

DEATH BY NEUROLOGICAL CRITERIA

DNC Evaluation in non-Co2 retainers (COPD) and non-ECMO Adults																									
Patient	Comatose – Apneic - Brainstem areflexia – Identifiable cause of brain Injury Consent is not needed; however, family should be informed																								
Timing	Wait sufficient amount of time to ensure no potential recovery At least >24h after hypoxic brain injury At least >48h for infants < 24 months old																								
Vital Signs	Temp $\geq 36^{\circ}\text{C}$ for at least 24h SBP >100 & MAP >75 in adults, >5th percentile in kids VA ECMO patients use MAP, special attention regarding ABG sampling site																								
Metabolic	Toxicology negative, alcohol level <80mg/dl if indicated CNS medications are not suprathreshold, wait 5 t-half if level not available. Paralytic agent effect is excluded (use train of 4) if indicated <table border="1"> <thead> <tr> <th colspan="4">Metabolic Derangements that may Confound Neurological Examination</th> </tr> </thead> <tbody> <tr> <td>Sodium</td> <td><130 or > 160 mmol/L</td> <td>Potassium</td> <td><3 or >6 mmol/L</td> </tr> <tr> <td>Calcium</td> <td><7 or >11 mg/dL</td> <td>Magnesium</td> <td><1.5 or >4 mg/dL</td> </tr> <tr> <td>BUN</td> <td>>75 mg/dL</td> <td>Ammonia</td> <td>>75 $\mu\text{mol/L}$</td> </tr> <tr> <td>Glucose</td> <td><70 or >300 mg/dL</td> <td>PH</td> <td><7.3 or >7.5</td> </tr> <tr> <td>Total T4</td> <td><3 or >30 mg/dL</td> <td>Free T4</td> <td>≤ 0.4 or >5 ng/dL</td> </tr> </tbody> </table>	Metabolic Derangements that may Confound Neurological Examination				Sodium	<130 or > 160 mmol/L	Potassium	<3 or >6 mmol/L	Calcium	<7 or >11 mg/dL	Magnesium	<1.5 or >4 mg/dL	BUN	>75 mg/dL	Ammonia	>75 $\mu\text{mol/L}$	Glucose	<70 or >300 mg/dL	PH	<7.3 or >7.5	Total T4	<3 or >30 mg/dL	Free T4	≤ 0.4 or >5 ng/dL
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Examination	1 exam for adults, 2 exams for kids 12h apart Ensure: patient is comatose, no response to stimuli, no motor response other than spinal reflexes, no light, COR, corneal, cough or gag reflexes Caloric test if COR can't be performed (ex, neck injury)																								
Apnea Test	Place an arterial line, obtain baseline ABG, ensure normal PH and PaCO ₂ Preoxygenate for 10 minutes, repeat ABG to confirm PaO ₂ >200 Get ABG every 2 minutes until Ph <7.3 & PaCO ₂ ≥ 60 and ≥ 20 mmHg above baseline Positive: ABG markers achieved and no breath > pronounced dead Negative: patient was able to breath > abort Abort if SaO ₂ < 85%, SBP <100 or MAP <75																								
Ancillary Tests	Use: Catheter angiography (flow arrest), Radionuclide scan (hollow skull sign) or TCD (Oscillating flow or systolic spines in large arteries) Don't use: EEG, SSEP, AEP, CTA or MRA Indications: <ul style="list-style-type: none"> ○ Component of the neurological exam can't be performed (ex; facial trauma) ○ Unclear if motor response is a spinal reflex or not ○ Metabolic derangement can't be corrected ○ Apnea test can't be completed due to hypotension, hypoxia or arrhythmia ○ Chronic CO₂ retainers with unknown baseline PaCO₂ 																								
Time of Death	Either time of last ABG or time the ancillary test results were reported in the chart																								

