

QuickLung Breather – Patient Settings

The QuickLung® Breather is capable of simulating a spontaneously breathing patient in a variety of modes and patterns. In response to customer requests, we have compiled five common respiratory cases below. Connect to any ventilator to demonstrate these critical patient-ventilator interaction concepts to deepen and anchor your learners' skills with hands-on training.

The settings indicated below are based on research completed by IngMar Medical in consultation with leading educators. We welcome any feedback to facilitate professional consensus on simulating respiratory patients. You may contact us directly at support@ingmarmed.com.

Adult Severe Respiratory Failure (ARDS)

Patient: Adult admitted to the ICU due to a post-op infection which progressed to severe ARDS. The student should recognize severe respiratory failure and recommend a lung protective strategy.

Breathing Pattern	Eupnea
Resistance	5 cmH ₂ O/L/s
Compliance	20 mL/cmH ₂ O (left and right springs engaged)
Offset	320 mL
Tidal Volume	150 mL
I/E Ratio	27%
Respiratory Rate	20 bpm
Ventilator Settings	
Mode	VC-CMV
Respiratory Rate	16 bpm
Vt	450 mL
PEEP	10 cmH ₂ O
Flow	70 L/min

Adult Ventilator Dysynchrony

Patient: Adult intubated in the emergency room due to refractory hypoxemia and hypoxic ventilator failure and transferred to the ICU. The learner should recognize breath stacking due to premature cycling on the ventilator.

Breathing Pattern	Eupnea
Resistance	20 cmH2O/L/s
Compliance	20 mL/cmH2O (left and right springs engaged)
Offset	430 mL
Tidal Volume	400 mL
I/E Ratio	43%
Respiratory Rate	18 bpm
Ventilator Settings	
Mode	VC-CMV
Respiratory Rate	16 bpm
Vt	500 mL
PEEP	10 cmH2O
Flow	70 L/min

Pediatric Severe Respiratory Failure (ARDS)

Patient: 8 year old male (25 kg) presented to the ER following motor vehicle accident intubated and initiated on mechanical ventilation due to impending respiratory failure. The learner should recognize the inability to safely meet ventilation and oxygenation goals and implement a lung protective strategy.

Breathing Pattern	Eupnea
Resistance	20 cmH20/L/s
Compliance	10 mL/cmH20 (all three springs engaged)
Offset	190 mL
Tidal Volume	80 mL
I/E Ratio	20%
Respiratory Rate	26 bpm
Ventilator Settings	
Mode	PC-SIMV
Respiratory Rate	20 bpm
PIP	17 cmH20
Pressure Support	10 cmH20
PEEP	5 cmH20
Inspiratory Time	0.45 sec

** Note that these settings are for the QuickLung® Breather only and not QuickLung Jr.*

Pediatric Ventilator Dysynchrony (Asthma Exacerbation)

Patient: 4 year old male (20 kg) intubated in the PICU due to respiratory failure secondary to an asthma exacerbation. The main goal in this simulation is to recognize and treat air trapping caused by an expiratory dysynchrony.

Breathing Pattern	Eupnea
Resistance	50 cmH20/L/s
Compliance	50 mL/cmH20 (no springs engaged)
Offset	600 mL
Tidal Volume	120 mL
I/E Ratio	33%
Respiratory Rate	34 bpm
Ventilator Settings	
Mode	PC-SIMV
Respiratory Rate	25 bpm
PIP	20 cmH20
PEEP	5 cmH20
Inspiratory Time	1 sec

* Note that these settings are for the QuickLung® Breather only and not QuickLung Jr.

Adult COPD Exacerbation

Patient: Adult admitted to the emergency room and intubated due to impending ventilatory failure secondary to a COPD exacerbation. Learner should assess an increase in the patient's airway resistance which results in a decreased expiratory time leading to air trapping or intrinsic PEEP.

Breathing Pattern	Eupnea
Resistance	20 cmH ₂ O/L/s
Compliance	50 mL/cmH ₂ O (no springs engaged)
Offset	400 mL
Tidal Volume	300 mL
I/E Ratio	25%
Respiratory Rate	20 bpm
Ventilator Settings	
Mode	VC-CMV
Respiratory Rate	5 bpm
Vt	500 mL
PEEP	5 cmH ₂ O
Flow	50 L/min

COPD Exacerbation on Bipap

Patient: Patient is a hard-to-wean COPD patient that is intubated and is on CPAP+ PS for a weaning trial. Pt is not achieving pressures on vent due to a leak in the circuit. The main goal of this simulation is to assess leak.

Breathing Pattern	Eupnea
Resistance	50 cmH20/L/s
Compliance	20 mL/cmH20
Offset	280 mL
Tidal Volume	? mL
I/E Ratio	25%
Respiratory Rate	16 bpm
Ventilator Settings	
Bipap	14/9
Respiratory Rate	17 bpm
Ti	1.02

Pediatric (20 kg) Asthma Exacerbation using QuickLung Jr.

Patient: 4 year old female (20kg) intubated for pending respiratory failure secondary to asthma exacerbation. The main goal of the simulation is to recognize and treat air trapping caused from the severe asthma attack that is now causing an expiratory dysynchrony.

Breathing Pattern	Eupnea
Resistance	50 cmH ₂ O/L/s
Compliance	15 mL/cmH ₂ O
Offset	190 mL
Tidal Volume	120 mL
I/E Ratio	33%
Respiratory Rate	20 bpm
Ventilator Settings	
PC	20
Respiratory Rate	20 bpm
Peep	5
I/E Ratio	1:4
	Decrease Vt limit to 100ml

Pediatric (25 kg) ARDS using QuickLung Jr.

Patient: 8 year old female (25kg) presenting to ICU after 1-week history of PNA requiring intubation in ER due to ARDS. The learner should initiate a lung protective strategy due to inability to safely meet ventilation and oxygenation goals.

Breathing Pattern	Eupnea
Resistance	20 cmH20/L/s
Compliance	15 mL/cmH20
Offset	100 mL
Tidal Volume	80 mL
I/E Ratio	20%
Respiratory Rate	20 bpm
Ventilator Settings	
PC	20
Respiratory Rate	14 bpm
Peep	5
PS:	7
I/E Ratio	1:4

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