

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. FiO_2 should not exceed 50%. PEEP should not exceed 5cm H_2O .
3. $PaO_2 / FiO_2 > 200$. To calculate, use PaO_2 on most recent ABG (daily ABG's not required if SaO_2 stable and correlates) and divide by FiO_2 .
Example: PaO_2 75 & FiO_2 40%: $75 \div 0.40 = 187.5$
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 $\geq 30^\circ$.
7. If above conditions met, begin Spontaneous Breathing Trial (SBT) & document on ICU Flowsheet.
8. Per discretion of the MD/APRN, a spontaneous breathing trial 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 H_2O , Pressure support (PS) dependent on tube size, and current FiO_2 (+ 5%) for up to 2 hours:
Endotracheal Tube size 7: **PS 8**, Tube size 8: **PS 5**
2. Discontinue tube feeds.
3. Draw an ABG after 1 hour
4. 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 (V_t) by dividing the VE by the RR. Finally, calculate RSBI by dividing RR by V_t .
Example: $VE = 9.5$ L at end of 1 minute, divided by RR of 20 = V_t 0.475 L; $RSBI = RR (20)$ divided by $V_t (0.475$ L)- 42.5
 - SpO_2 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: