

Cranial Nerve Examination

I. Olfactory nerve

- Ask about the sense of smell and taste
- Formal tests – smelling bottles and ‘scratch and sniff’ cards

II. Optic nerve

- Visual acuity
 - Jaeger card – near vision
 - Snellen chart – distant vision
- Colour vision
 - Ishihara charts
- Fields of vision
 - Confrontation testing nasal and temporal quadrants of each eye individually
 - Visual inattention
 - Compare blind spots
- Optic fundus
 - Screen for diabetes, hypertension, optic atrophy, papilloedema
 - Retinal vein pulsation excludes papilloedema

III, IV, VI. Oculomotor nerve, Trochlear nerve, Abducens nerve

- Ptosis
 - Abnormal for lid to cover more than upper 1/3 of cornea
 - Unilateral ptosis
 - Third nerve palsy
 - Horner's syndrome
 - Bilateral ptosis
 - Myopathy
- Pupils
 - Size and shape
 - Reaction to light – direct and consensual
 - Reaction to accommodation – convergence and constriction
- Eye movements
 - Inspect for strabismus
 - Move finger through H shape
 - Look for nystagmus – involuntary rhythmical oscillation of the eyes
 - Labyrinthine disorders
 - Retinal disorders

- Brain stem lesions

- Oculomotor paresis - eyes point down and outwards
- Trochlear paresis – eye cannot look down and in
- Abducens nerve – eye cannot look laterally

V. *Trigeminal nerve*

- Sensation
 - Test sensation of the face to light touch, pin prick and temperature in the three divisions (e.g. close eyes – what side do you feel this on – left or right)
- Corneal reflex
 - Using cotton wool, both eyes should shut simultaneously
 - Reduction suggests cerebellopontine angle lesion
- Mastication
 - Bulk of masseter and temporalis
 - Open jaw slowly against resistance
 - Close jaw slowly against resistance
- Jaw jerk
 - Tap finger placed horizontally across chin
 - Increase suggests UMN lesion

VII. *Facial nerve*

- Inspection
 - Asymmetry
- Upper face
 - Screw up the eyes
 - Raise eyebrows
 - Lower eyebrows
 - Bilaterally innervated – synchronised eye closure protective measure
- Lower face
 - Show teeth in a smile
 - Whistle
 - Blow out cheeks in against resistance

Unilateral weakness of the lower face suggests UMN lesion, whereas weakness of both upper and lower face is due to a LMN lesion.

- Taste to anterior 2/3 of the tongue via chorda tympani

VIII. *Vestibulocochlear nerve*

- Hearing

- Whisper number whilst distracting at other ear
 - Rinnes – tuning fork (C = 256 or 512) on mastoid to compare bone and air conduction
 - Webers – tuning fork on forehead in midline and assess if localised to one ear.
- Auroscopy
- Vestibular apparatus
 - Observe gait
 - Look for nystagmus particularly with change of head position

IX. Glossopharyngeal nerve

- Palatal sensation
 - Sensation lost on side of lesion
- Taste to posterior 1/3 of tongue

X. Vagus nerve

- Palatal elevation
 - Look above uvula as patient says aah
 - Uvula deviates away from side of the lesion
- Cough
 - Assess the patient cough – bovine in RLN injury
- Gag reflex
 - Reflex arc involving IX and X upon pharyngeal wall of palate stimulation

XI. Accessory nerve

- Inspect
 - Wasting of trapezius and sternocleidomastoid
- Trapezius
 - Shrug shoulders against resistance
- SCM
 - Bilateral – lift head off couch against resistance
 - Unilateral – turn head against resistance

XII. Hypoglossal nerve

- Inspect tongue for fasciculations on floor of mouth
- Look for deviation of tongue upon protrusion

- Assess ability of tongue to move from side to side

UMN lesion – small tongue with diminished voluntary movements

LMN lesion – wasting and fasciculation. Tongue will deviate towards affected side