Ventilation Guideline
For patients with Acute Lung Injury / ARDS

Set Targets
- \( \text{PO}_2 > 8 \text{kPa} \)
- \( \text{SaO}_2 > 92\% \)
- \( \text{pH} > 7.25 \)

Fully ventilate if \( \text{FiO}_2 > 60\% \)
- \( \text{Vt} < 8 \text{ml/kg IBW} \)
- PEEP up to 20\% \( \text{FiO}_2 \)
- \( \text{P}_{\text{peak}} < 30 \text{cmH}_2\text{O} \)
- Alter RR to maintain \( \text{pH} \geq 7.25 \)

Adjust PEEP ± \( \text{P}_{\text{peak}} \) for high intra-abdominal pressure

Targets met?

- Hypoxia
  - Maximise PEEP
  - I:E ratio to 1:1
  - If expiratory flow allows
  - Consider:
    - Paralysis
    - Prone ventilation
    - APRV
    - ECMO Referral GSTT

- pH <7.25
  - Without metabolic component
  - RR to max 30
  - Check expiratory flow
  - ↓ dead space
  - Consider:
    - Paralysis
    - ECMO Referral GSTT

Inform Shift Leader if:
- \( \text{FiO}_2 > 60\% \)
- PEEP > 12cmH\(_2\)O
- \( \text{P}_{\text{high}} > 30 \text{cmH}_2\text{O} \)
- Unable to meet targets

Notes:
1. Vt in ml/kg is recorded by Metavision in ‘Advanced Respiratory’
2. This is intended as a guide.
3. Don’t alter PEEP for each ABG, but allow PEEP to remain high against reducing \( \text{FiO}_2 \)
A meta-analysis published in 2018 by FICM for the management in ARDS has made suggestions managing this group of patients. The recommendations are:

- All patients with ARDS should have conservative fluid management. Protective ventilation low TV 6-8ml/kg/IBW. (Weakly in favour)
- Recommended patients with Severe & Moderate definition ARDS (Berlin definition) to be prone for at least 12 hours. (Strongly in favour)
- High PEEP recommended in ARDS with moderate to severe ARDS (Weakly in favour)
- Use of Neuro-Muscular Blockade in Moderate & Severe ARDS (Weakly in favour)
- All patients with severe ARDS are referred to an ECMO centre

FICM conclude that a multimodal intervention comprising lung-protective ventilation with prolonged-duration prone positioning producing highly favourable in improving mortality in this group of patients.

Quick Links:

- BSUH ICU Proning guideline
- BSUH APRV guideline
- GSTT Severe Respiratory Failure / ECMO Referral information
  - https://www.signpost.healthcare/ecmo-referral-pathway