

THE UNIVERSITY OF KANSAS HOSPITAL

3901 Rainbow Boulevard
Kansas City, Kansas 66160

EXAMINATION CRITERIA FOR BRAIN DEATH DETERMINATION: ≥ 14

Do not write in this box



Name: _____

DOB: _____

MR#: _____

I. Prerequisites	First Exam		Second Exam (optional)	
	Yes	No	Yes	No
1. Absence of severe hypotension				
2. Core temperature > 90° F / 32° C				
3. Absence of neuromuscular blockade				
4. Absence of sedatives/CNS depressants				
5. Absence of severe metabolic disturbances				
6. Time from brain insult	_____ hours			

II. Clinical Exam Mechanism of injury, CT results, level of consciousness (narrative)	First Exam		Second Exam (optional)	
	Present	Absent	Present	Absent
Date ___/___/___ Time _____ Print Examining physician: _____ Print Attending physician: _____ Signature _____ Exam must be co-signed by the attending physician			Date ___/___/___ Time _____ Print Examining physician: _____ Print Attending physician: _____ Signature _____ Exam must be co-signed by the attending physician	
1. Spontaneous movement/posturing				
2. Purposeful response to deep pain				
3. Pupillary response to light				
4. Corneal reflex				
5. Oculocephalic reflex (Doll's eyes)				
6. Gag reflex				
7. Cough reflex				
8. Oculovestibular reflex (Cold calorics)				
9. *Spontaneous respirations during apnea test PCO ₂ Beginning _____ Ending _____			Not required	Not required

* Procedure for Apnea testing: (should be done last and only after all other reflexes are absent). Results are unreliable in chronic CO2 retainers. Additional ancillary testing is appropriate.

1. Adjust ventilator to bring PCO₂ into the 40's.
2. Preoxygenate the patient with 100% oxygen for 10 minutes.
3. Obtain baseline ABG to establish PCO₂ immediately after pre-oxygenation.
4. Disconnect patient from ventilator and connect suction catheter to flow meter at 6L or connect to T-piece with 10 L/min and place down ET tube.
5. Observe patient for 5-10 minutes and document PCO₂ at end of test. If stable, draw ABG and continue to observe off ventilator until ABG results available.
6. If hemodynamic instability ensues, discontinue test. Draw ABG, if possible.
7. The PCO₂ should be > 60 to establish apnea.

III. Additional Ancillary Tests if Applicable (not required)

Reason for confirmatory exam: _____

1. Absence of cerebral blood flow: Date ___/___/___ Time _____ Yes No N/A
2. Isoelectric EEG: Date ___/___/___ Time _____ Yes No N/A
3. Transcranial Doppler (must have baseline TCD) Date ___/___/___ Time _____ Yes No N/A

I have reviewed all documentation and attest that this patient meets the criteria for brain death and is so declared

Date: _____ Time: _____ Attending Physician Signature: _____

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CLINICAL DIAGNOSIS OF BRAIN DEATH: GUIDELINES FOR DIAGNOSTIC CRITERIA (For Patients 14 years or Older)

“Brain death is the irreversible cessation of all functions of the entire brain, including the brain stem. A determination of death must be made in accordance with accepted medical standards.”

Uniform Determination of Death Act, 1980

I. Confirmation of the presence of the three cardinal findings in brain death

1. Coma or unresponsiveness – No cerebral motor response to standardized painful stimulus (such as, pressing on the supraorbital nerve, temporomandibular nerve, or nail-bed of a finger)
2. Absence of brainstem reflexes. The examination of the brain stem reflexes requires the measurement of reflex pathways in the mesencephalon, pons, and medulla oblongata.
 - Pupils – No response to bright light. Round or oval pupils in mid-position with respect to dilation (4 mm - 6mm), irregular, non-reactive.
 - Ocular movement – provoked eye movements. No eye movement in brain death. The following procedures test the same cranial nerves (CN 3, 4, 6). The examiner may choose one or both tests:
 - ◆ Oculocephalic Reflex Response (Doll’s Eyes Phenomenon). Rapid turning of the head. Normal response - eyes turn together to side opposite from turn of head; Absent reflex finds eyes turning with head movement. *Contraindicated to patients with spinal injury.*
 - ◆ Oculovestibular reflex (Cold Caloric). Elevate the HOB 30 degrees. The tympanum must be irrigated with 50 ml of cold water. Observe for 3 minutes. There should be no tonic deviation toward the cold stimulus.
 - Corneal Reflex. Touch the edge of the cornea with a swab to produce an adequate stimulus, such as, blink response. Absent in brain death.
 - Cough and gag response. Response after stimulation of the posterior pharynx with tongue blade or cough response to deep bronchial suctioning.
3. APNEA TEST. After the absence of brain stem reflexes has been documented, apnea must be formally tested. Positive test: Apnea with a PCO₂ greater than 60 mmHg.

II. If the checklist is not part of the permanent chart, documentation should include:

1. Etiology and irreversibility of condition.
2. Absence of brainstem reflexes.
3. Absence of motor response to pain.
4. Absence of respiration with PCO₂ greater than or equal to 60 mmHg.
5. Justification for confirmatory test and result of confirmatory test.
6. Repeat neurologic examination. (Option: the interval is arbitrary, but a 6-hour period is reasonable).

References: *New England Journal of Medicine*, Volume 344, No.16. April 19, 2001. www.nejm.org.
Practice Parameters: Determining Brain Death in Adults. *American Academy of Neurology*, 1994.