

7.5 Comparison of bulbar and pseudobulbar palsy

	Bulbar palsy	Pseudobulbar palsy
Level of motor Lesion	Lower motor neuron	Upper motor neuron
Speech	Dysarthria	Dysarthria and dysphonia
Swallowing	Dysphagia	Dysphagia
Tongue	Weak, wasted and fasciculating	Spastic, slow-moving
Jaw jerk	Absent	Present/brisk
Emotional lability	Absent	May be present
Causes	Motor neuron disease	Cerebrovascular disease, motor neuron disease, multiple sclerosis



11.20 Definitions of paralysis

Term	Definition
Paresis	Partial paralysis
Plegia	Complete paralysis
Monoplegia	Involvement of a single limb
Hemiplegia	Involvement of one-half of the body
Paraplegia/diplegia	Paralysis of the legs
Tetraplegia	Paralysis of all four limbs

Deep tendon reflexes



11.24 Monosynaptic (deep tendon) reflexes and root innervation

Reflex (muscle)	Nerve root
Biceps	C5
Supinator (brachioradialis)	C6
Triceps	C7
Knee (quadriceps)	L3, 4
Ankle (gastrocnemius, soleus)	S1



11.12 Features of motor neurone lesions

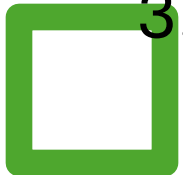
	Upper motor neurone lesion	Lower motor neurone lesion
Inspection	Usually normal (wasting in longstanding lesions)	Wasting, fasciculation
Tone	Increased with clonus	Normal or decreased, no clonus
Weakness	Preferentially affects extensors in arms, flexors in leg	Usually more focal, in distribution of nerve root or peripheral nerve
Deep tendon reflexes	Increased	Decreased/absent
Plantar response	Extensor	Flexor

4- Focal neurological symptoms due to stroke or transient ischaemic attack

- Stroke is a focal neurological deficit of rapid onset that is due to a vascular cause .
- A transient ischaemic attack (TIA) is the same, but symptoms resolve **within 1 hour.**
- TIAs are an important risk factor for impending stroke and demand urgent assessment and treatment.

The oculomotor nerve (III)

- ▶ motor and parasympathetic function
- ▶ Innervates the superior, medial, and inferior recti, the inferior oblique and levator palpebrae superioris muscles
- ▶ Its course is related to posterior communicating artery and cavernous sinus
- ▶ **Function:**
 1. It Moves the globe upwards, downwards, and medially
 2. It elevate the upper lid
 3. Pupillary reflex (constrict pupil)



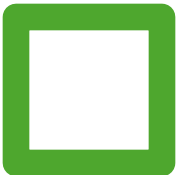
III CN palsy



1. **Unilateral ptosis** (often **complete**)
2. Large pupil (Mydriasis)
3. The eye is looking **inferolaterally**

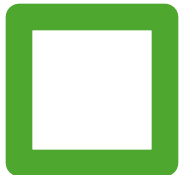
The Trochlear nerve (IV)

- Supplies the superior oblique muscle
- Function: downward movement of the globe when the eye is adducted (inferio-medially)
- IV CN palsy → affected eye is directed superio-laterally.



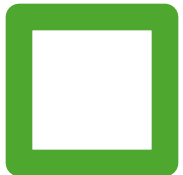
The abducens nerve (VI)

- Supplies the lateral rectus muscle
- Abducts the eye (lateral gaze)
- Has long course around the brainstem before it pierces the dura to enter the cavernous sinus.
- In direct relation to the internal carotid artery before it passes through the superior orbital fissure to the lateral rectus muscle.
- VI CN palsy → affected eye is directed medially.



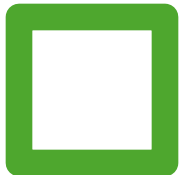
The optic nerve (CN II)

- ▶ Purely sensory
- ▶ Similar to white matter rather than peripheral nerve, is **unable to regenerate**
- ▶ **Function:**
 1. responsible for transmitting visual sensory information from the retina to the brain
 2. The afferent part of the pupillary reflex



The visual pathway lesions:

- **Before the Optic chiasm** - The visual field loss is seen on the same (ipsilateral) side as the lesion
- **After the optic chiasm** - The visual loss is seen on the opposite (contralateral) side of the lesion because the optic nerves have already crossed over at the optic chiasm



The pupillary reflex (2-3) : Pupillary constriction

- ▶ **The afferent limb** involves the **optic nerve**, chiasm and the optic tract, bypassing the lateral geniculate nucleus, synapsing in the pretectal nucleus (superior colliculus) then terminates in the Edinger–Westphal nucleus.
- ▶ **The efferent limb** involves the oculomotor nerve (CN III), passing through the ciliary ganglion in the orbit to the constrictor muscle of the iris via ciliary nerves.

