

PROCEDURE FOR: Mechanical Ventilator Discontinuation Protocol

PURPOSE: To facilitate timely removal from mechanical ventilation.

PROCEDURE: Screening criteria will be evaluated between 6am - 7am for all patients on mechanical ventilation (unless there is a specific order written to hold mechanical ventilator discontinuation protocol). In order to initiate a spontaneous breathing trial, the following criteria should be met:

1. The patient should not be on any continuous infusion of vasoactive medications, unless cleared by MD/APRN.
2. PEEP should not exceed 5cm H₂O.
3. PaO₂ / FiO₂ > 200. To calculate, use PaO₂ on most recent ABG (daily ABG's not required if SaO₂ stable and correlates) and divide by FiO₂.
Example: PaO₂ 75 & FiO₂ 40%: 75 ÷ 0.40 = 187.5
4. If the above conditions are met, the RN is to **titrate sedation to a Richmond Agitation Sedation Scale (RASS) of 0.** (Goal is that the patient is alert & calm.)
5. Document if cough and gag reflexes are present.
6. Maintain head of bed ≥ 30°.
7. Discontinue tube feeds.
8. If above conditions met, begin Spontaneous Breathing Trial (SBT) & document on ICU Flowsheet.
9. Per discretion of the MD/APRN, a spontaneous breathing trail may be ordered even if all items above are not met.

PROCEDURE FOR: Spontaneous Breathing Trial (SBT): 8-10am

1. Start SBT with PEEP 5cm H₂O, Pressure support(PS)dependent on tube size, and current FiO₂ (+ 5%) for up to 2 hours:
Endotracheal Tube size 7: **PS 6**, Tube size 8: **PS 5**
2. Draw an ABG after 1 hour
3. The trial is to be terminated if the Nurse/RT identifies any of the following for more than three minutes:
 - Rapid Shallow Breathing Index (RSBI) > 105 (normal: <105)
Newer ventilators will calculate the RSBI. To manually calculate RSBI: Document patients' resp rate (RR) and minute ventilation (VE) after one minute of SBT. Obtain the tidal volume (Vt) by dividing the VE by the RR. Finally, calculate RSBI by dividing RR by Vt.
Example: VE = 9.5 L at end of 1 minute, divided by RR of 20 = Vt 0.475 L; RSBI = RR (20) divided by Vt (0.475 L)- 42.5
 - SpO₂ below 90%
 - Heart rate > 120 beats per minute
 - Sustained changes in heart rate of 20% in either direction

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- Systolic blood pressure > 150 mmHg or < 90 mmHg or 20% change in either direction
 - Increased anxiety
 - Diaphoresis
4. If the patient exhibits any of the above signs, the SBT fails - end the trial at that point.
 5. Document the time the SBT was terminated if before 2 hours.
 6. If the patient tolerates the SBT for up to 2 hours, notify the MD/APRN, document on RT daily worksheet, and consider extubation.

APPROVAL: Critical Care Advisory Committee
Respiratory Therapy
Nursing Standards Committee

EFFECTIVE DATE: 4/2008

REVISION DATES: