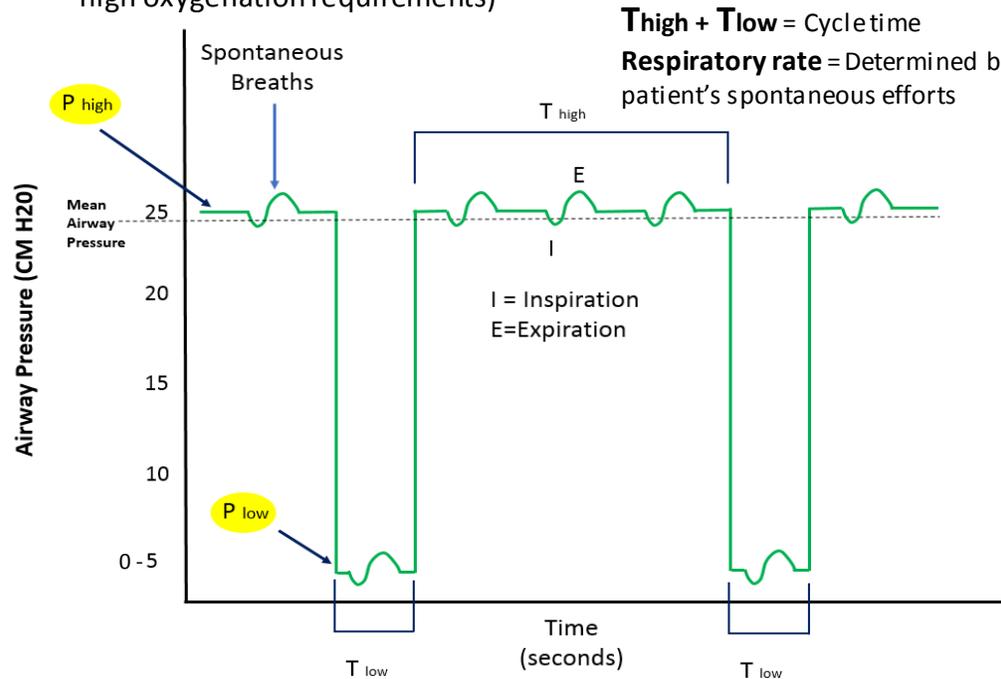


# APRV - Overview

Airway pressure release ventilation (APRV) uses prolonged periods of high continuous positive airway pressures interrupted by brief episodes of pressure release to a lower pressure

- Intended as a rescue therapy for severe ARDS (low lung compliance with high oxygenation requirements)

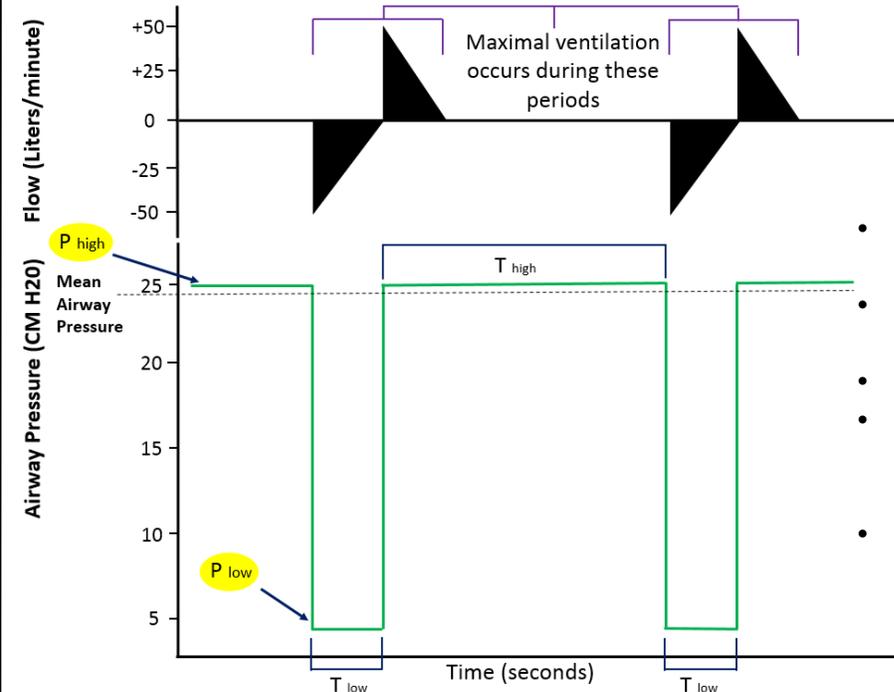
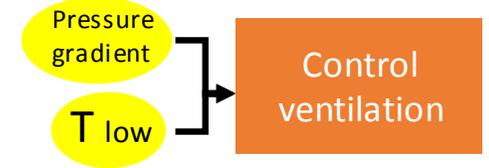


## Improving oxygenation



- Increase P(high) and T(high) to increase Mean airway pressure (pay attention to hemodynamics as increased thoracic pressures can decrease cardiac output)
- Increase Fio2
- Ensure minimal de-recruitment (decrease T(low) and/or increase P(low))

## Improving Ventilation



- Increase pressure gradient: P(high) – P(low) to increase alveolar volume
- Adjust T(low) to allow for adequate expiratory time
- Increase frequency of pressure release
- Titrate sedation to allow for spontaneous breathing (allows for ventilation even during T high)
- Minute ventilation from spontaneous breathing efforts is vital to prevent respiratory acidosis (sedation requires close monitoring)

## Description

- Two levels of airway pressure: P(high) and P(low)
- P(high)** set at desired plateau pressure (hence **dictates arterial oxygenation** and risk of alveolar baro/volutrauma)
- P(low)** set to prevent de-recruitment of alveoli during pressure release
- T(high)** (>85% of cycle time) determines time spent at P(high) to maintain alveolar recruitment
- T(low)** determines time spent at P(low), very brief to prevent alveolar de-recruitment

**Advantages:** Alveolar recruitment and improved oxygenation, preservation of spontaneous breathing, lower sedation requirements

**Disadvantages:** Risk of volutrauma, increased work of breathing and energy expenditure, consistently increased intrathoracic pressures may adversely affect hemodynamics

## Suggested Initial settings

P(high) = Plateau pressure (Keep <30cmH2O)

P(low) = 0-5 cmH2O

T(high) = 4.5 – 6 seconds

T(low) = 0.5-0.8 seconds

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