

PROLONGED WEANING GUIDELINES

Pre Weaning

- Discuss and explain the proposed weaning plan with the patient and family
- Liaise with physiotherapist to ensure define means of sputum clearance are established.
- Patient has a clear or improving chest X-ray and patient is afebrile, with no infective markers or symptoms
- Ensure arterial blood gas analysis and pulse oximetry are stabilized, i.e., SpO₂ ≥94% on FiO₂ ≤40
- Patient stable on PEEP of 5cm H₂O or less
- Check that a pressure support of 25cm H₂O or less can achieve a tidal volume of 8 – 10 mL/Kg (lean body weight)
- Complete a respiratory assessment chart
- Complete a personalised weaning prescription chart with defined targets



Assessment of Vital Capacity

- If VC is less than 250 mL, start with 5 minutes Spontaneous Breathing Trial (SBT) or Ventilator Free Breathing (VFB)
- If VC is less than 500 mL, start with 15 minutes SBT
- If VC is greater than 750 mL, start with 30 minutes SBT



Spontaneous Breathing Trial (SBT) or Ventilator Free Breathing (VFB)

- Weaning must be performed with the tracheostomy cuff deflated
- SBT/VFB should be performed on CPAP or intrinsic PEEP:
 - CPAP via ventilator
 - CPAP via device (Whisper-Flow or equivalent)
 - Speaking valve with cuffless tracheostomy, which gives the patient, back their intrinsic PEEP and allow them to talk.
(Avoid speaking valve with cuffed tracheostomies even if cuff deflated, it is safer to change tracheostomy to cuffless one)
- Always rest the patient back from the SBT on their usual ventilator settings without decreasing IPAP. Aim for 8-10mL/kg VT (if able to measure on ventilator)

Spontaneous Breathing Trial (SBT) or Ventilator Free Breathing (VFB) timetable

- Start SBT as defined above by VC, 3 times a day.
- Progress gradually as 5min, 10min, 15min, 20min, 30min, 45min, 60min, tds
- At any point consider keeping the same timings for 2 consecutive days before progressing but adjust to individual patient. Consider also a “resting day” if other interventions are happening (i.e., tilt table)
- Then 90min, 120min, 150min, 180min, tds
- Then 4h, 5h, 6h, 7h twice a day
- Once achieved more 6-7 hours twice a day, try a full day 12-14 h consecutive on spontaneous breathing. Continue overnight pressure control ventilation (BIPAP, PCV) for about another 5-7 days while spontaneously breathing at day time
- If patient stable attempt a 24 h spontaneous breathing trial
- Continue to monitor patient. Perform ABG/CBG and consider TCCO₂ 2-3 after 24 h weaning.
- Consider then downsizing tracheostomy and capping it off to assess sputum clearance through mouth (with device or with assisted cough manoeuvres).
- Decannulation should be consider by MDT
- If patient is deemed to need overnight ventilation after decannulation consider non-invasive ventilation

Ensure that at all times during weaning plan there is an established chest clearance routine with regular chest physiotherapy with or without positive pressure device. Physiotherapy should be working on reducing the need for suction and optimising clearance independently (manual assisted cough/spontaneous coughing)

PREVENT FATIGUE

- Never exhaust or tire the patient.
- Rest for at least 2 hours before another period of SBT/VFB in the initial phases.
- Watch for rises in heart rate and/or respiratory rate as signs of tiring. Consider ABG/CBG.
- Measuring VC before and after the VFB period may help to identify fatigue early. If there is a considerable drop (approx. 50%) then the patient is tiring. In that case, consider reducing the VFB time.
- All weaning are to be completed between the hours of 0600 hours and 2200 hours, if the patient is weaning less than 16 hour
- If patient develops chest infection or if secretions volume or color changes, stop weaning until patient improves.
- In the event of stopping weaning, it may be appropriate to restart from the beginning when the problem has resolved, depending upon clinical picture and patient VC at the time.
- Nutrition is an important component of weaning. Ensure patient is well nourished. Downsizing NG tube will help with weaning and phonation. PEG feeding may help some patients; consider referral after consultation with SALT and dieticians.