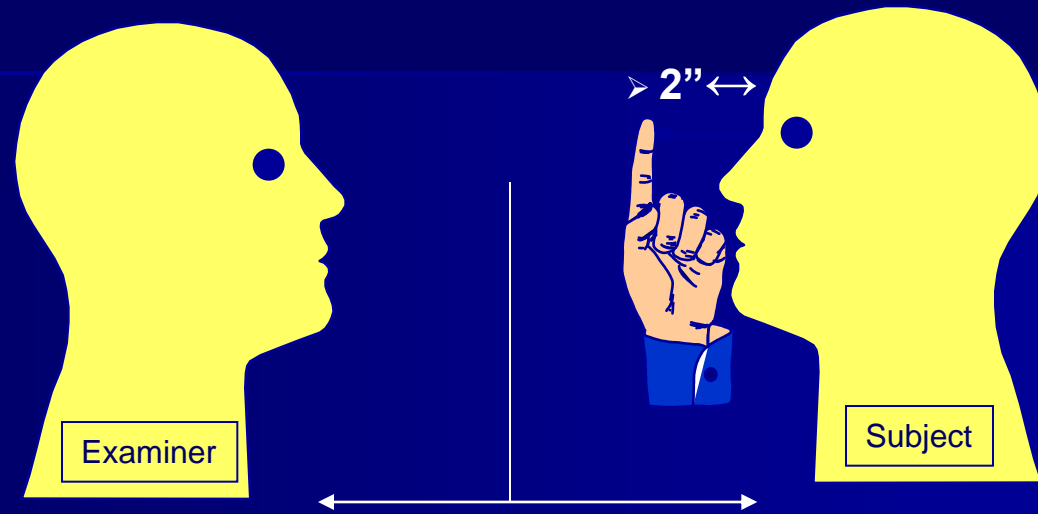


Lack of Convergence:

The inability to cross the eyes

- Procedures:
 - Explain the testing procedure
 - Glasses should be worn if needed for near vision
 - Position a stimulus 12" - 15" in front of the face
 - Move the stimulus in two circles in front of the individual's face
 - Move the stimulus towards the nose. Stopping approximately 2" from the bridge of the nose and hold for approximately one second
 - Closely observe and record the eyes' movement

Normal convergence is a distance approximately two inches (2") from the bridge of the nose



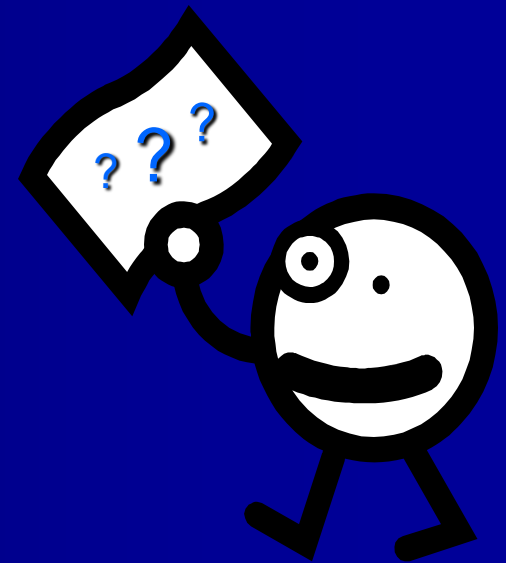
If the eyes converge (cross) when the stimulus is approximately two inches from the bridge of the nose, the Lack of Convergence is “not present”

Lack of convergence is present if the subject’s eyes do not come together and cross as they track and stay aligned on the stimulus

Lack of Convergence



QUESTIONS





Pupil Size Estimation

Room
Light

Near Total
Darkness

Direct
Light

Normal Range of Pupil Sizes

- Room Light: 2.5 – 5.0 mm
- Near Total Darkness: 5.0 – 8.5 mm
- Direct light 2.0 – 4.5 mm

Pupil Reactions to Light

- Reaction to light
 - Normal (within 1 second)
 - Slow (more than 1 second)
- Rebound dilation - A period of pupillary constriction followed by a period of pupillary dilation where the pupil steadily increases in size and does not return to its original constricted size

Rebound Dilation



Video clip courtesy Joseph Abrusci, President, NJDRE Assoc.,
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Relationships to the Categories

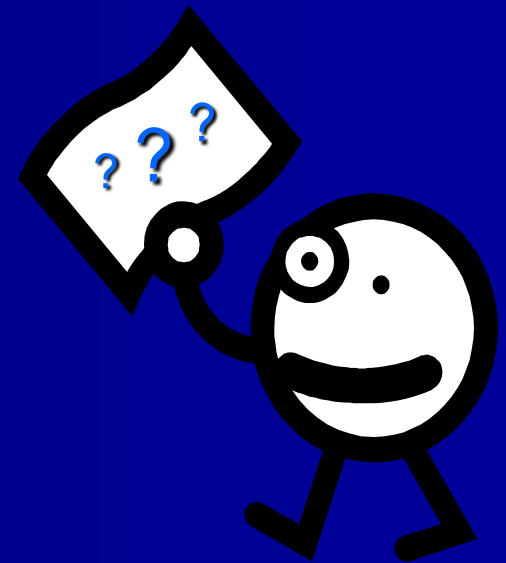
	CNS Depressant	CNS Stimulant	Hallucinogen	Dissociative Anesthetic	Narcotic Analgesic	Inhalant	Cannabis
HGN	Present	None	None	Present	None	Present	None
VGN	Present *	None	None	Present	None	Present *	None
LOC	Present	None	None	Present	None	Present	Present
Pupil Size	Normal*	Dilated	Dilated	Normal	Constricted	Normal *	Dilated *
Reaction To Light	Slow	Slow	Normal *	Normal	Little or None Visible	Slow	Normal

- High dose for that particular person.
- Pupil size may be dilated (see below)**
- Pupil size may be dilated for some inhalants
- Pupil size may be normal

- Certain psychedelic amphetamines may cause slowing

***Soma, Quaaludes, and some Anti-Depressant drugs will cause pupils to dilate*

QUESTIONS





Lack of Smooth Pursuit



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Supplemental

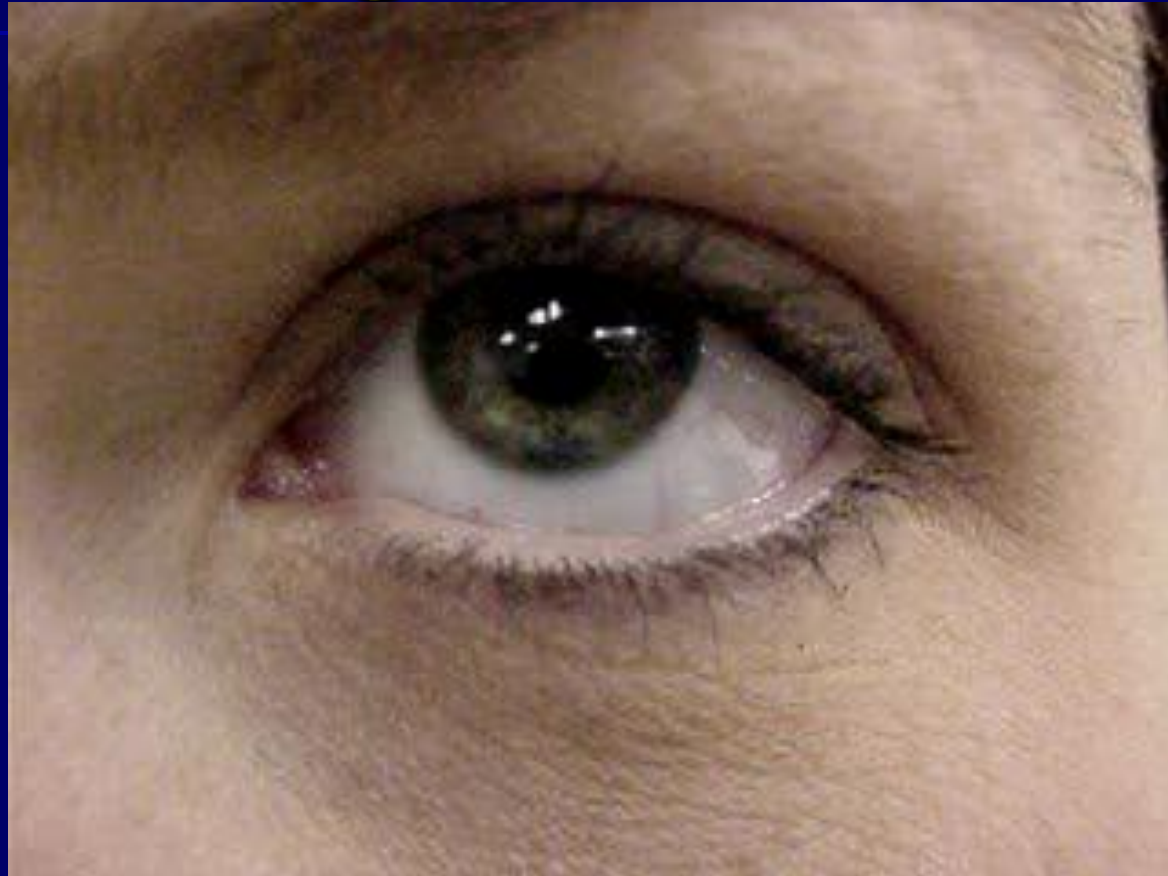
Distinct and Sustained Nystagmus at Maximum Deviation



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Supplemental

Onset of Nystagmus Prior to 45 Degrees



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