

How to start and operate BiPAP/CPAP machine

Continue basic **ventilation and oxygenation** support

- **Ventilation**

- i. Propped-up
- ii. Nebulize if suggestive of Asthma/COPD
- iii. If crepts+ & suggestive of heart failure -> IV Lasix

- **Oxygenation**

- i. Face mask 5-10L/min
- ii. NRBM 10-15L/min

Re assess the patient RR and SpO₂ if

RR>25/min or SpO₂ <94% or

SpO₂ <88% in chronic CO₂ retainers (HCO₃ >30 in ABG/VBG)

Consider escalation to High Flow Nasal Cannula (**HFNC**)/ NIV- CPAP-BiPAP
Starting BiPAP ventilation

1. Plug the machine
2. Connect the machine to high flow 25L oxygen flow meter(25-70L) starts 25l oxygen flow rate
3. Switch on the machine
4. Unlock the machine & Go to settings and select options as mentioned below
Pathology – Normal Mode – ST
IPAP- 10
EPAP-5
Backup Rate - 15

5. Select the appropriate mask
 if the mask is a vented mask can directly connect to the inspiratory limb.
 if the mask is a non-vented mask connect additional ventilatory port to the mask
 before connecting to the inspiratory limb.
6. Run the Machine – Feel the gas flow coming out from the machine explain the patient about the Non Invasive Ventilation.
7. Slightly remove the NRB and fit the NIV mask. Fit the mask tightly to reduce leak <25L/min
8. Keep tidal volume (TV) at 6-8ml/kg \approx 7ml/kg
9. Adjust TV 7ml/kg by increasing ΔP (adjust IPAP by 1cm H₂O increments – Correct ventilation with achieving the target TV
10. After achieving target TV if SPO₂ less than 94%
 - i. Increase FiO₂ by increasing O₂ flow rate above the 25L up to 70l
 - ii. Increase EPAP by 1cmH₂O, Keep the same ΔP (Each 1cmH₂O increment in EPAP should follow 1cmH₂O increment in IPAP to maintain constant ΔP (try to maintain $\Delta P > 5$ cm H₂O)
 - If the patient having obstructive lung disease (BA/COPD) never increase EPAP above 5cm H₂O.
 - iii. Increase I time (I_{min}/I_{MAX})
 - iv. Increase fall time
 - v. Decrease rise time.
11. Re assess the patient clinically after setup and arrange ABG/ VBG one hour after starting NIV
 Target RR <25 SPO₂ \geq 94 PCO₂ <45
12. while maintaining SPO₂ \geq 94 If PCO₂ \geq 45
 - Increase TV up to 8ml/kg
 - Decrease EPAP
 - Increase fall time.