

AVEA® ventilator general guidelines for noninvasive adult ventilation



Ventilator setup

- The patient-ventilator interface must be a mask with no bleed holes.
- Set up the ventilator with the circuit as per the operator manual.
- Activate Leak Compensation in the setup menu.
- Breath type—Pressure Control breath type is generally preferred due to the flow response time. This includes Pressure Control or Pressure Support breath types.
- Select the desired mode (*Assist/Control, SIMV or PSV/CPAP*). If PSV/CPAP is used, verify the apnea settings. In general, comfort objectives and safety factors will dictate the mode used.
- Set the Inspiratory Pressure/Pressure Support level. On the AVEA® ventilator, the set pressure is ABOVE PEEP baseline. Many BiPAP devices have an inspiratory pressure setting equal to the peak inspiratory pressure.
- Set the maximum Inspiratory Time desired. On adult patients, this may be .75 seconds to 1.5 seconds, depending on the patient's breathing pattern.

Note: *On Pressure Support breaths, this value is PSV TMAX, found in advanced settings within the Pressure Support control.*

- Set Bias Flow to 5 L/min.
- Adjust trigger to patient comfort and ease of assisted breaths. Due to the large leaks associated with noninvasive ventilation, consider using the pressure trigger value and set flow trigger to the maximum value. Start at $-2 \text{ cmH}_2\text{O}$ and adjust as needed.

Adjustments during ventilation

- To optimize patient synchrony, use the Flow Cycle control found in advanced settings within the Inspiratory Time setting in Pressure Control, or within Pressure Support. Start at a 25% setting and increase this value to synchronize with the patient's expiratory efforts.
- Inspiratory Rise Time—Start with a rapid rise time at 1. Rise time is found in advanced settings within the Inspiratory Pressure setting in Pressure Control, or within Pressure Support. A faster rise time may better meet the inspiratory demands of the patient. Adjust this control based on clinical observation.

Monitoring considerations

- Patients using noninvasive ventilation may require frequent changes to meet their needs, as mask seal will vary with activity and level of respiratory distress.
- Volume measurements with large leaks may be unreliable. Adjust pressure alarms to appropriate values that will alert you when there are changes.

Suggested reading

Chatburn R. Which Ventilators and Modes Can Be Used to Deliver Noninvasive Ventilation? *Respir Care* 2009;54(1):85–99.

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