Advantages

- Reduced need for sedation
- Improved mucociliary clearance
- Reduced intubation rate
- Reduced rate of nosocomial infections

Recommend treatment (level A) for COPD & cardiopulmonary edema

**Indications**

- Acute hypoxemic respiratory failure
  - Oxygenation failure due to intrapulmonary shunt
  - e.g. cardiopulmonary edema
  - e.g. pneumonia

- Acute hypercapnic respiratory failure
  - Respiratory failure with ventilatory insufficiency, e.g. decompensated COPD

**Cut-off criteria**

Re-evaluate treatment if symptoms are observed

- Inefficient oxygenation
- Advanced deterioration of consciousness
- Extreme agitation
- Uncontrollable apnea
- Aspiration

**Contraindications**

- Apnea or cardiac arrest
- Hemodynamic instability
- Acute life-threatening hypoxia
- Extreme agitation
- Prolonged or uncontrollable confusion (unrelated to hypercapnia)
- Increased risk of regurgitation and aspiration
- Acute or imminent airway obstruction

**Success criteria**

- Improved oxygenation
  - \( \text{SpO}_2 > 90\% \)

  Improvement of ventilatory status

- Decrease in respiratory and heart rate
- Decrease in respiration rate ≥ 20%
- Less use of accessory muscles
- Improved alveolar ventilation
- Improved \( \text{eCO}_2 \) (decreased \( \text{PaCO}_2 \))
- Subjective improvement
- Improvement in the patient’s level of consciousness