

NEUROLOGIC EXAM DETAILS FROM NEURO EXAM VIDEO

WASH HANDS

(Patient is seated.)

Cranial Nerves:

1. Visual fields (*screening test for CN2 & Visual system: peripheral vision*)
 - A. Examiner is positioned:
 - a. in front of patient
 - b. about 2 feet away from patient
 - c. at eye level with the patient
 - B. Examiner instructs patient to stare at examiner's nose ("*Don't move your eyes.*")
 - C. Examiner stares at patient's nose
 - D. Both eyes are examined together (Both eyes are open)
 - a. Examiner holds out his or her index fingers in the periphery of the patient's vision, about 180° apart (e.g., above the patient's right eye and below the patient's left eye), and slightly wiggles **one** index finger at a time.
 - b. The patient is asked to identify or point to the moving finger.
 - c. With the examiner's fingers in the same position as in (a), both fingers are wiggled at the same time, and the patient should identify that **both** are simultaneously moving.
 - d. Examiner then "rotates" his or her extended index fingers about 90° from the initial position (e.g., now above the patient's left eye and below the patient's right eye), and slightly wiggles **one** index finger at a time.
 - e. With the examiner's fingers in the same position as in (c), both fingers are wiggled at the same time, and the patient should identify that **both** are simultaneously moving.
 - f. Examiner holds his or her index fingers about 180° apart in the temporal visual fields (e.g., left of patient's left eye, right of patient's right eye) in a horizontal plane.
 - g. The patient is asked to identify or point to the moving finger.
 - h. With the examiner's fingers in the same position as in (e), both fingers are wiggled at the same time, and the patient should identify that **both** are simultaneously moving.
 - E. Examiner should have his or her finger half way between the patient and his/herself, and gradually move the wiggling finger more towards the center of vision, until it is perceived by the patient.
 - F. Examiner "rotates" his or her index fingers, checking for the visual fields of both eyes superiorly, inferiorly and temporally.

*Any abnormality or problem with this screening test of visual fields, or a complaint of visual loss, prompts retesting of visual fields one eye at a time (see Addendum later). Failure of the patient to recognize **both** simultaneously moving fingers suggests visual extinction from a parietal lobe lesion.*

Note: The examiner should be testing his/herself at the same time and comparing his/her answer to the patients – assuming the examiner has normal visual fields!

2. Student inspected both eyes with the ophthalmoscope. (CN2)
These are not essential; however doing these optimizes conditions to facilitate the exam:
Proper patient **position** is helpful for ophthalmoscopy
- A. If the patient is “slouching” tell them to sit up straight so the examiner doesn’t have to bend over to attempt the exam
 - B. If the patient is sitting too far back on the exam table, the examiner might ask patient to sit forward on the table.
 - C. If patient is already in a good position, nothing may need to be changed
- These are essential (right-right-right, and left-left-left):**
- A. Examiner holds ophthalmoscope with examiner’s **right** hand to look through examiner’s **right** eye when inspecting patient’s **right** eye.
 - B. Examiner holds ophthalmoscope with examiner’s **left** hand to look through examiner’s left eye when inspecting patient’s **left** eye.
 - C. Examiner darkens room (i.e., turn off or down lights, close shades, etc.)
 - a. warn the patient you are going to do this!
 - D. Patient is told to **stare off in the distance** or stare at the wall (*look at the clock on the wall*) and not to look at the light from the ophthalmoscope or not to move their eyes during this exam.
 - E. Examiner should stand right next to the patient’s mid thigh (you need to be next to the patient)
 - a. You may need to tell patient to put their legs together so you can be close to them
 - F. Hold the ophthalmoscope so that:
 - a. the top of the scope is against your eyebrow
 - b. the bottom of the scope is held against your upper cheek
 - c. examiner’s head and the ophthalmoscope should move as “one”
 - d. common error – examiner holds the ophthalmoscope too far from their face
 - G. Examiner should start about 12 to 15 inches from the patient and **slowly** move forward to the patient’s eye. (*Examiner should not “startle” the patient by moving towards the patient too quickly; a brief introductory statement lets the patient know what to expect.*)
 - H. Examiner looks approximately **15 degrees lateral** to patient’s line of vision to see the disc
 - a. common error – examiner is directly in patient’s line of vision and then can’t locate the disc
 - I. Examiner begins about 12-15 inches from patient’s eye with the diopters reading at about +8 to +10 (either green or black numbers on ophthalmoscope) to first see the red reflex.
While slowly changing the diopters towards 0 or a negative 1 or 2 (red numbers), the examiner approaches the patient to see the optic disc and retina.
 - J. Examiner should systematically inspect:
 - a. **Optic disc:** color, shape, margins, and cup-to-disc ratio

- b. **Vessels:** caliber, arterial/venous ratio, obstruction, arterial light reflex, and for presence or absence of arterial/venous nicking.
 - c. **Background:** inspect for pigmentation, hemorrhages, hard or soft exudates
 - d. **Macula:** attempt to identify
3. Examiner shined a light into each eye separately (CN2, 3) to assess pupil response
 - A. Right eye
 - B. Left eye

(The examiner should check for the direct and consensual response to light in each pupil)
4. Examiner checks for all 6 cardinal positions of gaze (CN3, 4, 6)
 - A. Examiner tells patient to not move their head and *“Follow my finger with your eyes open.”*
 - B. Examiner places their finger/penlight/ or other object about 12 inches or more from patient
 - C. Examiner makes a large “H;” while patient moves his/her eyes from the his/her nose, examiner should:
 - a. move about 1 foot horizontally from the midline
 - b. then move vertically about 1 foot up and down at that lateral point
 - c. then repeat in the other direction
 - D. *The 6 cardinal positions of gaze:*
“LR6, SO4, all the rest 3”
 - i. *lateral rectus muscle for lateral gaze = CN6 = abducens nerve*
 - ii. *superior oblique muscle for gaze down and in = CN4 = trochlear nerve*
 - a. *lateral gaze: lateral rectus muscle = CN6 (abducens)*
 - b. *medial gaze: medial rectus muscle = CN3(oculomotor)*
 - c. *gaze up and out: superior rectus muscle = CN3*
 - d. *gaze down and in: superior oblique muscle = CN4 (trochlear)*
 - e. *gaze up and in: inferior oblique muscle = CN3*
 - f. *gaze down and out: inferior rectus muscle = CN3*
5. Examiner assessed light touch on patient’s face (3 sensory divisions of CN5)
 - A. *Examiner explains step to patient first*
 - B. Examiner tells patient to close their eyes
 - C. Examiner uses a fine wisp of cotton and asking patient to respond each time they feel the touch
 - D. **SIX AREAS MUST BE ASSESSED**
 - a. both sides of the forehead (ophthalmic division of CN5)
 - b. both sides superficial to maxillary sinuses = cheeks (maxillary division of CN5)
 - c. both sides superficial to the mandibles = jaw (mandibular division of CN5)
6. Examiner asked patient to raise both eyebrows or to frown or wrinkle my forehead. (CN7)
Examiner may demonstrate the desired result to the patient first
7. Examiner asked patient to “show my teeth” or “smile and show your teeth” (CN7)
Examiner may demonstrate the desired result

8. Examiner asked patient to close his/her eyes and identify the examiner's gentle rubbing of his/her fingers (or ticking watch or whispered word) –about 3 inches from right and left ear. (Auditory division, CN8)
9. Examiner asks patient to “say ah.” Both sides of the palatal arch and the uvula should elevate symmetrically. (CN10, questionably CN9)
The gag elicited by the palatal reflex is annoying to some patients, so this reflex should be checked only if palatal elevation upon saying “ah” appears abnormal, or the patient has complained of a problem with swallowing or speech. The peritonsillar area on each side is gently touched with a cotton swab (afferent is CN9) and symmetrical elevation of the palate and uvula occurs (efferent is CN10). It is doubtful that CN9 has any motor function regarding the palate, but it does supply sensory input for the gag (palatal) reflex.
10. Examiner asks patient to cough. (CN10, Vagus nerve, innervates the vocal cords)
Examiner may ask patient to turn their head so the patient does not cough on the examiner.
11. Examiner assesses trapezius muscles (CN11, Spinal Accessory Nerve).
Examiner places his/her hands on patient's trapezii muscles and then asks patient to shrug both shoulders upward against his/her hands. Examiner notes strength and symmetry of contraction.
12. Examiner assesses sternocleidomastoid muscles (CN11, Spinal Accessory Nerve).
Examiner asks patient to turn the head to each side against resistance from the examiner's hand.
As the patient attempts to turn the head to each side, examiner observes the strength of the contraction of the OPPOSITE sternocleidomastoid muscle. (*The patient's right SCM contracts and turns patient's head to patient's left*)
13. Examiner asked patient to protrude their tongue, and then to move it from side to side. (CN12)
Normally, the tongue protrudes in the midline

Motor System:

Examiner should inspect muscles for asymmetry, atrophy and fasciculations while testing muscle tone and strength.

14. The examiner determined limb tone (resistance to passive stretch) in the upper limbs
_____ RUE
_____ LUE

The patient is asked to relax. The examiner supports the patient's elbow, and grasping the patient's hand passively flexes and extends the wrist, elbow and shoulder through a moderate range of motion. With practice, this can be combined into a single, smooth movement.

Normal resistance is felt as mild resistance to passive stretching, which is felt evenly throughout the entire ROM at each joint in each extremity. Abnormal tone is either

decreased or increased (which is divided into “clasp-knife” spasticity or “lead pipe” rigidity)

Muscle strength is graded 0-5:

- 0 = no contraction
- 1 = barely detectable flicker or trace of contraction
- 2 = active movement with gravity eliminated (*horizontal motion is seen*)
- 3 = active movement against gravity
- 4 = active movement against gravity and some resistance
- 5 = active movement against full resistance – this is normal.

Examiner always compares patient's right side to left side and should detect symmetry; patient's dominant side may be slightly stronger.

15. Examiner tested the muscle strength of the upper extremities (arm, forearm and hand). Examiner determined muscle power by gently trying to overpower contraction of each group of muscles bilaterally:

A. **upper extremities (ask examiner to grade each with 0-5 scale):**

___ shoulder-abduction (*start with hands at patient's side, then ask patient to abduct arms to 90 degrees*)

To test elbow, have patient hold their elbows at about 90 degrees and then examiner asks patient to push or pull against examiner's resistance

___ elbow flexion (biceps muscle - C5, C6 - musculocutaneous nerve)

___ elbow extension (triceps muscle - C7, C8 - radial nerve)

___ wrist flexion (C6, C7, C8 - median and ulnar nerves)

___ wrist extension (C7, C8 – radial nerve)

___ hand grip (finger flexion – C7, C8, T1 – median and ulnar nerves)

Patient is asked to squeeze the extended index and middle fingers of examiner.

Examiner normally has difficulty removing his/her fingers from patient's grip.

(Patient may be supine or seated from here on.)

16. The examiner determined limb tone (resistance to passive stretch) in the lower limbs

___ RLE

___ LLE

*The patient is asked to relax. The examiner supports the patient's thigh behind the knee, and grasps the patient's foot with the other hand, passively flexing and extending the knee and ankle in a single, smooth movement. As the foot is dorsiflexed, if a sustained, rhythmical plantar flexion of the foot occurs, this represents **clonus**, corresponding to an abnormal, grade 4 ankle reflex.*

17. Examiner tested the muscle strength of the lower extremities (thigh, leg, foot). Student determined muscle power by gently trying to overpower contraction of each group of muscles *one side at a time*:

lower extremities (ask examiner to grade each with 0-5 scale):

- _____ hip flexion (elevate one knee at a time off the examination table)
(iliopsoas muscle - L2, L3, L4 –femoral nerve)
- _____ knee flexion (hamstrings - L5, S1, S2 –sciatic nerve)
- _____ knee extension (quadriceps - L2, L3, L4 – femoral nerve)
- _____ ankle dorsiflexion (L4, L5 – peroneal nerve)
- _____ ankle plantar flexion (S1, S2 – tibial nerve) (“*step on the gas*”)

Reflexes:

Examiner elicited the following deep tendon reflexes **bilaterally and graded with 0-4 scale**:

0=absent reflex, no response

1=diminished, low normal (brought out with reinforcement = Jendrassik maneuver)

2=normal, average

3=brisker than average, possibly but not necessarily indicative of disease

4=hyperactive with clonus

Patient is sitting, relaxed, limbs are symmetrically positioned

Examiner holds reflex hammer between their thumb and index finger

Examiner swings the reflex hammer briskly (quick and direct) using a rapid wrist movement

If the reflexes appear asymmetrical, this may be due to the patient’s poor posture or tenseness. Retest the reflexes in the supine position on the examination table.

Examiner bilaterally tested the following reflexes:

18. Biceps Reflex (C5, C6)

- A. Patient’s arms are partially flexed at the elbow
- B. Examiner places his or her thumb or index finger over biceps tendon
- C. Examiner then strikes his or her thumb/index finger

19. Triceps Reflex (C7, C8)

- A. Flex the patient’s arm 90 degrees at the elbow, palm towards their body, pulled slightly across the chest
- B. Examiner directly strikes triceps tendon, just proximal to the olecranon
OR
- C. Examiner positions and supports the patient’s arm so that it is horizontal and elbow is flexed to 90 degrees, with the forearm hanging limp
- D. Examiner directly strikes triceps tendon, just proximal to the olecranon

20. Brachioradialis Reflex (C5, C6)
- A. Patient's hand rests on his/her lap, with forearm halfway between supination and pronation
 - B. Examiner strikes radius about 1 to 2 inches proximal to the wrist to see forearm flexion and supination.
21. Knee Reflex (L2, L3, L4)
- A. Patient is sitting so that the legs are freely dangling (Patient's feet should not be resting on the stoop)
 - B. Patient's legs should not be flush against the end of the exam table.
 - C. Examiner should stand to patient's side so as not to be hit by a brisk reflex!
 - D. Examiner strikes patellar tendon just distal to patella. (Examiner may place his/her other hand on patient's distal quadriceps muscle to feel for a contraction as they strike the tendon with the reflex hammer in the other hand.)
(If done supine, see addendum later.)
22. Ankle Reflex (S1)
- A. With the patient's leg still dangling, examiner grasps patient's foot and slightly dorsiflexes patient's foot (foot should about be parallel to the floor)
 - B. Examiner strikes Achilles' tendon and watches and feels for plantar flexion. *(If done supine, see addendum later.)*
23. Examiner tested for the plantar response (Babinski sign) on each foot.
- A. Examiner holds the patients heel and strokes the lateral side of the sole, beginning at the heel and moving to the ball of the foot, curving medially across the ball.
 - B. Examiner begins with the lightest stimulation that provokes a response
 - C. Patient's toes normally flex
 - D. A Babinski response = dorsiflexion of big toe, often accompanied by fanning of the other toes.

Sensory System:

24. Examiner tested in all four extremities:
- A. Examiner first explained the step
 - B. Examiner asked patient to close his/her eyes and report each time the soft touch or pain stimulus is detected equally (to the same degree) over all four limbs
 - C. Light touch (both posterior column and spinothalamic tracts) with a wisp of cotton
 - D. Pain (spinothalamic tract) sense with a splintered cotton tip applicator or broken tongue blade
 - E. Begin testing over the feet, and alternating from side to side, quickly ascend up the legs and thighs. Repeat in the upper extremities, beginning at the hand and ascending up the forearm and arm, alternating side to side.
(In a patient with peripheral neuropathy and distal sensory impairment, stimuli at the feet may be absent or reduced, becoming detectable or "sharper" more proximally. Also, a patient with a spinal cord lesion may not detect any sensation up to the dermatomal level involved.)

- F. Examiner should vary the pace of stimuli so patient doesn't merely respond to rhythm
 - G. Check 3 or more areas in each extremity, beginning distally and moving proximally.
25. Examiner tested position sense (posterior columns) in all four extremities.
- A. Examiner first explains/demonstrates the step
 - B. Examiner tested all four extremities and asked patient to close his/her eyes during the tests
 - C. (Using the index finger and thumb to hold the patient's big toe or a finger at its sides, the big toe or finger is moved up or down (avoid contact with patient's other toes/fingers) and the patient is asked to report the position – did it move up or down?)
 - D. Examiner should repeat several times on each side
 - E. A patient should be able to detect a movement as small as 1-2 mm!
26. Examiner tested vibration sense (posterior columns) in all four extremities.
- A. Examiner first explains the step
 - B. Examiner checks each ankle, then a knuckle on the left and right sides
 - C. Examiner places a vibrating tuning fork over the ankle or knuckle and then instructs patient to report when the vibration sense is lost. (Tuning fork must be placed on a bony prominence.) Compare your response to the patient's response.
- (Vibration sense is often the first sense lost in peripheral neuropathy, but may be normally reduced in healthy, elderly patients)

Coordination (this requires 4 components of the nervous system to work together:

Motor system – cerebellar system – vestibular system – sensory system

(A and B can be tested with the **patient seated or supine**; C is best tested **supine**. Patients keep their eyes open. Elicited movements should be smooth and “on target” without tremor.)

27. Examiner tested three different components:
- A. finger-to-nose-to-finger
 - a. Examiner explains or demonstrates the test
 - b. Examiner holds his or her index finger in front of the patient
 - c. Patient touches examiner's finger, then touches patient's own nose
 - d. Examiner moves his or her finger and patient repeats the step 2-3 times for each hand
 - B. fine finger movements
 - a. Examiner explains or demonstrates the test
 - b. Patient rapidly taps the tips of the thumb and index finger together, multiple times
 - c. (Note – a patient's non-dominant side always performs less well)
 - d. This can be tested simultaneously with both hands, or each hand separately
 - C. heel-to-knee-to-shin
 - a. Examiner explains or demonstrates the test
 - b. Patient places the heel on the opposite knee, then runs that heel down the shin to the foot
 - c. The test is repeated with the other heel and leg

Gait/Station (Patient is standing)

28. **Romberg test** (for position sense)
- A. Examiner instructed patient to stand (eyes open), feet together with arms at their side. Examiner then instructed patient to close his/her eyes for **20-30** seconds and stand still.
(Examiner should be close enough to patient to catch patient if patient loses their balance)
 - B. Normally, only minimal swaying occurs and patient can maintain an upright posture (**+ Romberg** = patient can stand still with eyes open, but loses balance with eyes closed)
(With **cerebellar ataxia** = patient cannot stand still with eyes **either open or closed**.)
(Note: elderly, frail patients may be anxious and fearful of falling, or are often dizzy. They may sway during the Romberg test for these reasons. Position sense can be tested during the sensory examination described above.)
29. **Gait Testing**
- A. Examiner instructed patient to walk barefoot back and forth across the exam room (Examiner observes for posture, balance, and arm swing.)
 - B. Examiner instructed patient to walk heel-to-toe (tandem) in a straight line.
(Examiner should be near enough to catch patient if necessary)
Tip – examiner may ask patient to walk on a line in the tile floor if available.
(If the gait here appears abnormal, or the patient has complained of gait difficulty, test gait in more detail:
Examiner instructed patient to walk on his/her heels across room
Examiner instructed patient to walk on his/her tiptoes across room)

Addendum

The above is a screening Neurological Examination. Additional testing is indicated if certain abnormalities are detected on the screening examination, or if the patient has specific complaints in certain areas:

Cranial Nerves

- ❖ **CN1 and CN7:** Olfaction or smell and taste should be tested if the patient complains of abnormalities with either. With the eyes closed, the patient should identify “coffee” or “soap” when these are held under each nostril. With the eyes closed, the patient should identify “sweet” or “salty” when these solutions are swabbed onto either side of the tongue.
- ❖ **CN2:** Visual acuity should be measured if the patient complains of visual impairment, or abnormalities are noted on the visual field or ophthalmoscopic examination. Distant visual acuity is ideally tested several feet away on a Snellen wall chart. If unavailable, a pocket screener is used as described below, although near visual acuity is often decreased due to presbyopia:
Examiner tested visual acuity in **each eye separately** (CN2)
 - a pocket screener is used
 - it is held at a distance of 12-14 inches from patient’s face
 - **checked** in each eye separately (cover one eye)
 - ask patient to cover their eye with the **palm** of their hand and not with their closed fingers (patients can open up their fingers and peek!)

- record the acuity as the line at which the patient can read \geq half the letters correctly
 - 20/200 means the patient can read at 20 feet what a normal patient can read at 200 ft.
- if a patient has contacts in or wears glasses, they should stay on during the test
- ❖ **CN2:** Visual fields should be more accurately examined **one** eye at a time if the patient complains of visual impairment, or there are abnormal signs from the visual examination, including visual field screening with **both** eyes at the same time:
 - The examiner and patient face one another (as for the visual field screening, described earlier), but **one eye is covered** (e.g., examiner's left eye, patient's right eye).
 - The examiner wiggles his/her index finger in the periphery of the visual field of the patient's open eye, asking the patient to "say 'yes' when you see the wiggling finger." (superior, inferior, nasal and temporal quadrants should be tested, always compared to those of the examiner). The finger is initially placed peripherally, and gradually moved closer to the center of vision.
 - The test is similarly repeated for the visual field of the other eye.
- ❖ **CN2 and 3:** Accommodation and convergence should be tested if the patient complains of blurry or double vision, or there are abnormalities involving the pupillary light reflex or eye movements (gaze):
 - Examiner checked for accommodation and convergence (CN2 and 3)
 - This is usually done during the test for the cardinal positions of gaze
 - Both eyes are open
 - Examiner asks patient to follow their finger or other object (pencil/penlight) as examiner moves from about 12 inches away to about 2- 3 inches away in the patients midline (toward the patient's nose)
 - The patient's pupils should constrict as the eyes converge
- ❖ **CN5 and 7:** Corneal reflex should be tested if the patient complains of facial numbness. Explain the test to the patient, and have the patient look laterally toward the left, with their eyelids wide open (or lightly held open by the examiner). Using a wisp of cotton, approach the patient's right eye from the right side, and lightly touch the cornea, observing a bilateral eye blink. (Contact lenses must be removed for this test.) Repeat again, with patient looking to the right, and lightly touching the left cornea.
- ❖ **CN5:** Motor division (Masseter and temporalis muscles) should be checked if the patient complains of trouble speaking, chewing or swallowing:
 - Examiner assessed motor division of CN5 (Trigeminal nerve)
 - Examiner places their right and left finger pads at **two** places on the patient:
 - Masseter muscles at the bite line and asks patient to "clench their teeth" or "bite down"
 - ◆ Examiner should note symmetric contraction
 - Temporal muscles (in the right and left temporal fossas)
 - ◆ Examiner again asks patient to "clench their teeth" or "bite down"
 - ◆ Examiner should note slight and symmetric bulging as they contract
- ❖ **CN8:** Rinne and Weber tests for should be performed, and the ear canals examined when there are findings or complaints of hearing loss
 - Weber test: Examiner places the base of a lightly vibrating tuning fork in the middle of the patient's forehead. The patient is asked where the sound or vibration is heard (normally in the midline, or equally in both ears).

- Rinne test: Examiner places the base of a lightly vibrating tuning fork on the patient's mastoid bone, until the sound or vibration is no longer heard. The tuning fork is then quickly brought close to the ear canal, and the patient asked if its sound is heard. (Normally, it is still heard, as air conduction is more effective than bone conduction.)

Reflexes

- ❖ Reinforcement to bring out reflexes (graded as 1): the Jendrassik maneuver consists of the patient gently pulling against their flexed fingers. Another reinforcement maneuver is to have the patient bite down on their teeth, or squeeze their fists.
- ❖ Techniques to elicit reflexes supine are done whenever asymmetrical responses are noted.
 - The knee jerk: the examiner slightly flexes patient's knee with his or her hand beneath the knee, and strikes the patellar ligament with the hammer in the other hand.
 - The ankle jerk: the examiner grabs the patient's foot, gently flexing and abducting the hip, flexing the knee and dorsiflexing the foot; the Achilles tendon is struck with the hammer in the other hand.

Motor

- ❖ Pronator drift: the patient holds both extended arms in front with palms upward; subtle downward drifting and pronation of one arm suggests mild weakness there.

Sensory

Cortical sensations should be tested whenever a parietal lesion is suspected from the screening examination or patient history. These additional tests include:

- ❖ **number identification (graphesthesia).** Examiner traces a number in patient's palm with patient's eye closed and asks the patient to identify the number. Repeat in the other palm.
- ❖ **double simultaneous stimulation.** Examiner touches the patient in LUE, then RUE, then both UE simultaneously while the patient's eyes are closed. Ask the patient. where they feel the touch.
- ❖ **two point discrimination.** Examiner can use special calipers or open up a paper clip for this maneuver.
- ❖ **stereognosis.** This tests object recognition without the use of vision. Ask the patient to close their eyes, then examiner places a familiar object in the patients palm (i.e., – a coin, key, paper clip) and asks them to identify the object by touch.

Whenever a spinal cord lesion is suspected, testing for light touch and pain sensation (perhaps even temperature sense) should be thoroughly done over the trunk and sacral areas as well as the limbs. A replicable level of sensory loss at a dermatomal level is a significant finding. Rectal tone should also be checked here.

Cerebellar

- ❖ **Rapid alternating hand movements:** the patient is asked to alternately tap their knee with the palm, and then the back of the hand, repeating this at a gradually faster pace. Note is made of any clumsiness on one side.

This should be checked if cerebellar tests on the screening examination appear abnormal, or cerebellar dysfunction is suspected based on the patient history.

WASH HANDS