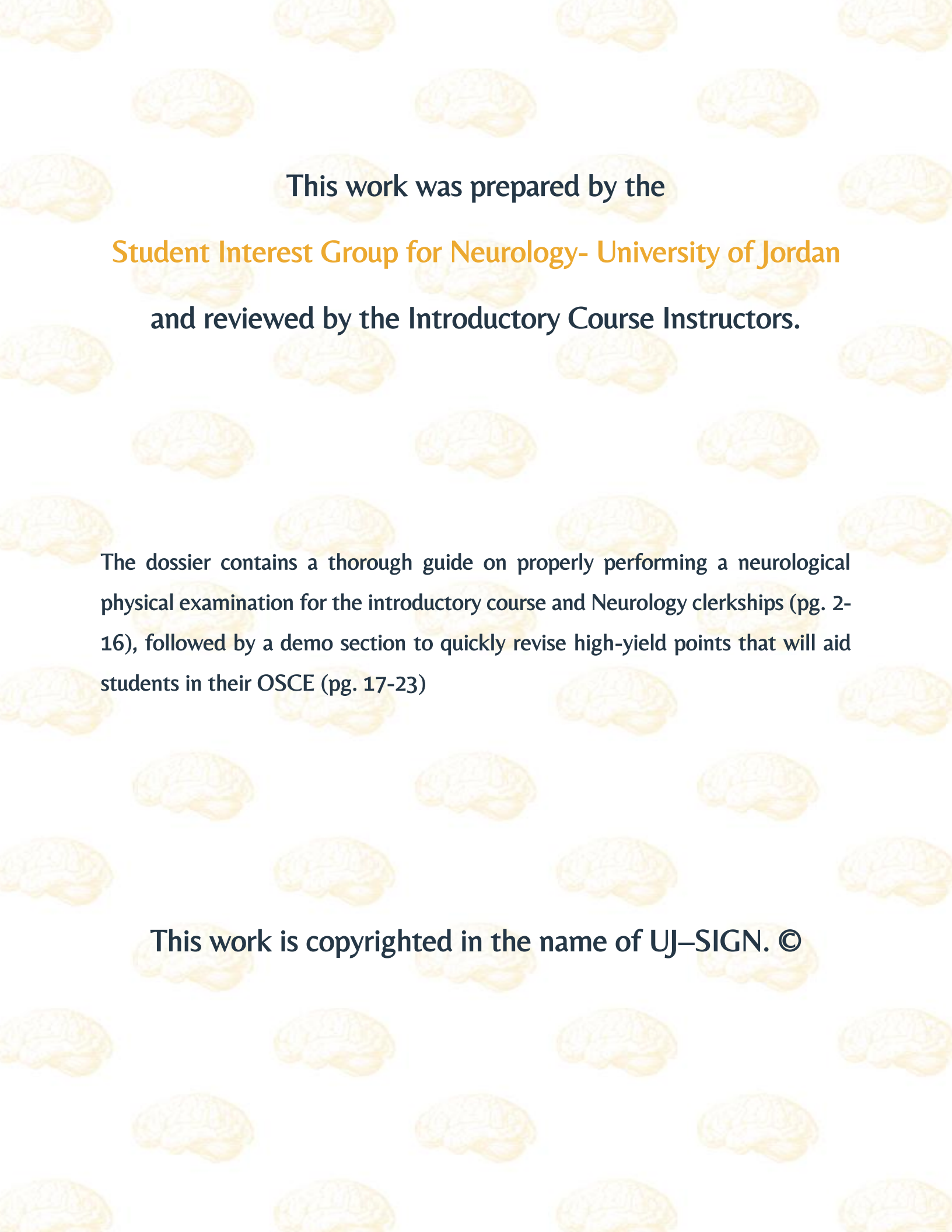




NEUROLOGICAL PHYSICAL EXAM

FOR 4TH YEAR INTRODUCTORY COURSE ©

PROOFREAD & VALIDATED



This work was prepared by the
Student Interest Group for Neurology- University of Jordan
and reviewed by the Introductory Course Instructors.

The dossier contains a thorough guide on properly performing a neurological physical examination for the introductory course and Neurology clerkships (pg. 2-16), followed by a demo section to quickly revise high-yield points that will aid students in their OSCE (pg. 17-23)

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General Points

As with any PE, before you start:

1. **Introduce** yourself and take permission.
2. **Hand hygiene** and warm hands.
3. Ensure privacy, temperature and illumination.
4. Assess the **conscious level**: conscious+alert+oriented to time, place and person.
You can also use the Glasgow Coma Scale.
5. Ensure the presence of a **chaperone**.

And do not forget to:

6. Check the exposure and position.
7. Check the vital signs: HR, BP, RR, O₂ Sat, Temperature.
8. General look: looks well/ill, anxious/relaxed/distressed, any attached devices, etc.
9. Inquire about the presence of pain at any site before examination.
10. Maintain eye-eye contact (pt will squint when in pain).
11. Look for signs of **meningeal irritation**: neck stiffness, Brudzinski's sign, Kernig's sign. (Additional)

And do not forget to speak out your findings!

Sensory Examination

This section explains the steps for administering a sensory exam, and they can be applied on any part of the body. Correlate them with the dermatomes or suspected deficits of the body part you are examining.

1. Light touch

- Ask the patient to close their eyes or look away.
- Use a wisp of cotton wool or a touch pen and ask the patient to confirm each touch by responding "Yes".
- Make sure to dab rather than stroke.
- Make sure to **compare** right and left *but dab irregularly* as to not show the pt a pattern.
- Start **distally in the hands and feet**, **proximally in the case of neuropathy**, and concentrate on a particular dermatome or distribution of nerves. [Fig. 1]

2. Superficial pain

- Ask the patient to close their eyes or look away.
- Use a special neurological pin.
- Make sure to **demonstrate and explain** that the ability to feel a sharp pinprick is being assessed on an area of the skin not affected by a lesion, such as the sternum.

- Map out the boundaries of any area with a changed sensation and describe this change (reduced, absent, or increased).
- Make sure to move from areas with reduced sensation to areas with increased sensation.

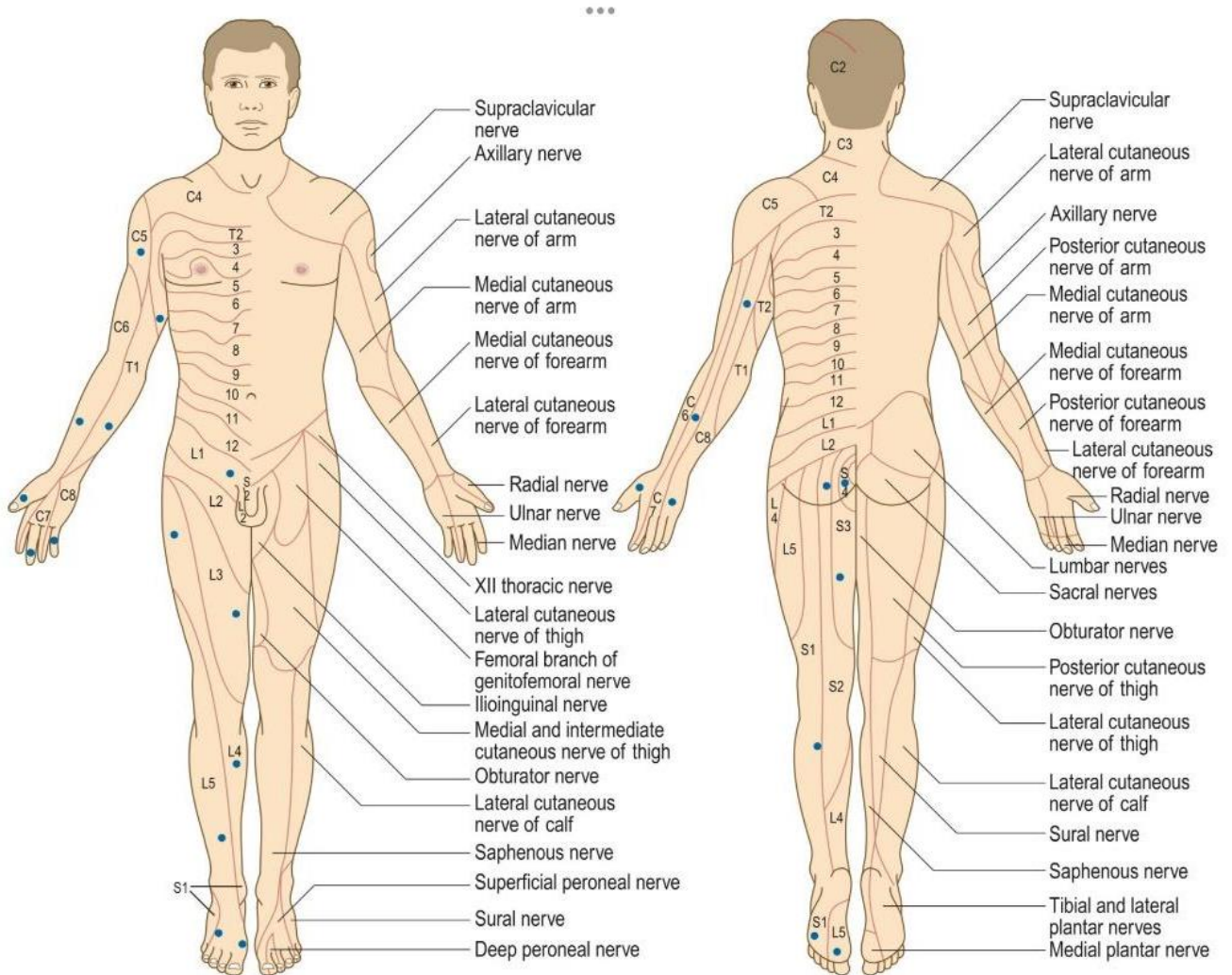


Fig. 1) Dermatomal nerve root distribution along the body.

3. Temperature

- Use a cold metallic object such as a tuning fork to touch the patient and ask if it feels cold.
- Map out the boundaries of any area with a changed sensation and describe this change (reduced, absent, or increased).

4. Vibration

- Ensure the tuning fork vibrates by hitting it, then place it on the patient's sternum and ask whether he feels the vibration.
- Start your examination **distally then move proximally**:

- **Lower limb:** start from the interphalangeal joint → if impaired, proceed proximally to the medial malleolus → tibial tuberosity → anterior iliac spine, depending upon the patient's response.
- **Upper limb:** start at the DIP of the forefinger □ if impaired, proceed proximally to MCP → wrist → elbow → shoulder → clavicle.
- Repeat on the other side.

5. Proprioception (Sensation of Joint Position)

- Demonstrate the procedure to the patient with his eyes opened: hold the distal phalanx of the patient's great toes and tell the patient that you are going to move it up and down.
- Ask the patient to close their eyes and then ask them if you moved their big toe up or down.
- Move to a more proximal joint if perception is impaired and repeat the process on the opposite side.

6. Stereognosis and Graphesthesia

- Ask the patient to close their eyes then evaluate their ability to:
 - Recognize a familiar object placed it in their hand e.g. coin or key (**Stereognosis**)
 - Identify a figure (letter or digit) drawn on their palm using the blunt end of a pencil (**Graphesthesia**)

7. Point localization and sensory inattention

- Point localization:
 - Touch their arms/legs in turn and ask which side has been touched.
 - Touch different fingers and ask the patient which is touched
- Sensory inattention:
 - Touch both sides simultaneously and ask whether right, left, or both sides were touched.

<u>Reflexes Grading Scale</u>	
<u>+4</u>	<u>Very brisk/hyperactive reflex, Clonus</u>
<u>+3</u>	<u>Brisk reflex, possible disease but could be normal</u>
<u>+2</u>	<u>Normal reflex</u>
<u>+1</u>	<u>Trace reflex, weaker than normal</u>
<u>0</u>	<u>No response</u>

Table 2) Reflexes Grading Scale

Upper Limb Examination

Position: seated at the side of the bed

Exposure: the entire upper limbs

1. Inspection [SWIFTD + PD]

Scars/ symmetry

Wasting

Involuntary movements or myoclonic jerks

Fasciculations

Tremor

Deformities

+

- **Pronator drift:** ask the patient to place their arms straight out with their palms up (supinated) and close their eyes. Wait for seconds and observe for a 'pronator drift'.

2. Palpation

- Ask about any pain and warm your hands before starting, assess at the hand, IO spaces, and arm.
- Muscle Bulk: atrophy or hypertrophy (or normal)
- Tenderness

3. Tone

- Wrist → elbow → shoulder.
- Ask if there is any pain or limitation of movement, then tell the patient رَيْحِ حَالِكْ.
- Passively move the pt's joints through the full range of motion.
- Shake the pt's hand, supporting the elbow with the other hand, and perform the full range of motion at the wrist, elbow, and shoulder.

Comment: normal symmetrical tone, no resistance to passive movements

MRC Muscle Power Grading	
5	Normal movement against resistance
4	Weaker than normal movement against resistance
3	Movement against gravity but not against resistance
2	Movement when the effect of gravity is eliminated
1	Muscle flicker but no movement
0	No visible muscle contraction

Table 1) Medical Research Council Muscle Power Grading Scale

4. Power [3 Pairs + 3 Fingers]

Examine actively against gravity then passively against resistance. Use the **MRC Muscle Power Grades (Table 1)**.

- **Shoulder abduction (Deltoid–axillary n.)** abduct shoulders to 90 degrees & ask the patient to resist you pulling their arms downwards.
- **Shoulder adduction (Pectoralis–pectoral nerves, Latissimus–thoracodorsal n., Teres major–lower subscapular n.)** shoulders at 45 degrees & ask the patient to resist you pulling their arms upwards.
- **Elbow flexion (Biceps–musculocutaneous n.)** elbows flexed & ask the patient to resist you pulling their forearm down.
- **Elbow extension (Triceps–radial n.)** elbows flexed & ask the patient to resist you pushing their forearm in.
- **Wrist flexion (Flexors–Median & Ulnar n.)** arms straight out with the wrist fully flexed (patient asking someone to kiss their hand, but with their fist closed) & ask the patient to resist you pulling their fists up.
- **Wrist extension (Extensors–radial n.)** arms out straight while making a fist, with the wrist fully extended (patient flying like superman) & ask the patient to resist you folding their fists in.
- **Thumb abduction (Abductor pollicis brevis–median n.)** arms straight out, palms up, thumbs up, ask the patient to resist you tucking their thumb in.
- **Finger extension (Extensors–post. interosseous n. of radial n.)** arms straight out, fingers close together pointing forward, ask the patient to resist you pushing their fingers down.
- **Finger abduction (Interossei–ulnar n.)** arms straight out, fingers spread, ask the patient to resist you tucking their finger in *only for the index and pinky fingers.

Comment: symmetrical power bilaterally + mention grade.

5. Reflexes (Table 2)

- ❖ **Biceps (C5 + C6):** patient's hand rested on their lap, put two fingers on the bicep (at the cubital fossa) and strike on your fingers.
- ❖ **Triceps (C6 + C7):** same position of hand, hit slightly proximally to the back of the elbow. Alternatively, you can lift the patient's arm with your other hand while letting their forearm hang loose (this should be used when testing for a pendular reflex in the cerebellar exam).
- ❖ **Supinator (C5 + C6):** put two fingers at the radial part of the wrist and strike on them.
- ❖ **Finger jerk reflex (C8):** rest the patient's fingers on your index and middle finger, strike on the back of your fingers.
- ❖ **Hoffman's Sign:** flick the patient's middle finger with your thumb, with your index finger supporting the patient's finger (**indicates cervical myelopathy**).
- ❖ **Primitive reflexes (mention):** snout, grasp, palmomental, glabellar tap, Babinski reflex.

Comment: (+2) symmetrical reflexes bilaterally.

Lower Limb Examination

1. Inspection [**SWIFT D**]

Scars/ symmetry

Wasting

Involuntary movements or myoclonic jerks

Fasciculations

Tremor

Deformities

2. Stance and gait

• Stance

- Ask the patient to stand with their eyes open (rule out **cerebral ataxia**) then close their eyes while standing and notice any imbalance (negative **Romberg's test**, rule out **sensory ataxia**).
- Assess for **proximal muscle weakness** (Ask the patient to cross their arms around their chest and assess if they can get up off the bed from a sitting position without difficulty).

• Gait

- Ask the patient to walk across the room and observe symmetry, speed and balance.
- Ask the patient to walk one foot in front of the other and observe symmetry, speed, and balance.
- Ask the patient to walk on his tiptoes to check for plantar muscle power.
- Ask the patient to walk on his heels to check for dorsiflexion power. Rule out foot drop.
- Check for the presence of arm swinging.

Comment: normal, good gait & stance.

3. Palpation

- Muscle Bulk
- Tenderness

4. Tone

- Passively move the patient's hips in a rotational movement.
- Passively flex and extend the patient's knees
- Leg roll: roll patient's legs horizontally + Leg lift: hold patient's knee up and release it.
- Knee clonus: press on the patella of the patient and notice any clonus.
- Ankle clonus: partially evert and briskly dorsiflex foot, look for repeated beats of dorsiflexion/plantarflexion.

5. Power

- ❖ Hip flexion (**Iliopsoas-L1, L2**) and extension (**L5, S1**).
- ❖ Hip adduction (**L2, L3**) and abduction (**L4, L5**).

- ❖ Knee flexion (**Hamstrings–S1**) and extension (**Quadriceps–L3, L4**).
- ❖ Ankle dorsiflexion (**Ant. Tibialis–L4**), plantar flexion (**Soleus/Gastrocnemius–S1, S2**).
- ❖ Ankle inversion (**L4**), eversion (**L5, S1**).
- ❖ Big toe extension (**L5**).

6. Reflexes

- ❖ Knee jerk (L3, L4)
- ❖ Ankle jerk (L5, S1)
- ❖ Plantar reflex (S1, S2) (UMN: extension of the big toe)

7. Coordination

- **Heel to shin test:** With the patient supine, ask them to lift the heel into the air and to place it on their opposite knee, then slide their heel up and down their shin between the knee and ankle (look for **dysmetria, dyssynergia past pointing, or intention tremor**).
- Repeat on the other side.

Cerebellar Examination

1. Speech

Let the patient introduce themselves to you. Rule out dysarthria, staccato speech, and dysphonia.

2. Stance and gait

- **Stance**

- Stand near the patient and hold your hands around the patient so you're ready to catch them should they get unsteady.
- Ask the patient to stand with their eyes open (rule out **cerebral ataxia**) then close their eyes while standing and notice any imbalance (negative **Romberg's test**, rule out **sensory ataxia**).
- Assess for **proximal muscle weakness** (Ask the patient to cross their arms around their chest and assess if they can get up of the bed from a sitting position without difficulty).

- **Gait**

- Ask the patient to walk across the room and observe symmetry, speed and balance (rule out **ataxia and a wide-based gait**).
- Ask patient to walk one foot in front of the other. Observe symmetry, speed, balance.
- Ask patient to walk on his tiptoes to check for plantar muscle power.
- Ask patient to walk on his heels to check for dorsiflexion power.
- Check for the presence of arm swinging.

Comment: normal, good gait & stance.

3. Eye movements

Demonstrate the letter H with your finger and ask the patient to follow your finger (Rule out **nystagmus**).

4. Upper limb

- Assess tone (rule out **hypotonia**).
- Reflexes: biceps, supinator, triceps (rule out **pendular** reflexes).
- Finger to nose test: (look for **dysmetria**, **dyssynergia** past pointing or intention tremor).
- Rapid alternating movement (rule out **dysdiadochokinesia**).
- Repeat on the other side.
- **Rebound phenomena**: Ask the patient to stretch their arms out and maintain that position, then push both patient's wrists down quickly and observe if their arms briskly return to their original position.

5. Lower limb

- Rule out **hypotonia**.
- Reflexes: knee, ankle (rule out **pendular** reflexes).
- Heel to shin test: With the patient supine, ask them to lift the heel into the air and to place it on their opposite knee, then slide their heel up and down their shin between the knee and ankle (look for **dysmetria**, **dyssynergia** past pointing, or intention tremor).

- Repeat on the other side.

6. Apraxia

- Perform a complex task (fold a paper)
- Draw a V line in the air
- Copy a drawing
- Dress up
- Lie on the couch and perform cycling movement.

UUSIGN

Cranial Nerves Examination

1. Cranial Nerve I (Olfactory)

- Assess the patient's breathing from each nostril, note normal breathing or any obstructions in either nostril.
- Scratch-and-sniff cards to assess the sense of smell for each nostril.

2. Cranial Nerve II (Optic)

➤ Inspection

Sclera: normal white sclera

Conjunctiva: no erythema or pallor

Eyelids: normal position, normal margins, no swelling or masses, lid lag, ptosis

Cornea: no ulcers, foreign bodies or clouding

Pupils: normal size, symmetric, central

Proptosis (from behind & above the patient)

Periorbital swelling

➤ Pupils:

- **Direct & consensual light reflexes:** Ask the patient to fix his eyes on a distant point straight ahead and a bright light from the side onto the pupil.
- Look for constriction of that pupil (direct light reflex).
- Repeat and look for in of the opposite pupil (consensual light reflex).
- Repeat for the other eye.
- **Relative afferent pupillary defect:** Move a bright light quickly from one eye to other, keeping it on each eye for at least 3 seconds.
- **Accommodation reflex:** Ask the patient to focus on a distant object, then ask them to focus on a near object (your finger held in front of their face). The pupils should constrict when they switch to the near object

➤ Visual fields

1. Homonymous defect:

- Keep your eyes open and ask the patient to do the same.
- Hold your hands out to their full extent at 10 and 2 o'clock, waggle a fingertip slowly to the center and ask the patient to say when they see it move.
- Repeat this for 8 and 4 o'clock (to screen the 4 outer quadrants of the patient's visual field).

2. Sensory inattention:

It's the same test, but this time you move both fingers simultaneously (both 10 & 2 o'clock at the same time, and then both 8 & 4 o'clock at the same time.) Ask the patient which side they saw move (right, left, or both). Identify the affected quadrant (if there was one).

3. Peripheral visual field:

Test each eye separately.

- Ask the patient to cover one eye and look directly into your opposite eye. Shut your eye that is opposite the patient's covered eye.
- Test each quadrant separately with a wiggling finger placed midway between yourself and the patient.
- Start peripherally with each quadrant and move the target diagonally towards the center until the patient detects it.

Repeat for the other quadrants. Then do the same for the other eye (8 quadrants in total)
Compare your visual field with that of the pt.

4. Central visual field

Test each eye separately.

It's the same test but using a red hatpin instead, and ask the patient what color they see it as in each quadrant (to check for color saturation).

5. Blind spot:

Test each eye separately.

- Sit in front of the patient and have them cover one eye, and close your opposite eye (if the patient closes their right eye, you should close your left).
 - Have the patient look at your eye, hold a red colored object between yourself and the patient, and have them confirm that they can see it.
 - Slowly move the target laterally and have the patient tell you when they can no longer see it (their vision should always remain fixated on you without moving their eye or head).
 - Continue moving the object until it reappears in the patient's visual field.
- You and the patient should have a similar blind spot.

6. Tubular visual field:

Mention that you would like to repeat everything at 2 meters (only mention).

Mention that you would like to use:

Snellen chart -> visual acuity

Amsler grid -> macular function

Ishihara test -> colour vision

Ophthalmoscopy -> optic disc swelling

3. Cranial Nerve III (Oculomotor), Cranial Nerve IV (Trochlear), and Cranial Nerve VI (Abducens)

- Have the patient sit comfortably at eye level with you.
- **3 nerves; inspect 3 things, elicit 3 responses, examine 3 movements**
- **Inspection:**
 - Pupils: symmetric, central, round, and normal size.
 - Nystagmus: no nystagmus

- Eyelids: eyelids are at the same level, no ptosis
- **Responses:**
 - **Pupillary light reflex:**
Shine a light into each eye separately and observe the direct and consensual (opposite eye) response. Both pupils should constrict briskly and equally.
 - **Pupillary accommodation (accommodation reflex):**
Ask the patient to focus on a distant object, then switch their focus to a near object (your finger or a pen in front of their face). The pupils should constrict when focusing on the near object.
 - **Convergence:**
Ask the patient to follow your finger as you bring it slowly towards their nose. Both eyes should converge (move inward) symmetrically.
- **Eye Movements:**
 - **CN IV Trochlear nerve (superior oblique muscle):**
Ask the patient to follow your finger as you move it downwards and inward towards their nose. (from northwest towards their nose & northeast towards their nose). The eye should move smoothly downward and inward.
 - **CN VI Abducens nerve (lateral rectus muscle):**
Ask the patient to follow your finger as you move it horizontally to the left and right. The eyes should move smoothly to the side without any deviation.
 - **Extraocular movements:**
Ask the patient to follow your finger in the shape of an “H” to assess the movement of the eyes in all directions. You should note smooth, coordinated movement in all directions, without nystagmus, double vision, or pain.

4. Cranial Nerve V (Trigeminal)

- **Sensation**
 - Light touch: bilaterally, on all 3 areas of the face (ophthalmic, maxillary, mandibular).
 - Pain: bilaterally, on all 3 parts of the face.
 - Nasal tickle test: compare both nostrils (mention)
 - Sensation of the anterior two thirds of tongue (mention)
- **Motor (Temporalis, Masseter, Pterygoid)**
 - **Inspection:** no wasting or swelling
 - **Palpation:** tell the patient to clench their teeth, feel the masseter for: wasting, bulk, tenderness
 - Ask the patient to open their jaw against resistance. Observe normal power against resistance and no deviation of the jaw against resistance.

Comment: symmetrical muscle bulk, no wasting no hypertrophy, no jaw deviation.

- **Reflexes**

- Jaw Jerk: ask the patient to slightly open their mouth and place your finger horizontally across their jaw and strike it with a hammer. None or a slight reaction is expected.

Comment: normal reflex, no brisk reflex.

- Corneal reflex: cotton touch on the cornea (mention)

5. Cranial Nerve VII (Facial)

- **Inspection:** asymmetry, differences in blinking between both eyes, abnormal movements, full eye closure of each side.
- **Maneuvers:**
 - Symmetrical wrinkling: ask the patient to raise their eyebrows. **Comment: bilateral symmetrical wrinkling of the forehead.**
 - Smile: ask the patient to smile. **Comment: no asymmetry or deviation while opening the mouth, normal symmetrical nasolabial folds.**
 - Platysma muscle assessment: ask the patient to “pull down the corners of your mouth” (as if they’re trying to show you their bottom teeth). Observe for symmetrical tightening of the neck muscles just below the jawline (normal platysma function).
- **Muscle Power:**
 - Orbicularis oculi: ask the patient to close their eyelids and resist your attempt to open them.
 - Buccinator: ask the patient to blow up their cheeks and resist your attempt to deflate them.
- **Mention:**
 - Corneal reflex
 - Anterior 2/3 of the tongue taste test

6. Cranial Nerve VIII (Vestibulocochlear)

- Hearing Assessment (3)
 - **Whisper test:**
Stand behind the patient, 15 cm away, and shut the contralateral ear. Confirm that the patient can hear your normal voice then whisper a sequence of letters or numbers, asking the patient to repeat them back to you, then stand at arm’s length (60 cm) from the patient and repeat the test. Do this for both sides and compare the hearing ability for both sides.

Comment: normal hearing on both sides, no significant difference in auditory acuity.

- **Weber’s test:**
Place a vibrating tuning fork on the middle of the patient’s forehead or top of their head, and ask where they hear the sound (left, right, or both ears equally). The patient should hear the sound equally in both ears if normal.

Comment: sound heard equally in both ears (normal), no lateralization.

- **Rinne’s test:**
Place a vibrating tuning fork on the mastoid bone behind the ear. Leave it there for a few

seconds then move the fork close to the external auditory meatus. Ask the patient in which position they heard the sound louder; they should hear it better in air than on bone (AC > BC).

Comment: AC > BC bilaterally (normal).

7. Cranial Nerve IX (Glossopharyngeal) and Cranial Nerve X (Vagus)

- **Speech:** Ask the patient to talk and assess their speech for hoarseness, dysarthria, dysphonia, and changes in voice quality.
- **Nasal air escape:** Ask the patient to puff out their cheeks and keep their lips closed, listen for air escaping from the nose.

Comment: no nasal air escape.

- **Cough:** Ask the patient to cough, assessing the strength of the cough (a weak or absent cough indicates a vagus nerve pathology).

Comment: normal cough strength, no bovine cough.

- **Palate and Uvula:** Ask the patient to open their mouth and say "ahh" while observing the palate and uvula. The soft palate should elevate symmetrically, and the uvula should remain in the midline.

Comment: normal symmetrical elevation of the soft palate, no deviation of the uvula.

- **Swallowing:** Ask the patient to swallow (either give them water or swallow saliva). Observe for absent or difficult swallowing, cough, delayed cough, nasal regurgitation, or a change in voice quality after swallowing.
- **Mention:**
 - Gag reflex: use a tongue depressor to gently touch the posterior pharyngeal wall or the back of the tongue on each side, note the presence or absence of the gag reflex bilaterally.
 - Posterior 1/3 of the tongue taste test.

8. Cranial Nerve XI (Accessory)

- Exposure should be to the mid-back
- **Sternocleidomastoid:** from in front of the patient.
 - Inspect both sternocleidomastoid muscles for wasting or hypertrophy and palpate them to assess their bulk.
 - Head rotation: place one hand on the patient's face, at the jawline or cheek, and ask the patient to turn their head to the side, against the resistance from your hand. Do this for both sides.

Comment: normal symmetrical head rotation strength bilaterally.

- Test both sternocleidomastoid muscles simultaneously by asking the patient to flex their neck (nod downwards). Apply your palm to their forehead to apply resistance.

Comment: bilateral symmetrical good power

- **Trapezius:** from behind the patient

- Inspect the trapezius muscle for atrophy, asymmetry, fasciculations, and winging of the scapula.
- **Shoulder shrug:** ask the patient to shrug both shoulders while you apply downward resistance (to assess power). Both shoulders should rise equally against resistance.

Comment: symmetrical shoulder elevation with good strength, no atrophy or tenderness.

9. Cranial Nerve XII (Hypoglossal)

- **Inspection** of the tongue at rest:
No tongue wasting (atrophy), fasciculations, or abnormal movements.
- **Tongue protrusion:** *most important test for the hypoglossal nerve*
Ask the patient to stick their tongue out straight, assess for any tongue deviation or abnormal movements
- **Tongue movements:**
 - Coordination: ask the patient to move their tongue from side to side inside their mouth, note normal tongue movement and coordination
 - Power: ask the patient to push their tongue against the inside of each cheek while you press your finger against it on the outside of the cheek. Note good power bilaterally
- *Not necessary for the hypoglossal nerve but mention/do them just in case:
 - Ask the patient to say 'lalala' for dysarthria
 - Swallow test to assess for swallowing difficulties arising from tongue movements

Test Yourself: OSCE Stations

Upper Motor Exam Checklist

- The **11** general points
- **Inspection: (SWIFTD)**
 - ✓ Scars/Symmetry, Wasting/hypertrophy, Involuntary/abnormal movements/jerks, Fasciculations, Tremors, Deformities.
 - ✓ **Pronator drift**
- **Palpation: (2)**
 - ✓ Tenderness
 - ✓ Bulk: atrophy or hypertrophy (or normal)
- **Tone: (3)**
 - ✓ Wrist elbow shoulder
 - ✓ Normal symmetrical tone, no resistance to passive movements
- **Power: 3 + 3 (3 pairs + 3 fingers)**
 - ✓ Shoulder: adduction and abduction
 - ✓ Elbow: flexion and extension
 - ✓ Wrist: flexion and extension
 - ✓ Fingers: extension
 - ✓ Fingers: abduction *only for the index & pinkie
 - ✓ Thumb: abduction
- **Reflexes: (5)**
 - ✓ Biceps, triceps, supinator, finger jerk, Hoffman's Sign
- **Coordination: (3)**
 - ✓ Finger-to-nose test: dysmetria, dysynergia past pointing or intention tremor
 - ✓ Rapid alternating movement: dysdiadochokinesia
 - ✓ Rebound phenomenon

Lower Motor Exam Checklist

- The **11** general points
- **Inspection: (SWIFTD)**
 - ✓ Scars/Symmetry, Wasting/hypertrophy, Involuntary/abnormal movements/jerks, Fasciculations, Tremors, Deformities.
- **Stance: (3)**
 - ✓ Eyes Open: no cerebellar ataxia
 - ✓ Eyes Closed: Romberg's sign, no sensory ataxia
 - ✓ Proximal muscle weakness
- **Gait: (3)**
 - ✓ Symmetry and balance; ataxia and a wide-based gait.
 - ✓ Good/poor tandem gait
 - ✓ Plantar muscle and dorsiflexion power. No foot drop.
 - ✓ Present arm swinging
- **Palpation: (2)**
 - ✓ Tenderness
 - ✓ Muscle Bulk: atrophy or hypertrophy (or normal)
- **Tone: (3)**
 - ✓ Hips and knees
 - ✓ Leg roll + lift
 - ✓ Normal symmetrical tone, no resistance to passive movements
 - ✓ Ankle clonus
- **Power (6)**
 - ✓ Hip flexion (L1, L2) and extension (L5, S1)
 - ✓ Hip adduction (L2, L3) and abduction (L4, L5)
 - ✓ Knee flexion (S1) and extension (L3, L4)
 - ✓ Ankle dorsiflexion (L4), plantar flexion (S1, S2)
 - ✓ Ankle inversion (L4), eversion (L5, S1)

✓ Big toe extension (L5)

- **Reflexes (3)**

- ✓ Knee jerk (L3, L4)

- ✓ Ankle jerk (L5, S1)

- ✓ Plantar reflex (S1, S2)

- **Coordination**

- ✓ Heel to shin test: **dysmetria, dyssynergia past pointing, or intention tremor.**

- ✓ Mention: Repeat on the other side.

UU SIGN

Cranial Nerves Checklist

Cranial Nerve I (Olfactory)

- ✓ Adequate breathing from each nostril, no obstruction.
- ✓ Mention: scratch-and-sniff cards.

Cranial Nerve II (Optic)

- ✓ Inspection
 - Sclera: white sclera
 - Conjunctiva: no erythema or pallor
 - Eyelids: normal position, normal margins, no swelling or masses, lid lag, ptosis
 - Pupils: normal size, symmetric, central
 - ✓ Pupils:
 - Direct & consensual light reflexes
 - Relative afferent pupillary defect
 - Accommodation reflex
 - ✓ Visual fields
 1. Homonymous defect: 10 o'clock, 2 o'clock, 8 o'clock, 4 o'clock
 2. Sensory inattention: 10 o'clock & 2 o'clock, + 8 o'clock & 4 o'clock
 3. Peripheral visual field: Wiggling finger, all 8 quadrants
 4. Central visual field: Red hatpin, all 8 quadrants
 5. Blind spot: Test each eye separately.
 6. Tubular visual field: Mention that you would like to repeat everything at 2 meters
 - ✓ Mention:
 - Snellen chart for visual acuity
 - Amsler grid for macular function
 - Ishihara test for color vision
 - Ophthalmoscope for optic disc swelling
- Cornea: no ulcers, foreign bodies or clouding
Proptosis (from behind & above the patient)
Periorbital swelling

Cranial Nerve III (Oculomotor), Cranial Nerve IV (Trochlear), and Cranial Nerve VI (Abducens)

- ✓ Three nerves; inspect 3 things, elicit 3 responses, and examine 3 movements
- ✓ Inspection:
 - ✓ Pupils: symmetric, central, round, and normal size.
 - ✓ Nystagmus: no nystagmus
 - ✓ Eyelids: eyelids are at the same level, no ptosis

✓ **Responses:**

- ✓ Pupillary light reflex
- ✓ Pupillary accommodation
- ✓ Convergence

✓ **Eye movements:**

Trochlear nerve (superior oblique muscle): downward and inward

Abducens nerve (lateral rectus muscle): horizontally to the left and right.

Extraocular movements: H-shape

Cranial Nerve V (Trigeminal)

✓ **Sensation:**

- ✓ Light touch
- ✓ Pain
- ✓ Nasal tickle test (mention),
- ✓ Sensation of the anterior 2/3 of tongue (mention)

✓ **Motor:**

- ✓ Inspection: no wasting or swelling
- ✓ Palpation: clench their teeth, feel the masseter for: wasting, bulk, tenderness
- ✓ Open the jaw against resistance

✓ **Reflexes:**

- ✓ Jaw jerk reflex
- ✓ Corneal reflex: cotton touch on the cornea (mention)

Cranial Nerve VII (Facial)

✓ **Inspection:** asymmetry, differences in blinking between both eyes, abnormal movements, full eye closure of each side.

✓ **Maneuvers:**

- ✓ Symmetrical wrinkling (raise their eyebrows)
- ✓ Smile
- ✓ Platysma muscle assessment: (pull down the corners of their mouth as if they're trying to show you their bottom teeth)

✓ **Power: (2)**

- Orbicularis oculi: ask the patient to close their eyelids and resist your attempt to open them
- Buccinator: ask the patient to blow up their cheeks and resist your attempt to deflate them

✓ **Mention:**

Corneal reflex

Anterior 2/3 of the tongue taste test

Cranial Nerve VIII (Vestibulocochlear)

- ✓ Whisper test
- ✓ Weber's test
- ✓ Renne's test

Cranial Nerve IX (Glossopharyngeal) and Cranial Nerve X (Vagus)

- ✓ Speech: hoarseness, dysarthria, dysphonia, and changes in voice quality
- ✓ Nasal air escape
- ✓ Cough strength
- ✓ Symmetrical palate elevation and midline uvula
- ✓ Swallowing: absent or difficult swallowing, cough, delayed cough, nasal regurgitation, or a change in voice quality after swallowing
- ✓ Mention:
 - Gag reflex
 - Posterior 1/3 of the tongue taste test

Cranial Nerve XI (Accessory)

Exposure should be to the mid-back

- ✓ Sternocleidomastoid: (stand in front)
 - Inspect for wasting or hypertrophy and palpate to assess bulk.
 - Head rotation: patient turns their head to the side against your hand
 - Both SCM muscles simultaneously: nod downwards
- ✓ Trapezius: (stand behind)
 - Inspect for atrophy, asymmetry, fasciculations, and winging of the scapula
 - Symmetrical shoulder shrug

Cranial Nerve XII (Hypoglossal)

- ✓ **Inspection:** wasting, fasciculations, or abnormal movements
- ✓ **Movements:**
 - Protrusion: deviation or abnormal movements
 - Coordination: from side to side
- ✓ **Power:** push their tongue out inside each cheek against your finger
- ✓ **Extra:**
 - Say 'lalala' for dysarthria
 - Swallow test for swallowing difficulties from tongue movement

Cerebellar Exam Checklist

- The **11** general points
- **Speech:** dysarthria, staccato speech, and dysphonia.
- ✓ **Stance: (3)**
 - ✓ Eyes Open: no cerebellar ataxia
 - ✓ Eyes Closed: Romberg's sign, no sensory ataxia
 - ✓ Proximal muscle weakness
 - ✓ **Eyes:** rule out horizontal nystagmus
- **Gait: (3)**
 - ✓ Symmetry and balance; ataxia and a wide-based gait.
 - ✓ Good/ poor tandem gait
 - ✓ Plantar muscle and dorsiflexion power
 - ✓ Present arm swinging.
- **Upper limb: (5)**
 - ✓ Hypotonia
 - ✓ Pendular reflexes
 - ✓ Finger-to-nose test: dysmetria, dyssynergia past pointing or intention tremor
 - ✓ Rapid alternating movement: dysdiadochokinesia
 - ✓ Rebound phenomena
- **Lower limb: (3)**
 - ✓ Hypotonia
 - ✓ Pendular reflexes
 - ✓ Heel to shin test: dysmetria, dyssynergia past pointing or intention tremor
 - ✓ **Mention:** Repeat on the other side.
- **Mention testing for apraxia.**

This QR code is to submit any feedback, comments, errata:



We thank you very much for any feedback and hope you benefitted from our work.

Below is our linktree to all things UJ-SIGN:



We wish you the best of luck in all your exams!