

Flow monitoring



How can I identify and treat patients with obstructive airway disease?

Peak inspiratory pressure (PIP) monitoring

Flow monitoring

Intrinsic positive end-expiratory pressure (PEEP) monitoring



Keep PIP < 35 cmH₂O

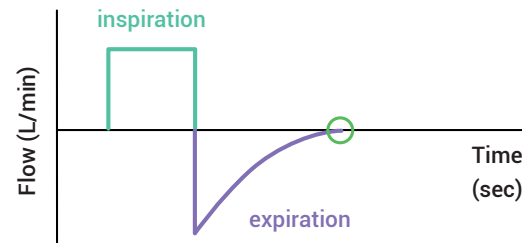
- Decrease V_T
- Decrease RR
- Increase flow
- Bronchodilators
- Steroids

Permissive hypercapnia may be necessary.

Examining the flow-time waveform on the ventilator can help manage patients with obstructive airway disease.

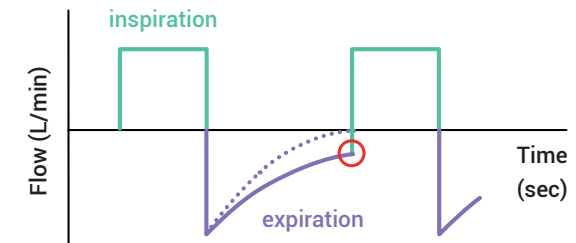
Identify obstructive airway disease

Flow-time waveform—normal



As long as the expiratory limb reaches zero, the lung is fully deflated and the patient is not air trapping.

Flow-time waveform—air trapping



A shift in the waveform, such that the expiratory limb does not return to zero, indicates air trapping.

Treat obstructive airway disease

Decrease V_T

Reducing volume, in reduces volume needed to get out.

Decrease RR

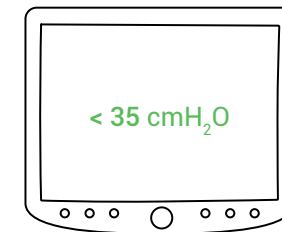
Reducing RR allows more time to exhale.

Increase flow

Increasing flow shortens inspiration time and therefore increases expiration time.

Bronchodilators

Steroids



Permissive hypercapnia

Remember, reducing V_T or RR may increase PaCO₂ and you may need to tolerate hypercapnia in order to treat these patients; just be sure to monitor pH and PaCO₂ on case-by-case basis.