The Respiratory Therapist Said My Patient is Breath Stacking... Now What Do I Do?

1) What Is Breath Stacking and When Does It Occur?
   In volume assist control, the ventilator will attempt to deliver a full breath (i.e., tidal volume) every time a patient starts to inhale. If the patient initiates a breath before full exhalation of the preceding one (due to their own intrinsic drive to breathe), the machine senses the inhalation effort and delivers another breath. This results in a larger than desired tidal volume and higher peak inspiratory pressures.

   You will most commonly see this in patients receiving low tidal volumes as part of lung protective ventilation.

2) What Does It Look Like on the Ventilator?

3) Is This a Problem That Needs to Be Addressed?
   It depends:
   - It is not a problem if: Breath stacking is sporadic (e.g., once every 5 breaths) and/or the patient does not have severe oxygenation problems
   - It is a problem if: Breath stacking is frequent (e.g., every breath or every other breath) and/or the patient has severe oxygenation problems. This needs to be addressed

4) A Step-wise Approach to Management
   - Step 1: Increase sedation with propofol and fentanyl to decrease respiratory drive
   - Step 2: Increase the inspiratory flow rate
   - Step 3: Add an end-inspiratory pause (0.25-0.3 second)
   - Call for Help if Steps 1-3 Do Not Fix the Problem
   - Step 4: Consider increasing tidal volume as long as the plateau pressure < 30 cm H₂O
   - Step 4: Initiate neuromuscular blockade

Critical Care Skills for Non-Critical Care Providers
Breath Stacking