

Lightning Learning: Non-Invasive Ventilation (NIV)

STOP!

Patients who are in acute hypercapnic/type 2 respiratory failure (defined as pH <7.35, PCO₂ >6.0 on an arterial blood gas) may need NIV to stabilise their situation.

Requiring acute NIV is associated with up to **50% mortality within 1 year.** ⁽¹⁾

Consider referral to ICU when...

- SpO₂ <88% with maximum oxygen
- Arterial pH <7.25
- Haemodynamic instability
- Inability to protect airway

Remember to discuss and document an escalation plan and resuscitation status before starting NIV.

LOOK

Treat reversible causes such as a COPD exacerbation, if able give trial of nebulisers and steroids and repeat ABG to see if NIV is still indicated.

When starting NIV:

NIPPY 3+ pressure support mode settings (apply siltape):

- IPAP 10.0, EPAP 4.0 (cmH₂O)
- Back-up rate 12 BPM
- Ti 1.0, alarms 'Hi' 160, 'Lo' 20

Increase IPAP by 2-2.5 every 5 mins to max 20, as tolerated.

Connect oxygen and nebuliser tubing if required.

Repeat ABG after 30 minute trial.

LEARN

- ➔ NIV is an Aerosol Generating Procedure.
- ➔ Offer lidocaine for ABGs.

References & Further Reading

1. Guideline for ventilatory management <https://bit.ly/3IHmJz0> (BTS)
2. Use of NIV for COVID-19 patients <https://bit.ly/3dDkGcF> (BTS)
 - Management flowchart for AHRF <https://bit.ly/3m4kcz0> (UHL)

