initial strategies for HAMILTON-T1

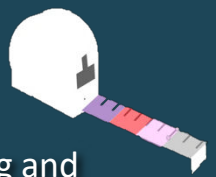
SIMV+
Pressure Regulated Volume Control

neonatal circuit if <4 year-old/15kg

Neonatal

SIMV+

weight



sets Vt at 6ml/kg and determines respiratory rate

Start Ventilation

	Protective lung strategy (all other patients)	Obstructive lung strategy (bronchiolitis/asthma)
Rate	Initial rate is determined by weight; titrate to normal CO_2/pH	Initial rate is determined by weight; titrate to fastest Rate on flow/time waveform that avoids breath-stacking. Permissive hyperCO_2 (pH>7.20)
PEEP/CPAP	use PEEP/O_2 scale 5 5 8 8 10 10 30 40 40 50 50 60	5
Oxygen	to titrate to SpO_2 of 92-95%	titrate to SpO_2 of 92-95%

Controls

I:E=1:3 TI	100ms P-ramp	25% ETS	30 cmH_2O Plimit (alarms at 40)		I:E>1:4 TI	50ms P-ramp	40% ETS	40 cmH_2O Plimit (alarms at 50)

(re-titrate with every Rate change)

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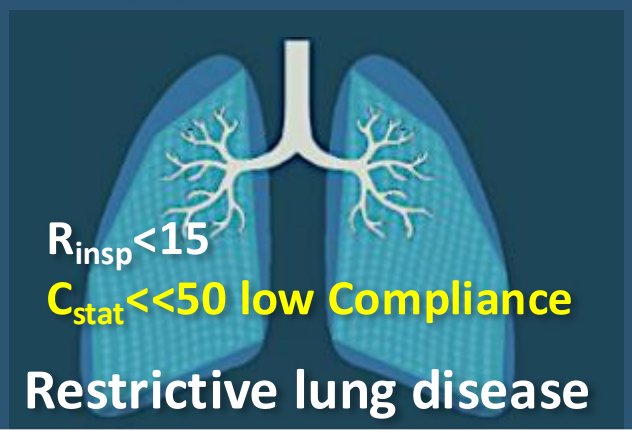
SIMV+ troubleshooting for HAMILTON-TI

If **Pressure limitation** press **Alarms**; increase upper limit of Pressure (max 70) to allow VTE while troubleshooting

Ensure patient is sedated and ETT suctioned and patent.

- if high pressures resolved, return Pressure limit to normal levels
- If high pressures continue, touch the waveforms then **Graphics** then **Dynamic Lung**



R_{insp}<15
C_{stat}<<50 low Compliance

Restrictive lung disease

Seek & treat
-chest causes (pneumothorax)
-abdominal causes (distention)

Protective lung strategy ***PLUS***

- ↓**VTe** by 15% and
- ↑**Rate** by 20% to maintain MinVol

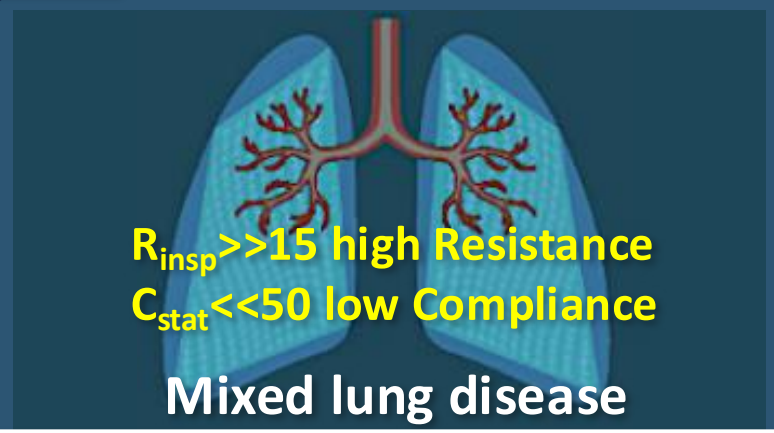
R_{insp}>>15 high Resistance
C_{stat}>50

Obstructive lung disease

Seek & treat
-blocked/kinked/dislodged tube/ wet circuit
-bronchospasm

Obstructive lung strategy ***PLUS***

- ↓**Rate** so no breath-stacking visible on flow/time waveform (min 5)
- **I:E ratio** ≥ 1:4



R_{insp}>>15 high Resistance
C_{stat}<<50 low Compliance

Mixed lung disease

Obstructive lung disease plus *EITHER*
-gas trapping *OR*
-Restrictive lung disease

If gas trapping, follow high Resistance trouble shooting. If BP drops, disconnect patient & manually decompress chest.

Discuss with PIPER consultant 1300 137 650

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NIV strategies for HAMILTON-TI

NIV
Apnea backup mode

neonatal circuit if
<5 year-old/20kg

Neonate.

NIV

Start Ventilation

Protective lung strategy
(type-1 respiratory failure)

Obstructive lung strategy
(type-2 respiratory failure)

PEEP/CPAP

titrate using PEEP/O_2 scale

5	5	8	8	10	10	10
30	40	40	50	50	60	70

to SpO_2 >94%

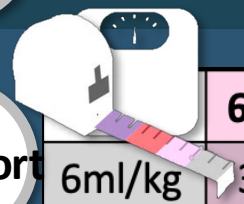
5

Oxygen

titrate to SpO_2 >94%

ΔPsupport

Start at 5 and titrate ΔPsupport
to ensure enough VTe (range 6-8/Kg IBW).
Titrated to resp rate, CO_2/pH.



	6kg	8kg	10kg	12kg	14kg	16kg	18kg	20kg
6ml/kg	36	48	60	72	84	96	108	120
8ml/kg	48	64	80	96	112	128	144	160

Controls

30cmH$_2$O Plimit (alarm at 40)	30cmH$_2$O **Plimit** (alarm at 40)
100ms P-ramp	50ms **P-ramp**
35% ETS	40% **ETS**

Discuss with PIPER consultant 1300 137 650

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NIV strategies for HAMILTON-T1

neonatal circuit

nCPAP
nasal CPAP

nCPAP can only be used up to 6kg (4 months)

sizing bonnet/mask/prongs

Neonate.

NIV

Start Ventilation

7-8 — **PEEP/ CPAP**

Titrate to SpO_2 of 94% — **Oxygen**

Monitor respiratory rate, work of breathing and capillary blood gases.
If significant nasal blockage/mouth breathing, try full-face mask NIV.

Discuss with PIPER consultant 1300 137 650

George Douros 2025. Based on SCV guidelines