Clinical Testing for Brain Death
Summarized from the ANZIC statement on Brain Death and Organ Donation, Version 3

- The clinical testing takes place AT LEAST 24 hrs after a cardiac arrest
- Prior to 24 hrs, an arrested patient’s brain death can be determined by demonstration of absent cerebral blood flow

First, you watch them for 4 hours.
- A brain-dead patient will have
  - GCS of 3
  - Unresponsive pupils
  - Absent cough reflex
  - No spontaneous breathing efforts

Then, two qualified doctors test the patient.
- These doctors must establish
  - Unresponsive Coma
  - Absent brain stem reflexes
  - Apnoea

Testing for Comatose Unresponsiveness
- Painful stimulus in cranial nerve distribution, eg. supraorbital nerve pressure
- Painful stimulus in all 4 limbs, eg. nailbed pressure
- There should be no response
  - There may be spinal reflexes; these will only be triggered by painful stimulus in the 4 limbs.
  - The spinal reflexes will NOT be triggered by painful stimulus in the cranial nerve distribution

Brain Stem Reflex Testing: these are tested in sequence. All reflexes must be absent.
- Pupil Light Reflex:
  - Pupil constricts in response to light. Cataract surgery is no contraindication
- Corneal Reflex:
  - Eye blinks in response to the cornea being touched. The cornea, not the sclera.
- Trigeminal Pain
  - Painful stimulus over the supraorbital nerve. There shouldn’t be any grimacing.
- Vestibulo-ocular reflex
  - Examine the ear: auditory canal must not be blocked.
  - Put the head at 30 degrees.
  - Put ice-cold water into the ear
  - Watch the eyes for 60 seconds: in brain death, they will remain midline.
    - The “dolls eye test” is a sub-maximal stimulus of the same reflex
- Gag reflex
  - Poke the posterior pharynx, both sides.
- Cough reflex
  - Stimulate the trachea with a soft suction catheter...this wont work in people with a high spinal cord injury, as the efferent limb is severed

Testing for Apnoea – ONLY if there are no brainstem reflexes
- Preoxygenate with 100% FiO2 for 5 minutes, and then turn off the ventilator.
- Continue supplying oxygen via T-piece or something similar. Watch for absent breaths.
- After 10 minutes, ake an ABG to demonstrate that the CO2 is rising.
- PaCO2 rises by 3mmHg every minute of apnoea. At 60mmHg, the respiratory centre is maximally stimulated.
- To qualify for brain death, apnoea must persist despite adequate respiratory stimulus.