Oxygen Concentrator

Oxygen concentrators produce 85–95.5% oxygen from ambient air using two sieve beds.

**USE FOR**
Nearly all sick infants may benefit from oxygen therapy.

**STANDARD OF CARE**
Target SpO₂ is
- 90–95% for patients on O₂
- 90–100% for patients off O₂

**COMPLICATIONS**
- Hypoxia
- Hyperoxia
- Nasal blockage
- Necrotic septum

Target saturations for infants on oxygen are 90–95%. Any amount of oxygen given without appropriate monitoring of oxygen saturations can cause harm.

**ASSESSMENT & PREPARATION**

1. **TURN ON DEVICE**
   Plug in concentrator and turn on device.
   Allow to run for 5 minutes OR until indicator light shows appropriate concentrations of oxygen are reached.

2. **PREPARE DEVICE**
   Adjust regulators to desired oxygen flow level.
   - A. Connect correctly sized nasal prongs or tubing to oxygen port.
   - B. Check that flow comes out of nasal prongs.

3. **PREPARE PATIENT**
   Follow hand washing protocol, wear gloves if needed.
   - Assess nasal patency; suction if secretions are present.
   - Insert nasal prongs and place gauze under tubing to protect skin.
   - Secure tubing with tape.

4. **MONITOR PATIENT**
   Monitor using a pulse oximeter.
   - Adjust regulator flow up and down. Patient saturation goal is 90–95%.
   - Assess RR, HR, work of breathing, and nostril patency while on oxygen therapy.
   - If oxygen flow is more than 1 L/min and saturations less than 90%, consider switching to CPAP.

**DISINFECTION & INFECTION PREVENTION**

- Clean hands with soap and water or alcohol before and after handling materials that will be used on patients.
- Begin reprocessing oxygen tubing according to ward guidelines immediately after use.
- Clean oxygen concentrator unit housing and regulators using gauze and 70% alcohol after every use.

Refer to the General Infection Prevention Module.
Oxygen Concentrator

Units should be located 30–35 cm away from the nearest wall to ensure that air can freely flow into the oxygen concentrator.

**DAILY MAINTENANCE**

Always wipe the oxygen concentrator with alcohol using gauze or a cotton swab before first use and between patients.

**PREVENTIVE MAINTENANCE**

Fine particle and gross particle filters should be checked weekly.

Oxygen concentrator should be turned on and allowed to run for at least 15 minutes every week if it has not been in use.

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**If the oxygen concentrator is not turning on**

- Check that the power cable is plugged into a socket.
- Check that socket is turned on and has electricity.
- Push the reset button.

**If the oxygen concentrator is turning on but there is no flow**

- Connect nozzle to oxygen port.
- Check port for debris or blockages.
  - If debris is seen, clean using a cotton bud or forceps wrapped in gauze and soaked in alcohol.

**If the low oxygen concentration alarm is on**

- Check the gross particle filter for dust and debris.
  - If dirty, replace filter with spare, clean filter.
  - Check if set flow rate (L/min) is within maximum machine specifications.
  - If the set flow rate exceeds capacity, lower flow rate to within capacity limits.

**When it’s time to clean the filter**

- Turn off the device, then remove the back of the unit.
  - If available, replace dirty filters with clean ones and turn back on for use.

**Fine particle filter:**

Do not wash this filter in water.

It should be checked weekly by the maintenance department.

**Gross particle filter:**

Place in lukewarm, soapy water. Rinse with clean water and place in shaded area until completely dry.

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**CONTACT A TECHNICIAN OR MAINTENANCE DEPARTMENT IF DEVICE CONTINUES TO NOT WORK PROPERLY AFTER ADDRESSING THE COMMON ISSUES**