

Neonatal & Pediatric Settings

Ventilator Settings

SETTING	PRETERM (Neonate)	TERM (Neonate)	PEDIATRIC (Child)	SPECIAL CONSIDERATIONS
Mode	ACPC + VG	ACPC + VG	PC + VG ACPC ACVC	Choose mode based on patient condition and clinician preference.
Tidal Volume (VT)	4 – 6 ml/kg	5 – 8 ml/kg	6 – 10 ml/kg	Use ideal/estimated body weight.
Respiratory Rate (RR)	40 – 60	25 – 40	12 – 35*	Pediatric RR depends on age – younger the patient, higher the RR.**
PEEP (cm H₂O)	5	5	5	Adjust based on oxygenation and lung mechanics.
FiO₂ (Start & Target)	- Start 10% higher than previous FiO₂ or 100% if cardiopulmonary arrest. - Titrate to maintain SpO₂ 91–95% (or per case/target range).			
Inspiratory Time (Ti)	0.25 – 0.4 sec	0.3 – 0.5 sec	0.6 – 1.0 sec	Adjust based on patient age, disease, and response.
Slope (Rise Time)	0.05 sec	0.05 sec	—	Shorter rise time in neonates.
I:E Ratio (Typical)	1:2 – 1:3	1:2 – 1:3	1:1.5 – 1:2	Adjust based on pathology and blood gases.
Alarms	- Apnea time: Neonate 10 sec Pediatric 15–20 sec - RR maximum: 120 - VE (Minute Ventilation): High 5 L/min Low 0.5 L/min - PIP (Pmax) High: 25 cm H₂O - PEEP High: 10–15 cm H₂O - FiO₂ High: 100% Low: 21%		Follow adult guidelines for alarm limits.	Adjust alarm limits based on patient size, condition, and clinical setting.
Target Parameters	- SpO₂: 91–95% (or as per case) - PaCO₂: 35–45 mmHg - pH: 7.25–7.45			Individualize targets based on diagnosis and clinical status.

* Adjust according to age. ** Younger the patient, higher the RR.

Abbreviations: ACPC: Adaptive Pressure Control | VG: Volume Guarantee
ACVC: Adaptive Volume Control

NIV Settings

SETTING	ADULT	PEDIATRIC (> 1 YEAR)	INFANT (< 1 YEAR)	SPECIAL CONSIDERATIONS
Mode	CPAP / CPAP + PS S / ST (BiPAP)	CPAP / CPAP + PS S / ST (BiPAP)	CPAP / nCPAP (± PS if needed)	Choose mode based on patient condition and tolerance.
EPAP / PEEP (cmH₂O)	4 – 8	4 – 8	4 – 6	Increase to improve oxygenation (recruitment).
IPAP (cmH₂O) (if applicable)	8 – 20	8 – 18	6 – 16	Adjust to achieve adequate Tidal Volume and CO₂ removal.
Pressure Support (PS) (cmH ₂ O)	4 – 10	4 – 10	4 – 8	Set PS = IPAP – EPAP.
Backup Rate (breaths/min) (if using S/T mode)	10 – 20	15 – 25	20 – 30	Set slightly below patient's spontaneous rate.
Rise Time (Ramp)	100 – 300 ms	100 – 300 ms	100 – 300 ms	Adjust for comfort and synchrony.
FiO₂ (Start & Target)	- Start with FiO₂ 0.21 – 0.40, then titrate to maintain SpO₂ 92–96% (or per target). - Use lowest FiO₂ to achieve target oxygenation.			Adjust based on diagnosis and patient response.
Interface	Oronasal / Nasal Mask / Full Face Mask	Oronasal / Nasal Mask (avoid full face if possible)	Nasal Mask / Nasal Prongs / RAM Cannula	Ensure proper fit and minimal leak.
Humidification	Heated Humidifier (HME if needed)	Heated Humidifier	Heated Humidifier (essential)	Prevent dryness and improve comfort.
Monitoring	- SpO₂, RR, HR, BP as indicated - Watch for signs of intolerance, high leak, gastric distension			ABG if needed to assess ventilation efficacy.
Target Parameters	- SpO₂: 92 – 96% (or per target) - PaCO₂: Normalize or improve - pH: 7.35 – 7.45 - Patient comfort & synchrony			Individualize targets based on diagnosis and clinical status.

Gestational Age (GA) Categories

Extremely preterm	<28 weeks
Very preterm	28 – 32 weeks
Preterm	<37 weeks
Term	37 – <42 weeks
Post-term	≥42 weeks