Higher Centres Examination

It is important to reassure the patient that although some parts of the test may be difficult or feel humiliating, they are necessary for us to work out what is happening.

Initial Assessment

- General Appearance
  - Patient looks well or unwell?
  - Unkempt, dishevelled etc. is likely to have frontal lobe problems as they have difficulty with planning and executing
- Handedness
  - If left handed, dominant parietal lobe could be right
- Orientation to PPT

Speech

- **Dysphagia:** Try one stage, two stage and three stage commands (if possible ≠ Receptive)
  - Receptive: Cannot understand spoken/written commands (Wernicke's -> Temporal Lobe)
  - Expressive: Non fluent speech (Broca's -> Frontal Lobe)
  - Nominal Dysphagia: Can't name things easily. Ask patient to name objects
  - Conductive Dysphagia: Can't repeat things easily, and poor object naming. Ask patient to repeat phrase 'no ifs, ands, or buts'
- **Dysarthria**
  - Difficulty with articulation
  - Ask patient to say: British constitution, baby hippopotamus
  - Also: mememe (mouth and lips) lalala (isolated tongue), kakaka (isolates soft palate)
  - Causes: drunkenness, Cerebellar dysfunction, Bulbar palsy, tongue problems, CN IX, XII
- **Dysphonia**
  - Issues with voice box (CN X)
  - Husky voice, but content and articulation normal

Parietal Lobe Function

- **Both**
  - Sensory Inattention: test same sensory modality on both sides simultaneously
  - Visual Inattention: As with cranial nerve examination
  - Astereognosis: Recognition of an object placed in the hand with eyes closed
  - Agraphesthesia: Recognition of a number drawn on the hand
  - Spatial Neglect: Draw clock face
  - Constructional apraxia: Intersecting Pentagons
- **Dominant**: Gerstmann's Syndrome (ALFA)
  - Acalculia: Ask patient to perform basic arithmetic
  - Left/right disorientation: Ask patient to show their left or right hand
  - Finger agnosia: ask patient to name their fingers
  - Agraphia: Ask patient to write a sentence
- **Non Dominant**
  - Dressing apraxia: Turn a piece of clothing inside out, and ask the patient to dress.

Temporal Lobe Function

- Immediate recall
  - Ask patient to remember 3 objects/words
  - Ask the patient to repeat those 3 objects/words
- Short term memory
  - Ask the patient about those same 3 objects/words a few minutes later
- Long term memory
  - Ask patient something from the past (eg "when was WWII, when did you get married?")

Frontal Lobe Function

- Behaviour may be labile, irritable, disinhibited
- Carelessness about personal habits
- Test primitive reflexes:
  - Grasp
  - Pout
  - Palmomental
- Gait apraxia
- Interpretation of common proverbs will result in them giving concrete answers

Occipital Lobe

NOTE: Occipital lobe is not part of the higher centres examination, and is only included for reference and anatomical correlation of lesions of the visual tracts.

- Cortical blindness: light reflexes should be normal
- Macular sparing in homonymous hemianopia suggests the defect is in the occipital lobe rather than earlier in the visual pathway
- Inferior quadrantopia: contralateral parietal lobe damage
- Superior quadrantopia: contralateral temporal lobe damage

Examination can be completed with the mini mental state examination. Other standardised tests of frontal lobe function such as the FAB may also be used to make a more complete assessment of the higher centres.