

AVAPS Pearls

- Intelligent newer modality of pressure-control ventilation called the average volume-assured pressure support (AVAPS).
- This mode doesn't contain an inspiratory positive airway pressure (IPAP) setting. Instead, it has been replaced with a target tidal volume (VT) setting.
- Rather than having one fixed IPAP setting, the AVAPS mode has the capability to set a range of values for the IPAP, a maximum and a minimum IPAP.
- The pressure-support is no longer fixed as the IPAP changes by itself within the set range. The ventilator does this based on the targeted tidal volume, a pre-set value. It uses a feedback loop to either increase or decrease the inspiratory pressure from breath to breath in order to ensure the pre-set tidal volume is delivered.
- Patient-ventilator dyssynchronization is prevented as the inspiratory pressure changes smoothly, thus improving patient comfort.
- The tidal volume also varies with each breath but the machine ensures that the average targeted tidal volume over the course of one minute is achieved.
- In AVAPS, the expiratory positive airway pressure (EPAP) is fixed; however, the auto-titration mode of non-invasive ventilation, 'average volume-assured pressure support-auto-titrating EPAP'(AVAPS-AE) regulates EPAP as well.
- The ventilatory settings in AVAPS mode are typically predetermined, based on the patient's condition and his clinical assessment, and are then manually set on the ventilator.
 - The target tidal volume is set to 8 ml/kg of ideal weight and adjusted based on the patient's pathology.
 - The maximal IPAP value is generally fixed at 20-25 cm H₂O
 - The minimal IPAP value equals to EPAP + 4 cm H₂O. The value of the minimal inspiratory pressure is no less than 8 cmH₂O and commonly higher.
 - The respiratory rate is set at 2-3 BPM below the resting respiratory rate.
- It takes several minutes for the AVAPS to attain the targeted tidal volume. IPAP automatically increases or decreases in synchronization with changes in the patient's respiratory effort, lung compliance, or extrinsic lung resistance.