

CLINICAL SKILLS: PARKINSON'S DISEASE AND EXTRAPYRAMIDAL DISORDERS -

There are certain neurological conditions that commonly present in Finals OSCE examinations. These are patients with chronic neurological conditions that have consistent signs. Although you could approach your examination as a standard upper limb/lower limb examination, it is usually worth considering how best to demonstrate to tailor your examination to best demonstrate the specific signs manifested by the condition. Patients with Parkinson's Disease should be approached with an emphasis on eliciting the tremour, the hypokinesia, and the rigidity.

- **Wash your hands**
- **Introduce yourself**
- **Ask permission to examine them**
- **Expose the patient - depending on the station instructions, expose their arms, legs, or both**
- **Reposition - sitting first**

Inspect:

- Look around the patient
 - Walking stick
 - Parkinson's Disease medication
- Look at patient as a whole for:
 - Resting tremor (4-8 Hz frequency)
 - Posture (hunched over, suggestive of poor motor effort?)

Assess speech:

- Engage the patient with general questions and listen for signs in keeping with Parkinson's Disease:
 - Slow speech
 - Monotonal
 - Soft and quiet

Examine face:

- Inspect for:
 - Expressionless facial expression - 'hypomimia'
 - Sialorrhoea (i.e.: drooling) - due to bradykinesia of swallowing
 - Fine eyelid tremor - when closing eyes
 - Symptoms of dyskinesia from over-treatment/side effect of Parkinson's Disease medication: commonly causing 'chewing', teeth-grinding, jaw tremor
- You can offer to perform the 'Glabellar Tap Test', although this is usually considered inappropriate in modern medicine and is mostly of academic interest. The test required repeated gentle tapping of the centre of the forehead. This initially causes the patient to blink each time. In patients with a normal neurological system, they become accustomed to this and stop blinking after a number of repeats. In Parkinson's Disease patients, they may not desensitise to the tapping and will continue to blink (known as Myerson's sign)

Examine limbs:

- Inspect for a resting tremor (4-8 Hz frequency): to best demonstrate this, ask patient to close eyes and count backwards from 10 to 1, as this may exacerbate their 'pill rolling' tremor
- Assess tone:
 - 'Lead pipe rigidity' is best felt when grossly moving the limbs across all joints - there is a general increase in tone of joint movement which is *not* exacerbated by increasing the velocity of movement (whereas a 'clasp-knife' rigidity is exacerbated by moving the joint more quickly)
 - 'Cogwheeling' rigidity represents lead pipe rigidity with a super-imposed resting tremor. Best felt by asking the patient to form a fist, then cup the fist with your hand, ask the patient to relax their arm and then slowly roll their wrist whilst keeping their hand in a fist shape. You will feel increased tone and a jerkiness to the movement
- Assess power: although the patient is hypokinetic, their actual power is usually relatively retained
- Assess for hypokinesia - ask a patient to repeatedly tap their index finger and thumb together repeatedly as fast as possible - this may be slow and will usually diminish in amplitude on repetition
- Assess co-ordination:
 - Ask them to point to your finger and to nose and back - *no* intention tremor should be found
- Assess for dysidokinesia: there should not be any coordination difficulties, but they may be slow to carry out the movements
- Assess their reflexes: these should be unremarkable
- Assess motor function: ask the patient to write a sentence - patients with Parkinson's Disease may demonstrate 'Micrographia' (small handwriting)

Assess gait - ask the patient to walk:

- Difficulty initiating and stopping movements
- 'Shuffling gait' with small steps
- Leaning forwards to initiate movement (this is a common tactic used by patients to prompt their motor pathways to initiate walking)
- Hunched back
- Reduced arm swing
- Slow, stiff turn
- Festinant - starting slow and speeding up as they continue to walk
- Whilst standing, you can offer to assess their balance, though this test may risk causing the patient to fall and is usually not performed in an examination situation. Stand behind patient and warn warn them that you are going to move them. Pull their shoulders gently back by 10cm and observe for any difficulty they experience in trying to maintain their balance and stability. Problems could indicate poor motor stability (though could equally indicate cerebellar or proprioceptive difficulties - interpret with care)

To end the examination:

- Thank the patient and offer to assist them to get dressed again
- Offer to take lying and standing blood pressure (autonomic function may be affected in 'Multi-System Atrophy' - MSA)

- Offer to assess the cerebellar system (this can also be impaired in MSA)
- Offer to examine the drugs chart (metoclopramide and neuroleptics can cause Parkinsonian symptoms)
- Offer to examine their visual tracking for signs of Progressive Supranuclear Palsy (PSP). Ask the patient to hold their head still and follow your finger with their eyes whilst you move it up in a vertical plane in front of their face. Then, test for the 'vestibulo-ocular reflex' by asking the patient to fix their eyes on a point on the far wall, and then move their head up and down by flexing their neck. If a patient is **unable** to track your finger movements in a vertical plane, but has a retained vestibulo-ocular reflex, then this suggests that there is a supranuclear lesion - in keeping with PSP when it exists with other Parkinsonism signs.