

PRIMARY POSITION

- Position of the eyes in binocular vision :
 - ✓ with the head erect.
 - ✓ the object is at infinity and lies at the intersection of the sagittal plane of the head.
 - ✓ the horizontal plane passing through the centres of rotation of both eyes.



Yoke muscles (contralateral synergist)

- Refers to a pair of muscle (one from each eye) contract simultaneously during version movement

Cardinal direction of gaze	LEFT	RIGHT
Dextroversion	MR	LR
Levoversion	LR	MR
Levoelevation	SR	IO
Levodepression	IR	SO
Dextrodepression	SO	IR
Dextroelevation	IO	SR

HERING'S LAW OF EQUAL INNERVATION

- An equal and simultaneous innervation flows from the brain to a pair of yoke muscles which contracts simultaneously in different binocular movement
- Ex. Right LR and Left MR during dextroversion
- Applies to all normal eye movements

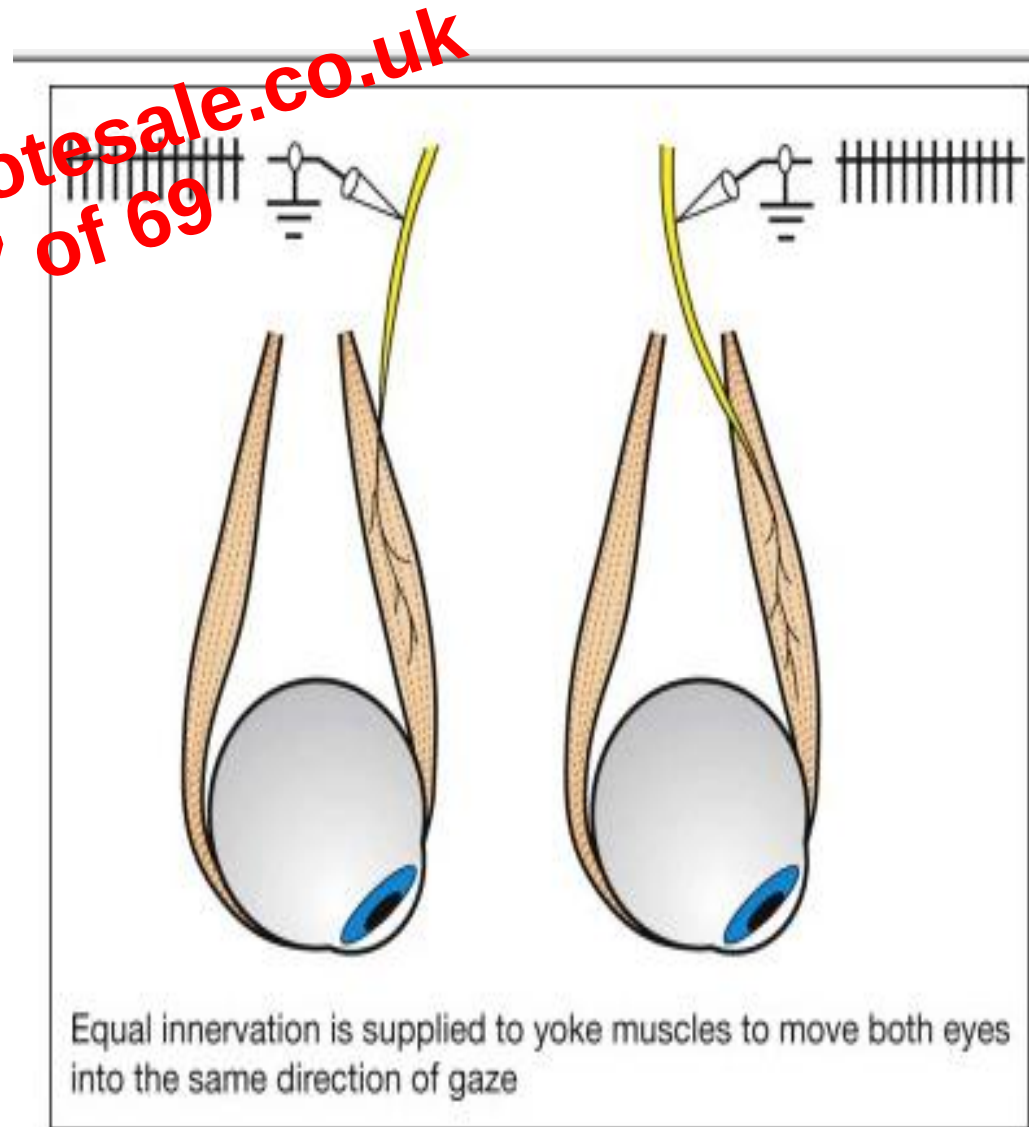
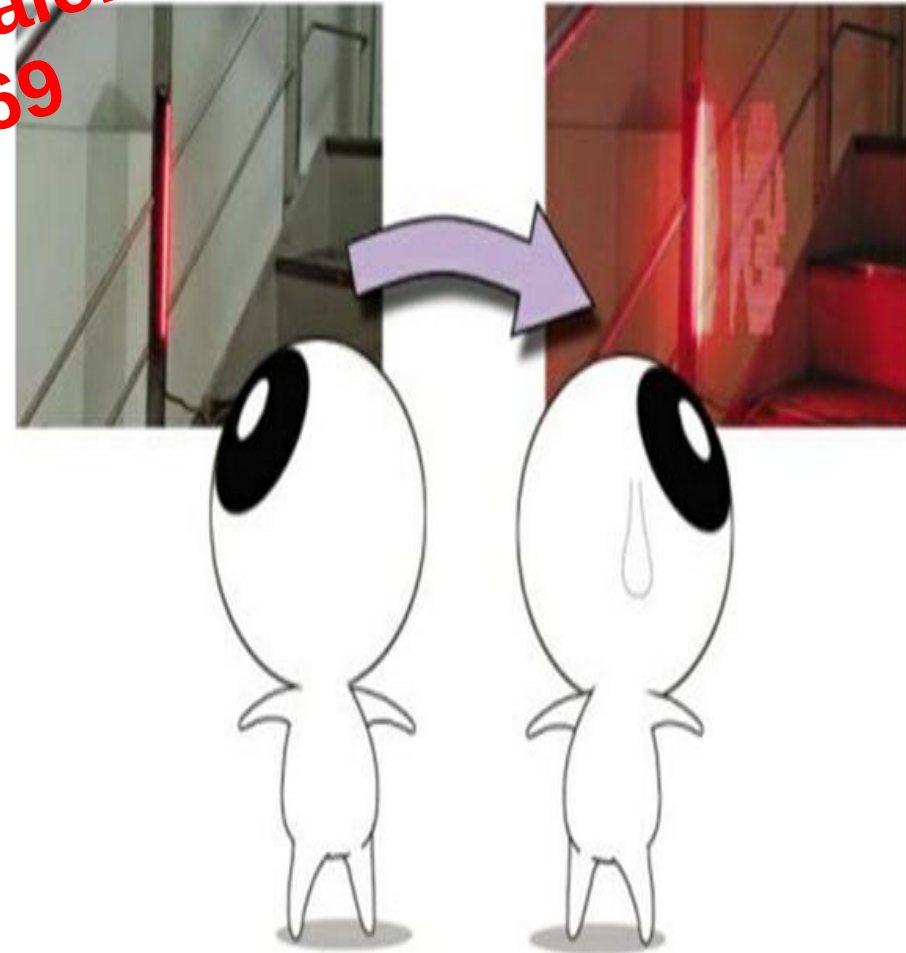


Fig. 18.11 Hering law of equal innervation of yoke muscles

1. SACCADIC MOVEMENTS

- Rapid, ballistic conjugate eye movements performed to bring the image of the object on the fovea
- Maybe voluntary/involuntary
- Are made spontaneously in response to a suddenly appearing object



Gaze shifts from one object to another

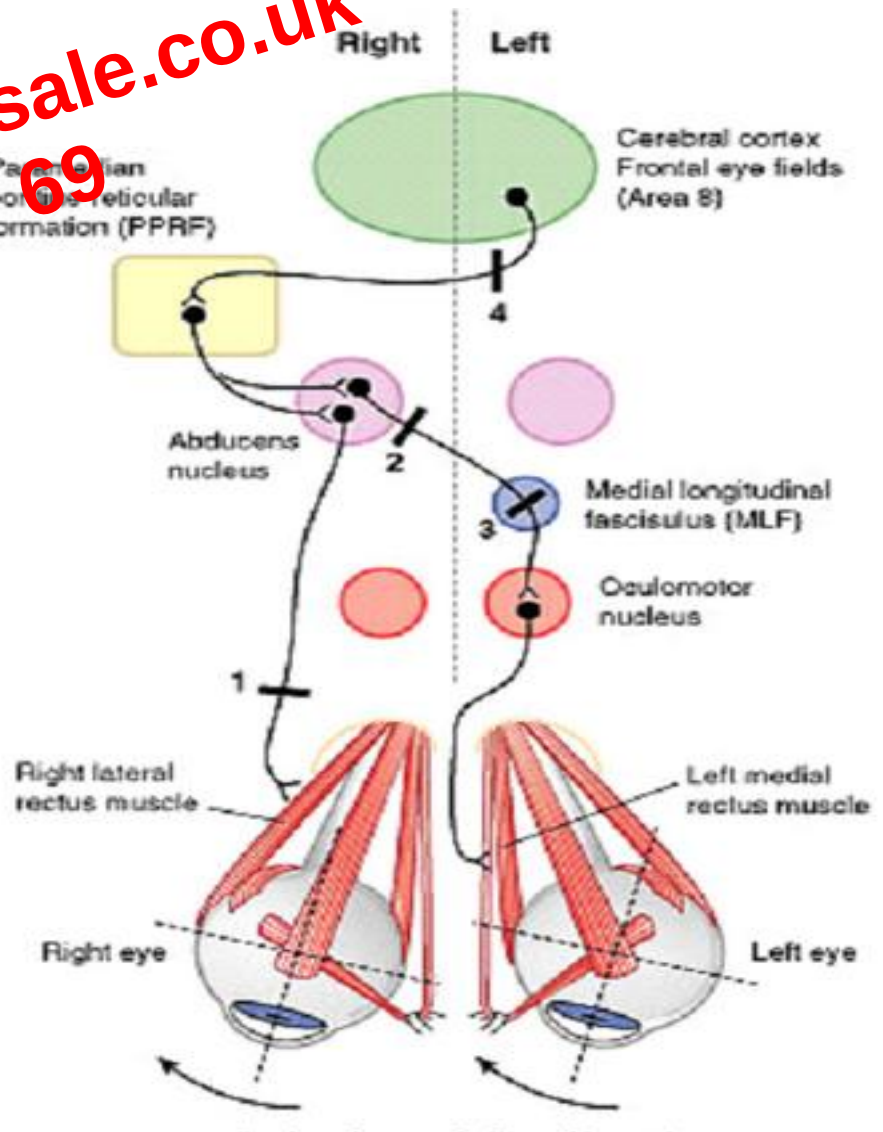
SUPRANUCLEAR OCULAR MOTOR NEURAL PATHWAY

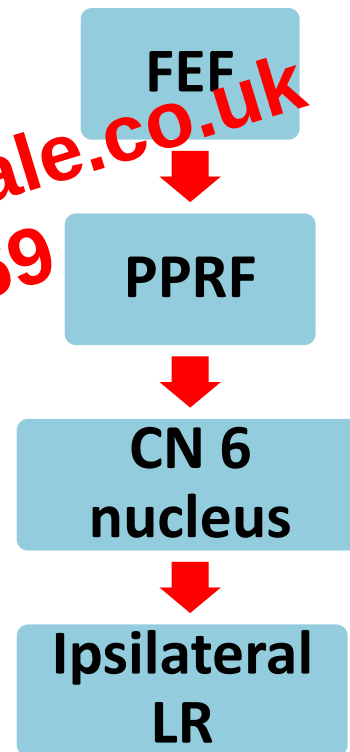
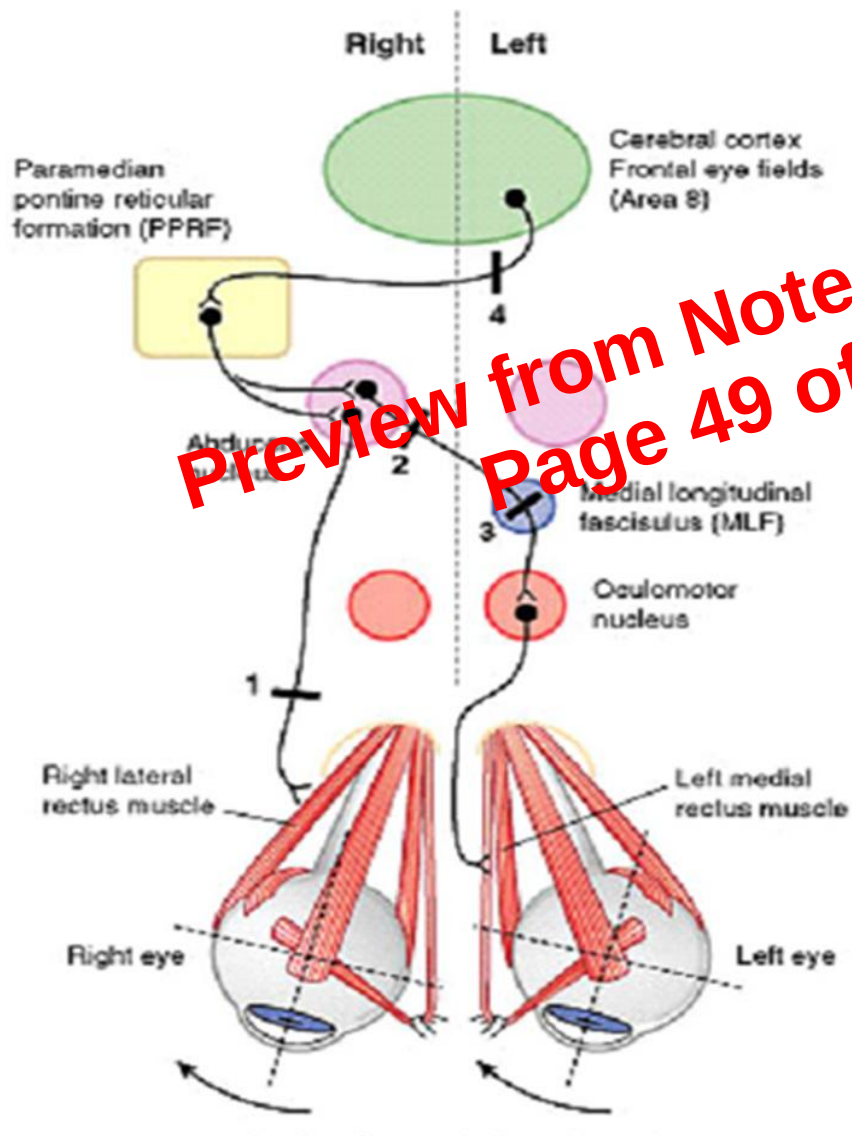
- It concerns with the control of various ocular movements include:

1. Cortical centres
2. Subcortical centres
3. Vestibular system
4. Cerebellum
5. Medial longitudinal fasciculus

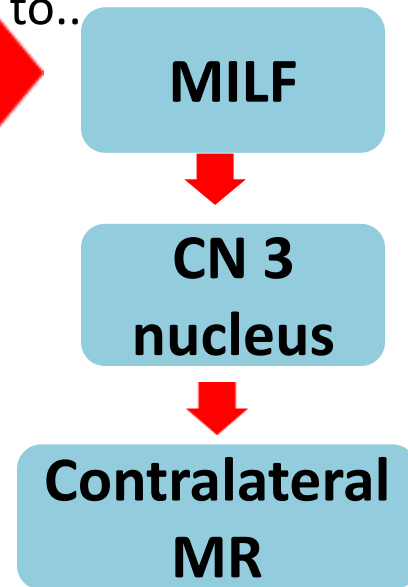
HORIZONTAL SACCADIC MOVEMENT

- Results when the EOM receive signals from one hemisphere.
- Stimulation of the frontal lobe(left) leads to conjugate movement of the eye to the right



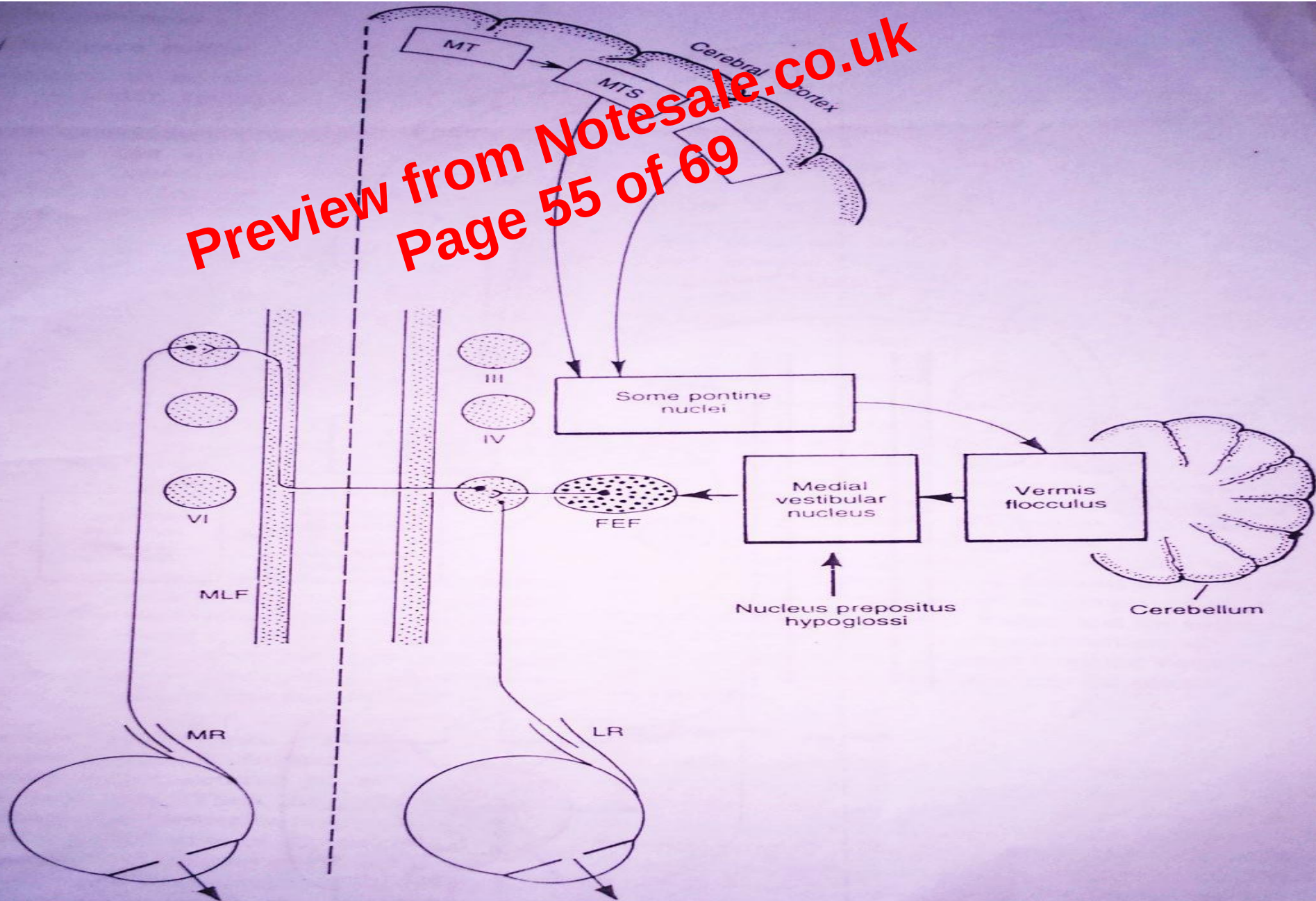


Axons cross the midline and travel to..



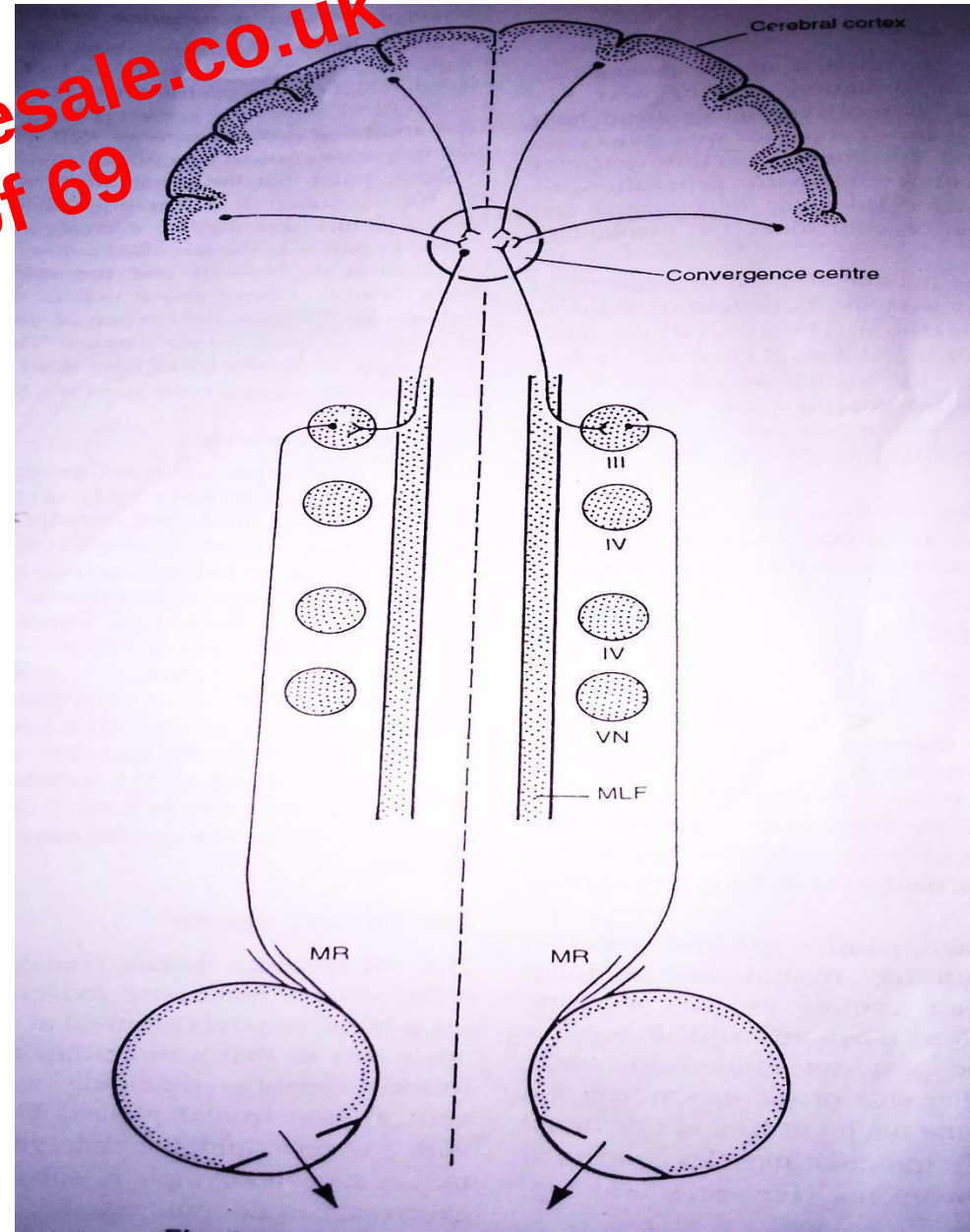
HORIZONTAL SACCADIC MOVEMENT

HORIZONTAL PURSUIT MOVEMENT

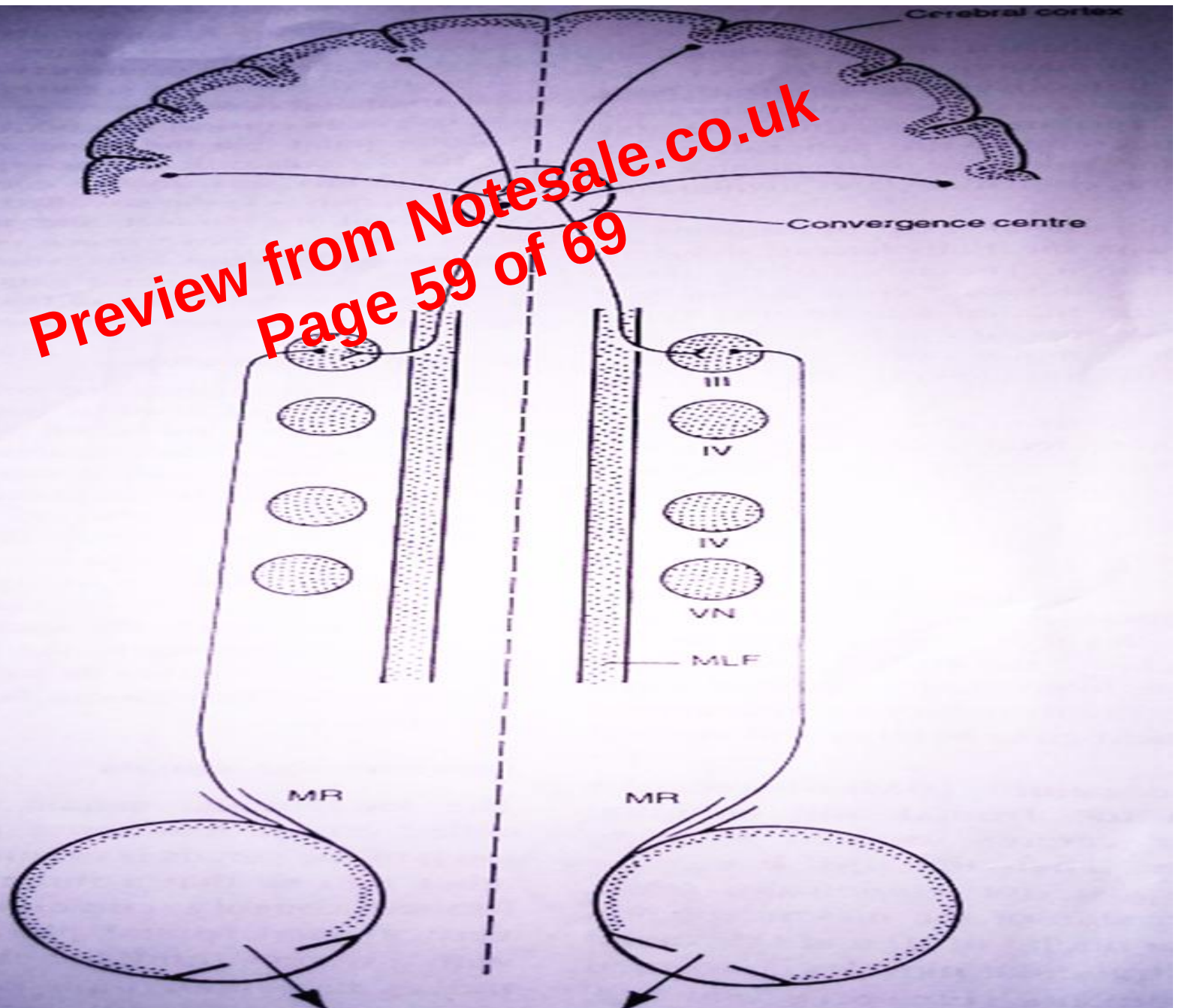


CONVERGENCE & DIVERGENCE CENTRE

- No evidence that such centers exist.
- Yet, clinical evidence shows that pretectal area is a probable site for subcortical convergence.
- Convergence occurs upon bilateral stimulation of either frontal @ occipital motor centres.



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SUPRANUCLEAR EYE MOVEMENT SYSTEM

1. Saccadic
2. Smooth pursuit system
3. Vergence system
4. Vestibular system
5. Optokinetic system
6. Position maintenance system

As discussed

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