

Weeks 7 & 8: Nervous System

Divide yourselves into small groups (preferably groups of 3, but you can also work in groups of 2) and work through the following exercises. These should be approached as role-play exercises with one group member acting as the examiner, one group member acting as the subject and the third group member acting as the reporter. These roles should be swapped round for each exercise.

Exercise 1. Cranial Nerves

Perform this exercise in threes as a role-play. One of you acts as the patient, one is the investigating physician, and the third is the reporter who should record the results. The following list of tests are those used clinically to assess cranial nerve function. Most of these tests can be performed directly on the subject but ignore those that require equipment. Work through the tests and tabulate the results. In the discussion period afterwards annotate the results to indicate exactly what aspect of cranial nerve function is being tested.

Cranial nerves

Sit facing patient

- I Smell. Test each nostril separately with, eg clove oil.
- II Visual fields, acuity, pupil reaction, fundoscopy.
- III, IV, VI External ocular movements, pupil reaction.
- III Palsy: ptosis, dilated pupils, eye can only abduct.
- IV Palsy: diplopia on looking down or inwards.
- VI Palsy: abduction paralysed. Diplopia on looking outwards. Examine for nystagmus avoiding extreme lateral gaze.
- V Motor: 'clench jaw' jaw deviates to side of lesion.
- V Sensory: face and cornea (touch with wisp of wool).
- VII 'Close eyes tightly, purse lips.' Taste-use eg torch battery. Chorda tympani (V) travels with VII.
- VIII Whisper a number, while blocking contralateral external auditory meatus.
- IX, X Gag reflex. Palate pulled to normal side on saying 'Ah'.
- XI Shrug shoulders against opposition.
- XII Stick out tongue. Deviation to side of lesion.

Exercise 2. Motor system

Perform this exercise in threes as a role-play. One of you acts as the patient, one is the investigating physician, and the third is the reporter who should record the results. The following list of tests are those used clinically to assess motor system function. These tests can all be performed directly on the subject. Work through the tests and tabulate the results. In the discussion period afterwards annotate the results to indicate exactly what aspect of motor system function is being tested.

Motor system

Tone: Flex and extend limbs. Rapidly pronate and supinate forearms. Look for spasticity ('clasp-knife'), rigidity ('lead-pipe'), and clonus.

Power: oppose active flexion and extension at each major joint: biceps (C5,6); triceps (C6-8); grip (C8); psoas (L2,3); quadriceps (L2-4); glutei (L5;S1); hamstrings (L5;S1); tibialis anterior (L4); extensor hallucis longus (L5).

Reflexes: biceps (C5,6); patellar (L3,4); wooden spatula along outer sole, note first movement of big toe. Flexor (downgoing) is normal. Extensor response indicates upper motor neurone lesion.

Stance and gait: observe and record.

Exercise 3. Sensory system

Perform this exercise in threes as a role-play. One of you acts as the patient, one is the investigating physician, and the third is the reporter who should record the results. The following list of tests are those used clinically to assess sensory system function. These tests can all be performed directly on the subject. Work through the tests and tabulate the results. In the discussion period afterwards annotate the results to indicate exactly what aspect of sensory system function is being tested.

Note, for all these tests the subject should have their eyes shut!

Sensory system

For each dermatome listed in the diagram test basic sensation: light touch – use a small piece of tissue paper; pin-prick – use an unfolded paper clip.

Joint position sense. Passively move fingers, toes, elbow joint, knee joint (hold toe or finger by the sides to minimize pressure clues to the direction of movement).

Also record the distance apart that two simultaneous pin-pricks can be felt as two distinct stimuli on the fingertips, the palm of the hand, the back of the hand, the shoulder.

Exercise 4. Cognitive Function

Perform this exercise in threes as a role-play. One of you acts as the patient presenting with a psychiatric problem, one is the investigating physician, and the third is the reporter who should take notes of all that is said. The format for a psychiatric history and examination is as follows and all three of you should be familiar with this before you start, and it should be referred to throughout the exercise. The subject will need to think about their answers to these questions before the start of the exercise and the everyone should try and make the interview as realistic as possible. Spend about 5 minutes preparing for the exercise (the subject and investigator should think about how the conversations might go, and the reporter should produce a set of headings that they can use to make out the report) and 10 minutes performing the role-play. You should spend 5 minutes afterwards discussing the report and how well you think you all performed.

Psychiatric history and examination

After introducing yourself, ask: *How are you?* or *Are there any problems?* or *What has been happening to you?* or *What are the most important things?* Sit back and listen. Write down exact examples of what he says. A great deal of the 'mental state' can be assessed and you will get hints of your patient's worries which may be missed by too inquisitional an approach. After about 3 min take more control and aim to cover following:

Presenting symptoms: Onset, duration, effects on life, events coinciding with onset, treatment.

Present circumstances: Housing, finance, work, marriage.

Family history: The health, occupation, and personality of parents and siblings. Home atmosphere and relationships. Family history of mental and major physical disease Biography (including past medical and psychiatric history). Ask about home, family, school, friends, sex, marriage, and children.

Premorbid personality: 'How would you describe yourself.' Ways patient has coped with past stresses.

The last few weeks: Check to see if you know about: mood (ask about diurnal variation), thoughts, sleep, appetite, health, major events.

The mental state examination: Assesses state at interview. Give examples of abnormal speech. Record information under the following headings: *Appearance*, *Behaviour*, *Speech* (Both *form*, eg pressure of speech, and *content*, eg morbid), *Mood* (include beliefs about self, future, and ask about thoughts of self-harm). *Abnormal beliefs* about *thoughts* (eg are broadcast), *himself* (eg grandiose or persecutory) about *body*

Abnormal experiences: Eg illusions and hallucinations.

Cognition orientation in time, place, person. *Short-term memory* (give name and address and test 5 mm later), *longer-term memory* (current political events, 'the War'), *concentration* (months of year backwards, digit span).

Patient's insight and your rapport.

Vital questions: *Have you thought of harming yourself or others? Have you ever done so?* If hallucinating: *What are the voices saying?* eg 'Kill your wife'; *Are you always able to control the voices, or are they beginning to control you?*