

### Preparation:

<b>W</b>	Wash Hands	Snellen Chart	
<b>I</b>	Introduce Yourself + Patient's Identity	Pen torch	
<b>P</b>	Permission	Cotton Wool	
<b>P</b>	Patient Position + Pain	Ophthalmoscope	Only necessary for funduscopy
<b>E</b>	Explanation	Tuning Fork	256Hz or 512Hz

Patient should be at the same level as the examiner

### General Observations

#### Check visually from the end of the bed:

- Muscle wasting, fasciculations, or tremor
- Facial asymmetry or loss of expression
- Ptosis
- Strabismus (misaligned eyes)
- Salivation
- Obvious discomfort or pain

### CN 1 Olfactory

Changes in taste or smell recently? Explored with a smell testing kit

Tested positive for Covid-19 previously?

### CN 2 Optic

**Visual Acuity** Examined using a Snellen chart or text held at arms length

**Visual Fields** Examiner and patient close one eye. Examiner moves an object closer to the centre of the **midline**. Patient remarks when it enters their field of view.

**Fundoscopy** *Not required in DEM2*

**Light Reflexes** **Direct light reflex**

(Look in the same eye as the light)

**Consensual light reflex**

(Look at the opposite eye to the light)

**Accommodation** Pupils constrict as object is brought closer

Patient should wear glasses if normally worn.

Offer to check **near, far, central, and colour vision**.

#### Light Reflexes:

- Sensory -> CN2
- Motor -> CN3

### CN 5 Trigeminal

#### Sensory:

**Touch Response** Touch ophthalmic, maxillary and mandibular regions of the face with cotton wool, compare sensation on both sides.

Show the patient what it feels like first by touching to a central point (chest)

Offer to repeat with a pointed object

**Corneal Reflex** **Omitted if a lesion is not suspected**

Touch lateral region of cornea with a damp piece of cotton wool => Bilateral blink response

#### Motor:

**Muscles of Mastication** Patient clenches jaw shut, examiner palpates temporals, and masseter.

Patient opens mouth, examiner attempts to close it, patient should be able to resist.

Patient opens mouth and move jaw from side to side => Jaw will deviate to the side of the weak pterygoid.

### CN 7 Facial

**Patient raises eyebrows** Symmetrical wrinkling of forehead due to contraction of the frontalis muscle

**Patient squeezes eyes tightly shut** Examiner attempts to open eyes using thumbs

Tests orbicularis oculi.

**Patient smiles** Symmetrical smile and equal action of the orbicularis muscle

**Patient blows up cheeks** Checks buccinator muscle

If cheeks are pressed lightly by examiner no air should escape

Do a quick general inspection of the face before starting, check for drooling, facial asymmetry, etc.

## CN 3,4,6 Oculomotor, Trochlear, Abducens

### Ocular Movements

Patient follows tip of pen in a H shape  
Should be tested to all extremes of eye movement

### LR<sup>6</sup>SO<sup>4</sup>(3)

Lateral Rectus => CN6

- Eye will not abduct normally, double vision, horizontally displaced

Superior oblique => CN4

- Double vision with oblique displacement of images, left palsy -> occurs when looking to the right, etc.

All other extraocular muscles => CN3

- In full palsy pupil will be dilated and deviate downwards and outwards
- Also innervates levator palpebrae superioris => Ptosis in palsy



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### CN 8 Vestibulocochlear

**Simple Hearing Test** Cover one ear and whisper a number in the other, ask the patient to repeat back to you.

**Test** Repeat for both ears

**Weber's Test:** Place the tuning fork in the centre of the patient's forehead and ask if it is louder on one side or the other.  
Normal => equal loudness on both sides

**Rinne's Test:** Place tuning fork on the patient's mastoid process with the prongs perpendicular to the ear, patient should identify when they can no longer hear it. Then move the tuning fork in front of their ear.  
Repeat for both ears

#### Rinne's Test:

Air conduction > bone conduction = Positive Rinne's  
Bone conduction > air conduction = Negative Rinne's

#### Weber's Test:

Heard in the midline = Normal  
Louder in a ear with a **negative** Rinne's test = Conductive hearing loss  
Louder in a ear with a **positive** Rinne's test = Sensorineural hearing loss

### CN 9, 10, 12 Glossopharyngeal, Vagus, Hypoglossal

**CN 10 Vagus** Ask patient to perform a loud cough.

**Articulation** Ask patient to say the days of the week.

**Depress tongue with tongue depressor** When patient says "ahh", the soft palate should elevate symmetrically.  
Will deviate towards the stronger side if palsy.

**Gag Reflex** *Not normally tested in a conscious patient*

Sensory - CN9 Glossopharyngeal  
Motor - CN10 Vagus

**CN 12 Hypoglossal** Ask patient to open mouth, stick out tongue, move tongue from side to side, examiner places hand on patient's cheek and asks patient to press tongue against his hand

### CN 11 Accessory

**Patient shrugs shoulders** Ask the patient to shrug their shoulders using your hands on their shoulders to resist the movement.

Symmetrical

**Sternomastoid** Ask the patient to turn their head to each side using your hand on their cheek to resist the movement.

### Completing the examination

**Thank Patient**

**Sanitise hands and equipment**

Other examinations to consider:

- Neurological examination of the limbs
- Mental state examination

