

Table 4: Types and Modes of Positive-Pressure Ventilation

<u>Type</u>	<u>Mode</u>	<u>Description</u>
Conventional positive-pressure ventilation: tidal volume preset (volume or time cycled)	Assisted mechanical ventilation (AMV) or assist/control (A/C)	All breaths machine delivered at preset tidal volume; patient can increase rate (and thus minute ventilation) by triggering additional machine breaths if desired
	Controlled mechanical ventilation (CMV)	All breaths machine delivered at preset tidal volume; fixed rate (and minute ventilation) cannot be increased by patient effort
	Intermittent mandatory ventilation (IMV)	Fixed rate of machine-delivered, set-tidal-volume breaths; patient can also breathe spontaneously between machine-delivered breaths if desired
	Synchronized intermittent mandatory ventilation (SIMV)	As in IMV, except that machine-delivered breaths are initiated only after patient exhales, preventing “stacking” on spontaneous breaths
Conventional positive-pressure Ventilation: peak pressure preset (flow or time cycled)	Pressure support ventilation (PSV)	Patient breathes spontaneously and determines rate; tidal volume is determined by inflation pressure used and patient’s lung-thorax compliance; minute ventilation varies, depending on inflation pressure used
	Pressure control ventilation (PCV)	Inflation pressure, inspiratory time, and rate are Fixed, with tidal volume (and thus minute Ventilation) determined by patient’s lung-thorax compliance

Table 4, continued:

	Airway pressure release ventilation (APRV)	Patient breathes spontaneously at high level or continuous positive airway pressure (CPAP), which is intermittently dropped to a lower level to allow brief passive exhalation to a lower lung volume; minute ventilation determined by patient's spontaneous rate and inspiratory effort plus CPAP levels used and frequency of pressure release. Also can be used in patients who do not breathe spontaneously.
High-frequency ventilation	High-frequency positive-pressure Ventilation (HFPPV)	Preset (usually small) tidal volume, as with AMV, CMV, or IMV, at cycling frequencies of 60 to 110 breaths/min
	High-frequency jet ventilation (HFJV)	Bursts of high-pressure (jet) gas flow directly into patient's trachea at rates of 60 to 150 bursts/min; delivered tidal volume augmented by entrainment from a second, humidified gas source; tidal volume and minute ventilation are unknown
	High-frequency oscillatory ventilation (HFOV)	Oscillation of gas in the respiratory tract at 600 to 1200 cycles/min (10-20 Hz) with both inspiration and expiration active