

Examination of Cranial Nerves and Palsies

Drs Nathan Kerr and Shenton Chew



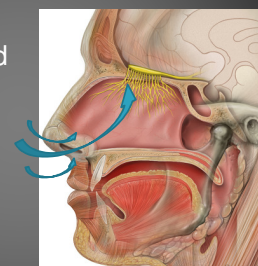
Cranial Nerves

1	Olfactory	On
2	Optic	Old
3	Oculomotor	Olympus
4	Trochlear	Towering
5	Trigeminal	Top
6	Abducens	A
7	Facial	Finn
8	Auditory	And
9	Glossopharyngeal	German
10	Vagus	Viewed
11	Accessory	A
12	Hypoglossal	Hop

Cranial Nerve 1: Olfactory Nerve

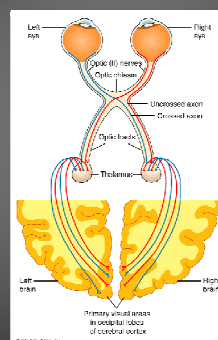
Cranial Nerve 1: Olfactory Nerve

- Not routinely tested



Cranial Nerve 2: Optic Nerve

Cranial Nerve 2: Optic Nerve



Cranial Nerve 2: Optic Nerve

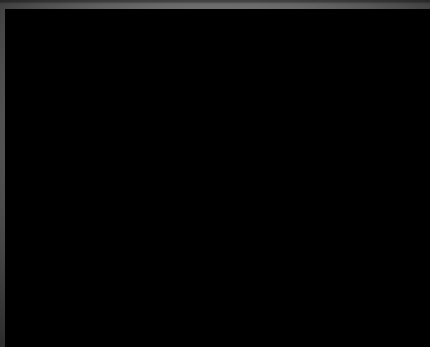
- 1 Visual acuity
- 2 Visual fields
- 3 Colour vision
- 4 Pupils
- 5 Fundoscopy

Visual Acuity



Snellen Chart

Visual Acuity



Visual Acuity



Distance at which the chart is viewed

Distance at which a normally sighted person can view the letter*

*The distance at which the letter subtends five minutes of arc

If patient cannot read largest line

- 1 Move chart closer
- 2 Counting fingers
- 3 Hand movements
- 4 Perception of light

Visual Fields

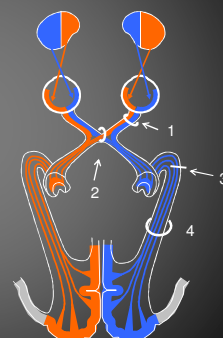
Normal

1

2

3

4



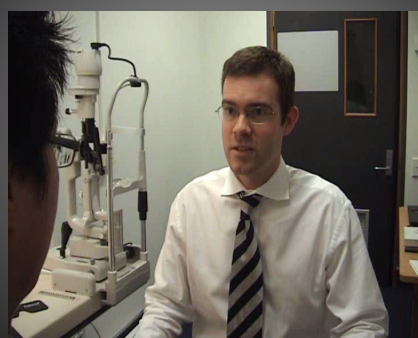
Visual Fields



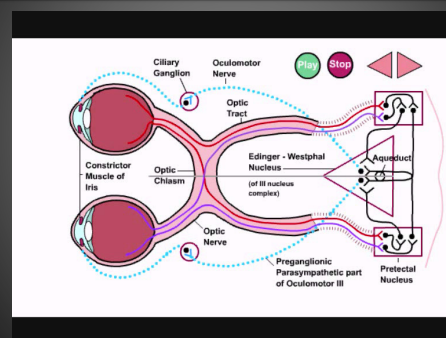
Colour Vision



Colour Vision



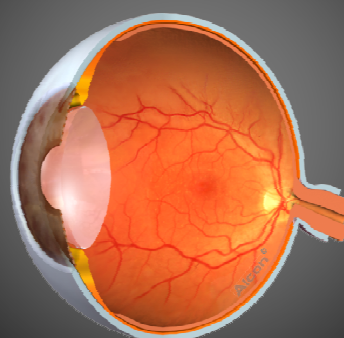
Pupils



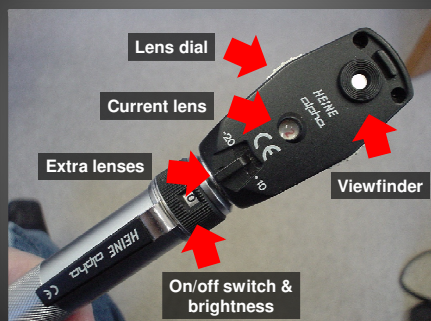
Pupils



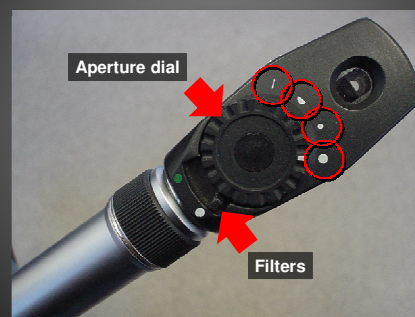
Fundoscopy



Direct Ophthalmoscope



Direct Ophthalmoscope



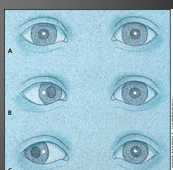
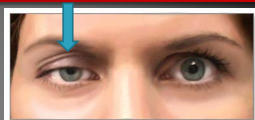
Fundoscopy



Cranial Nerves 3,4,6:
Oculomotor, Trochlear, Abducens

Cranial Nerves 3, 4, 6: Oculomotor, Trochlear, Abducens

- Look
 - Eyelid droop
 - Alignment of eyes
 - Corneal light reflexes



Look



Cranial Nerves 3, 4, 6: Oculomotor, Trochlear, Abducens

- Move
 - “H-pattern”
 - Double vision
 - LFP
 -
 -
 -

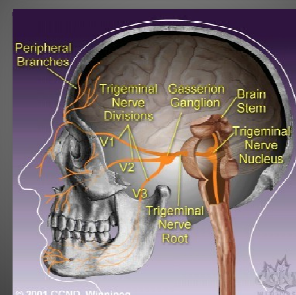


Move

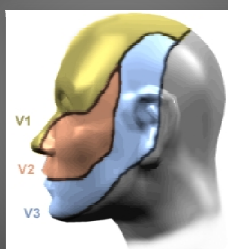


Cranial Nerve 5: Trigeminal Nerve

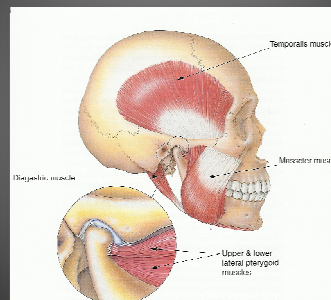
Cranial Nerve 5: Trigeminal Nerve



Cranial Nerve 5: Trigeminal Nerve



Cranial Nerve 5: Trigeminal Nerve



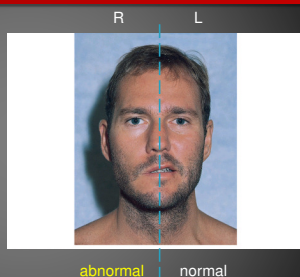
Cranial Nerve 5: Trigeminal Nerve



Cranial Nerve 7: Facial Nerve

Cranial Nerve 7: Facial Nerve

- Look
 - Facial droop
- Move
 - Facial expression

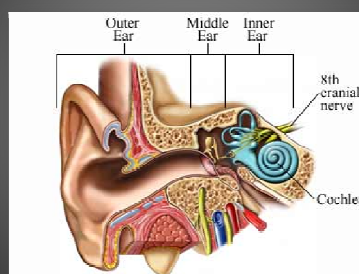


Cranial Nerve 7: Facial Nerve



Cranial Nerve 8: Auditory Nerve

Cranial Nerve 8: Auditory Nerve



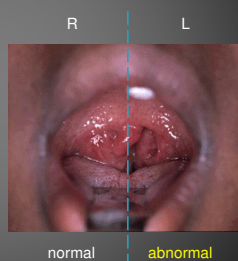
Cranial Nerve 8: Auditory Nerve



Cranial Nerves 9, 10: Glossopharyngeal, Vagus

Cranial Nerves 9,10: Glossopharyngeal, Vagus

- Uvula deviation
- Gag reflex

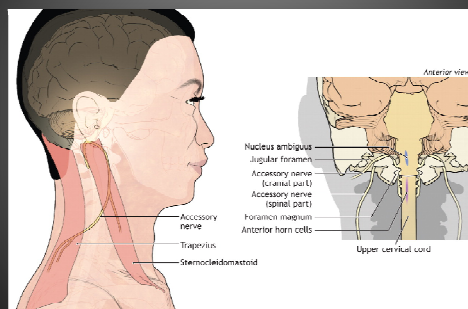


Cranial Nerves 9,10: Glossopharyngeal, Vagus

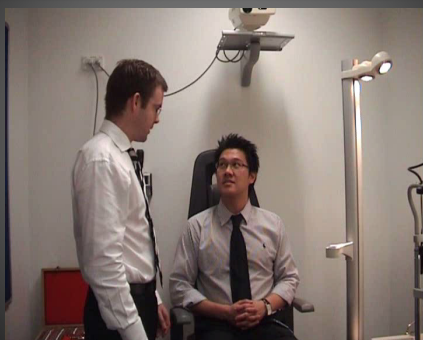


Cranial Nerve 11: Accessory Spinal

Cranial Nerve 11: Accessory Spinal



Cranial Nerve 11: Accessory Spinal



Cranial Nerve 12: Hypoglossal Nerve

Cranial Nerve 12: Hypoglossal

- Tongue deviation

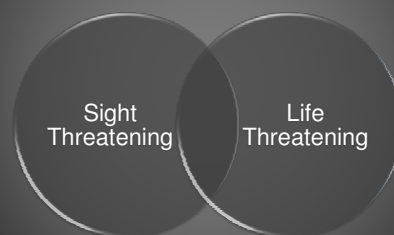


Cranial Nerve 12: Hypoglossal



Cranial Nerve Palsies

Cranial Nerve Palsies



Third Nerve Palsy

Third Nerve Palsy

Symptoms

Double vision
Ptosis
Painful or painless*

*Does not distinguish between microvascular and compression

Third Nerve Palsy

Signs

Ptosis
Eye 'down and out'
Limitation of eye movements in all directions except toward the ear
Dilated pupil, minimally reactive to light

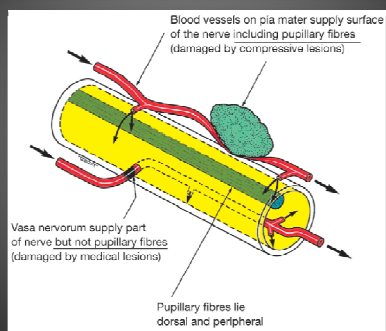
Third Nerve Palsy

Causes

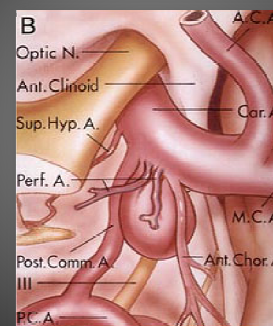
Pupil involving: compressive lesion

Pupil sparing: microvascular disease

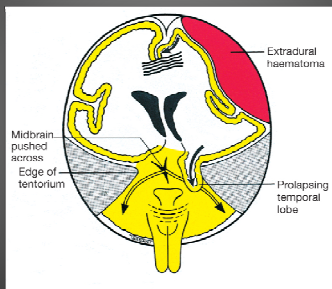
Third Nerve Palsy



Third Nerve Palsy



Third Nerve Palsy



Third Nerve Palsy



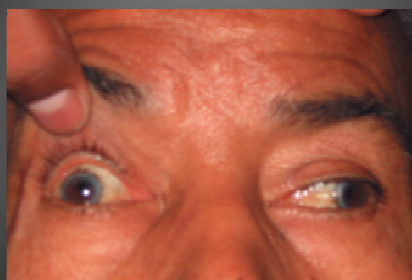
Third Nerve Palsy



Third Nerve Palsy



Third Nerve Palsy



Third Nerve Palsy



Third Nerve Palsy



Third Nerve Palsy

Management

1. Immediate FBC, ESR, CRP if > 55 y
2. Immediate neuroimaging if pupil involving

Fourth nerve palsy

Fourth nerve palsy

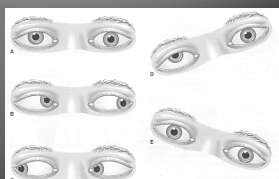
History

Vertical double vision

Fourth nerve palsy

Exam

Head tilt (toward normal side)
Affected eye higher (often subtle)



Fourth nerve palsy

Causes

Trauma
Microvascular
GCA

Tumour, hydrocephalus, aneurysm

Fourth nerve palsy

Management

MRI Brain (Age<45, other CN nerves involved)
FBC, ESR, CRP (Age>55)
Refer Ophthalmology

Sixth nerve palsy

Sixth nerve palsy

History

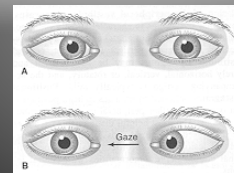
Horizontal double vision

Sixth nerve palsy

Exam

Eye turned in
Poor outwards movement

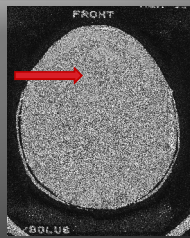
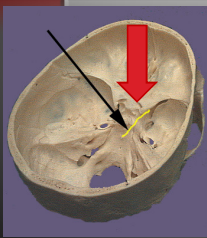
?Bilateral ?Swollen discs



Sixth nerve palsy

Causes

Microvascular (DM, Atherosclerosis)
Trauma, GCA
Raised intracranial pressure ?mass



Sixth nerve palsy

Management

MRI Brain (Age<45, bilateral, swollen discs)
FBC, ESR, CRP (Age>55)
Refer Ophthalmology

Seventh Nerve Palsy

Seventh Nerve Palsy

Symptoms

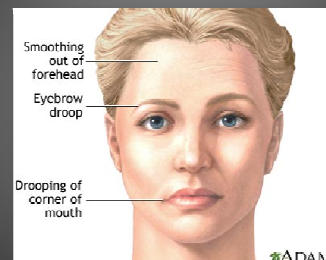
Weakness of one side of face
Inability to close eye
Excessive drooling

Seventh Nerve Palsy

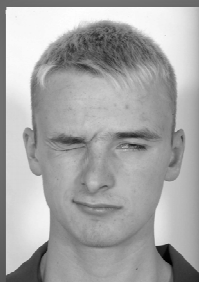
Examination

Weakness of one side of the face
Loss of nasolabial fold
Drooping of corner of mouth
Ectropion
Lagophthalmos

Seventh Nerve Palsy



Seventh Nerve Palsy



Seventh Nerve Palsy

Causes

Tumours
Trauma
Stroke
Infection
Iatrogenic
Idiopathic (Bell's palsy)

Seventh Nerve Palsy

Management

Refer as appropriate
Tape eye at night
Lacrilube nocte
Monitor for exposure keratopathy

Seventh Nerve Palsy

Prognosis

86% of patients with Bell's palsy recover completely within 2 months

Giant Cell (Temporal) Arteritis

Giant Cell (Temporal) Arteritis

Polymyalgia
Rheumatica
(PMR)

Giant
Cell
Arteritis
(GCA)

Giant Cell Arteritis

History

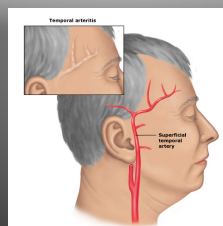
Age > 50
Headache
Scalp tenderness
Jaw claudication
Fever, fatigue, weight loss
Proximal myalgia

Vision Loss (15-20%)
Double vision*

Giant Cell Arteritis

Exam

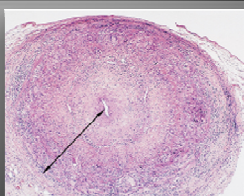
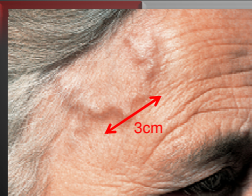
Temporal arteries (tender, not pulsatile)
Cranial Nerve 2 (vision, colour, pupil, fundus)
Cranial Nerve 3, or 4, or 6



Arteritic Ischaemic Optic Neuropathy (Giant Cell Arteritis)

Management

1. Immediate FBC, ESR, CRP
2. Immediate systemic steroids (determine dose with Ophthalmology Registrar)
3. Transfer Ophthalmology
4. Temporal artery biopsy



Thank you