



CLINICAL GUIDELINE

Using Continuous Positive Airway Pressure (CPAP)

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Important Note:

The Intranet version of this document is the only version that is maintained. Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Using CPAP (Continuous Positive Airway Pressure)

Patients must be conscious, breathing spontaneously with an adequate gag and cough reflex.

Indications

- ✓ Hypoxaemia without hypercarbia (ie type I Resp Failure) despite high flow O₂ (e.g severe pneumonia)
- ✓ Pulmonary oedema not responding to high flow O₂ and diuretics

Contraindications:

- Facial trauma
- Reduced conscious level
- Type II resp failure
- Raised intracranial pressure
- Undrained pneumothorax
- High risk of aspiration
- Recent tracheal or oesophageal anastomosis

Benefits:

- ↓ work of breathing
 - ↓ left ventricular preload and transmural pressure
 - ↓ relative afterload (without altering myocardial contractility so ↑ ejection fraction. Patients with worst ventricular dysfunction gain most significant ↑ in stroke volume)
 - ↑ gas exchange area and ↑ lung compliance
 - ↓ intrapulmonary shunt
- Allows resp muscle rest in inspiratory phase

Commencing CPAP:

- Check ABG on commencing or on any deterioration in respiratory, cardiovascular or neurological function.
- Continuous SpO₂ monitoring
- Set up equipment with most appropriate sized mask (use facial gauge) - see below
- Explain therapy to patient
- Set CPAP to 5cm H₂O + give 100% O₂ through CPAP circuit
- Aim SpO₂ >90%, continue CPAP as req'd and tolerated
- If SpO₂ doesn't improve, ↑ CPAP to 7.5cm H₂O (blow off safety valve 12.5cm H₂O)
- If SpO₂ doesn't improve, ↑ CPAP to 10cm H₂O (blow off safety valve 15cm H₂O)
- Consider A-line and consider NG tube if gastric distension
- If condition improves, withdraw CPAP if SpO₂ can be maintained ≥90% with 60% O₂

Equipment required for use of the Vygon CPAP system:

- ✓ Medi-meter 30 oxygen flow meter and tubing
- ✓ Vygon manometer and tubing
- ✓ Vygon CPAP device
- ✓ Face mask (appropriate size) and strapping

1. Insert CPAP device into facemask.
2. Connect tubing from the manometer to the transparent port on the CPAP device.
3. Connect tubing between the flow meter and the green port on the face mask.
4. Disconnect oxygen supply tubing from one of the ports on the rear of the pendant.
5. Plug the flow meter into the oxygen port.
6. Strap the mask to the patient.
7. Gradually open the flow meter until a flow rate of 15 litres/ min is reached, to detect any leakage.
8. Identify any places where the mask is leaking, then adjust the straps or inflate the cuff on the mask.
9. Gradually adjust the flow meter until the desired pressure is obtained.

Once the desired pressure is obtained, it is possible to connect a capnograph to the transparent port on the CPAP device in place of the manometer.