

## Standard of Care and Practice

Title: **DAILY SPONTANEOUS BREATHING TRIALS (SBT) FOR VENTILATOR PATIENTS ON CRITICAL CARE SERVICE**

Responsibility: Respiratory Therapist assisted by RN or Physician

Equipment: None Needed

<u>Procedure</u>	<u>Point of Emphasis</u>
<p>1. Respiratory Therapist will evaluate patient for any contraindications as outlined in the Weaning Readiness Assessment portion of the Ventilator Weaning Assessment Flow Sheet (Appendix I).</p> <p>If a contraindication is present, the RT will discuss with the physician to determine if initiation of a Spontaneous Breathing Trial (SBT) is to be performed.</p> <p>An order for a SBT will be obtained from the physician prior to initiation of the trial.</p>	<p>Confirms that patient is eligible for SBT and that criteria have been met. Absolute/Relative contraindications are as follow:</p> <ol style="list-style-type: none"> <li>1. Diaphoresis, agitation or dyspnea.</li> <li>2. Fever &gt; 101 F.</li> <li>3. Pulse &lt; 50 or &gt; 120 bpm.</li> <li>4. Systolic Blood Pressure &lt; 90 mmHg.</li> <li>5. Blood pressure requiring vasopressor support.</li> <li>6. PaO<sub>2</sub>/FIO<sub>2</sub> &lt; 200.</li> <li>7. SpO<sub>2</sub> &lt; 90% and/or FIO<sub>2</sub> &gt; .50 and/or PEEP &gt; 8 cmH<sub>2</sub>O.</li> <li>8. Pt. is unable to follow simple commands on a cont. infusion of Midazolam, Ativan, Diprivan or other hypnosedatives with the exception of PCA Morphine, Fentanyl and Dilaudid with a basal rate.</li> <li>9. Pt. on dialysis currently.</li> <li>10. Surgery planned in next 24 hours.</li> <li>11. Hx. of OSA.</li> </ol>
<p>2. RN will stop Propofol infusions at appointed time (strive for 0830; consult with RT to confirm).</p>	<p>Infusion of sedatives decreases respiratory drive.</p>
<p>3. Explain procedure to patient.</p>	<p>Explanation will decrease anxiety and provide reassurance to patient.</p>
<p>4. Confirm Head of Bed is at 30 degrees unless contraindicated.</p>	<p>Head of bed elevation will decrease diaphragmatic pressure making it easier for patient to breathe and decreasing the risk for aspiration.</p>
<p>5. Provide oral care and hold tube feedings.</p>	<p>Providing oral care will remove oral secretions that may be accumulated above the ETT cuff. Holding tube feedings will help to decrease the risk of aspiration.</p>
<p>6. Respiratory therapist will place patient on CPAP and FIO<sub>2</sub> at current settings and titrate PSV to keep TV at 5-8 ml/kg IBW. Baseline ventilatory parameters will be documented prior to the start of the SBT with subsequent assessments documented at 10 min., 30-45 min. and up to 90 min.</p>	<p>These values of PSV /CPAP compensate for the increased work of breathing caused by the ventilator circuit and endotracheal tube.</p>
<p>7. Suction endotracheal tube as necessary.</p>	

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8. RN and Respiratory Therapist will monitor patient for fatigue parameters.

If fatigue parameters are present, the patient will be returned to their previous ventilator settings. The RT and/or RN will notify physician of the fatigue.

If no fatigue parameters are present, physician will be notified to evaluate the patient for possible extubation.

Fatigue parameters to be monitored include:

- Diaphoresis, agitation or dyspnea
- Signs of increased WOB
- If ABG obtained, PaCO<sub>2</sub> > 10mmHg, PaO<sub>2</sub> < 60 mmHg of pre-trial ABG values
- RSBI (keep <105)
- Resp Rate (keep <35 bpm for >5 min.)
- Tidal Volume
- Minute Ventilation
- HR (keep at 50 – 120 or <20% change from baseline)
- Systolic BP (keep <180 or >90 mmHg)
- SpO<sub>2</sub> (keep >92%)
- ETCO<sub>2</sub> (monitor if available)

This will allow adequate rest before repeating trail. A failed trial can precipitate respiratory muscle fatigue.

Upon successful completion of a SBT, but prior to extubation, the following questions are to be answered by the RT:

- Pt. awake and easily arousable
- Effective cough
- Vital capacity of >10 ml/kg IBW
- MIP > -30 cmH<sub>2</sub>O
- Requires suctioning less freq. than q.2hrs
- Adequate cuff leak
- Orders to extubate obtained

### Documentation

Respiratory Therapist documentation: Ventilator Weaning Assessment/Flow Sheet

RN Documentation: MAR - Sedative stop and restart times, if applicable.

Approved by:

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### References:

- Astle S, Smith D. (2007). Taking your patient off a ventilator. RN. 70(5), Retrieved from CINAHL Plus with Full Text database.
- Pertab D. (2009). Principles of mechanical ventilation - a critical review. British Journal of Nursing (BJN), 18 (15), 915-918.  
Retrieved from CINAHL Plus with Full Text database.
- MacIntyre, N. R. (2001). Evidence-based guidelines for weaning and discontinuing ventilator support. Chest, 120(6), 375-395.
- Girard, T., Kress, J., Fuchs, B., Thomason, J., Schweickert, W., & Pun, B. T. (2008). Efficacy and safety of a paired sedation and ventilator weaning protocol for mechanically ventilated patients in intensive care (awakening and breathing controlled trial): A randomised controlled trial. Lancet. 2008 Jan; 371(9607):126-134.
- Blackwood B, Alderdice F, Burns K. et al. Use of weaning protocols for reducing duration of mechanical ventilation in critically ill adult patients: Cochrane systematic review and meta-analysis: BMJ. 2011 Jan; 342:c7237.
- Agency for Healthcare Research and Quality Documents. Coordinated Spontaneous Awakening and Breathing Trials Protocol. AHRQ Pub. No. 16(17)-0018-17-EF. January 2017.