

Ventilation Guideline

For patients with Acute Lung Injury / ARDS

ICU Ventilation Group
March 2018 Reviewed 2020

Set Targets
 $PO_2 > 8\text{kPa}$
 $SaO_2 > 92\%$
 $pH > 7.25$

Fully ventilate if $FiO_2 > 60\%$
 $V_t < 8\text{ ml/kg IBW}^1$
PEEP up to 20% $FiO_2^{2,3}$ $P_{\text{peak}} < 30\text{ cmH}_2\text{O}$
Alter RR to maintain $pH \geq 7.25$

Adjust PEEP $\pm P_{\text{peak}}$ 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

Inform Shift Leader if:
 $FiO_2 > 60\%$
 $PEEP > 12\text{cmH}_2\text{O}$
 $P_{\text{high}} > 30\text{cmH}_2\text{O}$
Unable to meet targets

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

Notes:
¹ V_t 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 F_iO_2

Notes and Guidance

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>