

## Adult Apnea Test

Purpose:

To standardize the evaluation of patients in regards to Brain Death and Apnea. Brain death is defined as the irreversible cessation of cerebral and brain stem function. For the Apnea Test to be positive there is to be no respiratory drive, or spontaneous breaths regardless of Hypercarbia or hypoxemia. The following pre-requisites should be observed before proceeding with the test.

Prerequisites:

- Obtain Physician order
- $\geq 18$  years old
- Notify the RN prior to performing the test
- Physician must be present at bedside when performing apnea test
- Core temperature  $\geq 32.0$  C
- Systolic blood pressure  $\geq 90$  mm Hg

Apnea Test Procedure:

1. Review the last Blood Gas (must be within 15 minutes of the test making sure the PCO<sub>2</sub> is 35-45mm Hg and the PaO<sub>2</sub> > 80 mm Hg for patients with no pre-existing conditions (normal).
2. Set the FiO<sub>2</sub> to 100% for a minimum of 10 minutes prior to step 3
3. Place patient on T-piece with 100% FiO<sub>2</sub>.
4. Closely look for respiratory movements.
5. Closely monitor the HR, BP, SpO<sub>2</sub>, and RR on the ventilator or aerosol t-piece for 10 minutes as tolerated. (CORE would like to keep the SpO<sub>2</sub>  $\geq 92\%$  during testing)
6. If spontaneous respiratory movements are observed, the apnea test result is negative, and the test can be repeated at a later date.

7. The apnea test is positive if:
  - A. For a CORE patient; spontaneous respiratory movements are absent and arterial  $PCO_2 \geq 60$  mm Hg or 20 mm Hg higher than baseline, and having no respirations on an aerosol t-piece for 10 minutes. Avoid hypoxia which could damage otherwise healthy tissue, keep  $SpO_2 \geq 92\%$  unless instructed to do otherwise by the Physician. Because hypoxemia may occur during apnea testing,  $SpO_2$  must be monitored continuously. BP should be observed closely as hypotension frequently develops towards the end of the test and usually indicates progressive respiratory acidosis.
  - B. For a non-CORE patient; spontaneous respiratory movements are absent for 10 minutes, a duration sufficient to produce Hypercarbia respiratory drive, a drop in HR by 20 bpm from baseline indicating impending laparotomy and arrest in the absence of ventilation.  $SpO_2$  is not to be a limiting factor for a non-CORE patient.
8. To terminate the test obtain an Arterial Blood Gas prior to placing the patient back on the pre-test settings.
9. Report all findings to the Physician and chart the outcome of the test. Including:
  - Duration of test
  - HR every 1 min.
  - BP every 1min.
  - $SpO_2$  every 1 min.
  - Reason for terminating the test

**Terminate the test if patient starts breathing spontaneously, develops hypotension or cardiac arrhythmias.**

\*Document via Merlin: Notes – Smart text – Apnea test.