Ready to Wean Assessment

- The following clinical criteria must be met:
  - Hemodynamically stable (Not actively titrating)
  - Not receiving paralytics
  - Stable arrhythmia
  - Not on ICP Protocol
  - Neurological events > 24hrs
- Above assessment can be overridden by Critical care Attending

Ready to Wean Screening

- PaO₂/FiO₂ ratio (> 180)
- PEEP ≤ 5-8 cm H₂O
- pH (≥ 7.32)
- RR (8 - 35 bpm)
- HR ≤ 130 bpm, MAP ≥ 65 mm Hg and requiring ≤ 5 µg/min norepinephrine or equivalent
- Hgb (≥ 7 gm/dL)
- Able to breathe spontaneously
- Not chemically paralyzed
- Improvement or resolution of the indication for ventilation
- Arousability, Richmond Agitation Sedation Scale (RASS) > -2 and ability to cough.
  - RASS score will be documented by the dayshift nurse in the am daily

If answered YES to all above, perform Spontaneous Breathing Trial (SBT).

SIMV Weaning

- Ventilator weaning can start on all patients when patient is overbreathing the ventilator. Therapist can wean rate, FiO₂, and Pressure Support. All other settings should be discussed with MD and orders placed in computer.

Spontaneous Breathing Trial (SBT)

- Initiate SBT; ventilator settings:
  - PSV 5 cm H₂O or PSV 0 with Automatic Airway Compensation or equivalent
  - Peep ≤ 5 cmH₂O
  - FiO₂ ≤ 50%
  - Duration of trial 30 minutes
Respiratory Therapist must remain at the bedside for the 1st 5-10 minutes of the trial to observe patient tolerance, and appropriateness to continue; then remain in the unit thereafter for the duration of the trial.

After trial has been passed and completed, attempt mechanics and extubation criteria. Notify STICU Fellow or Attending if patient is ready to extubate.

Extubation Criteria
- Secretions (Moderate or less secretions)
- Oxygenation (SaO2 >94% on .40 or <)
- Airway/alert (Patient able to protect airway)
- Parameters (Pulmonary Mechanics)
  - RR < 30
  - VT > 5 cc/kg
  - Minute ventilation < 12 LPM
  - NIP < - 25 cm H2O
  - Vital Capacity >15cc/kg
  - F/VT < 105
  - Cuff leak present when cuff deflated

(Endotracheal tube cuff leak must be verified by a physician before extubation is attempted).

Weaning Intolerance Criteria
- RR > 35 bpm
- SaO2 < 88% OR > 5% fall
- HR > 130 bpm or > 20% increase in HR
- SBP > 180 mmHg or < 90 mmHg
- Increased anxiety/agitation
- New arrhythmia occurs

Should the above “fail” criteria be demonstrated, the SBT shall be stopped, PS increased to a comfortable level (non fatiguing level of support) that maintains a VT of > 5 ml/kg and a RR of < 35 bpm and the physician will be informed.
References:


- Cohen, JD et al. Extubation outcome following a spontaneous breathing trial with automatic tube compensation versus continuous positive airway pressure. Critical Care Medicine. 2006 ; 34(3) 682-6


- Estaban, A et al. Extubation outcome after spontaneous breathing trials with t-tube or pressure support ventilation. The Spanish Lung Failure Collaboration Group. Am J Respir Crit Care. 1997 156; 459-65

