

COVID CARE COMPANION

# OXYGEN CONCENTRATOR

Guidelines for using the  
**Oxygen Concentrator**  
**For Covid-19**



For emergencies or any information, call  
your healthcare provider or **helpline 1075**



## What is an Oxygen Concentrator (OC)?

It is a machine that utilizes room air, concentrates its oxygen, and delivers it at a specific flow rate to a patient who has low oxygen levels in their blood.



## How do Oxygen concentrators work?

Oxygen concentrators draw in room air through filters that remove dust, bacteria and other particles. They compress the air and deliver it at a higher pressure to patients through a nasal cannula or an oxygen mask. Pressure ranges from 0.5 to 5 Litres of oxygen/minute.

# When do you use an oxygen concentrator for COVID-19 patients?

An oxygen concentrator should be used in consultation with a medical professional.

Oxygen therapy is recommended for moderate and severe COVID-positive patients who have low oxygen levels. Unnecessary and inappropriate use of oxygen can be harmful for patients, and should not be used for patients with normal oxygen levels ( $SpO_2$  96 or above) . An oxygen concentrator can help treat mild to moderate cases of COVID-19. Consult a doctor before starting to use it.

## Please note the following principles for use:

- 1 For any patient who has mild breathing difficulty and low oxygen saturation (as defined below), and does not have access to any other oxygen devices, an oxygen concentrator may be used.
- 2 For patients with oxygen saturation ( $SpO_2$ ) between 90-94 with mild COVID-19 symptoms, using an oxygen concentrator will help in treatment.
- 3 Please note: patients with oxygen saturation ( $SpO_2$ ) <90 will require a source of oxygen (cylinder, piped oxygen supply) which provides oxygen at a higher pressure and may not improve while using an oxygen concentrator .
  - For a patient with oxygen saturation ( $SpO_2$ ) of 87- 90: the concentrator is useful if the  $SpO_2$  rises and maintains to a level between 92-94.
  - If the patient's oxygen saturation continues to go down, the patient needs to go to a hospital with advanced treatment services according to established protocols.
  - Observe the patient for common signs of decreasing oxygen saturation levels: changes in the color of skin, confusion, cough, fast heart rate, rapid breathing, shortness of breath, slow heart rate, sweating, or wheezing.

# What to do while using the oxygen concentrator

## Overall SpO<sub>2</sub> targets

- If the patient had a mild breathing problem: aim for SpO<sub>2</sub> of 94 (many patients will start improving with SpO<sub>2</sub>>92)
- For COPD patients or those on long- term oxygen therapy: aim for SpO<sub>2</sub> of 88-92
- For any pregnant patients or those with known heart disease: while aiming for SpO<sub>2</sub> of 95+, please consult a doctor to understand the requirement.

## If initial saturation (SpO<sub>2</sub>) is 81-85%

Immediately start the patient at 5L per minute of oxygen by a nasal cannula, and if saturations- does not come up above 90% within 15 minutes, refer for more advanced treatment.

## If initial oxygen saturation (SpO<sub>2</sub>) is 86-93%

Start the patient at 2L per minute of oxygen by nasal cannula and gradually increase/ titrate upwards to a maximum of 5L per minute until saturations of 92-94% are reached.

**For all patients: record oxygenation levels at 15 minute intervals if possible until stabilized. After levels are stabilized, record patient oxygen levels at 4 hour intervals.**

**If there is no pulse oximeter** to determine oxygen saturation and a doctor determines clinically appropriate, the safest option is to start the oxygen starting at 5L and keep decreasing the level down as needed



Patients can be taken off a concentrator **if their oxygen saturation is consistently >94** and they are not experiencing breathlessness at rest.

# How can you use the Oxygen Concentrator?

## Preparing the Machine/Getting Started

- Place the oxygen concentrator so it has 1-2 feet of space around it. It should not be kept right next to a wall or furniture.
- Connect the nasal cannula to the oxygen outlet on the concentrator.
- Unscrew the cover of the humidifier bottle, and add purified or distilled water. Make sure the water level is between minimum and maximum indicators. Replace the water daily.
- Insert the humidifier into the elastic strap on the front of the concentrator, and connect the nasal cannula to the humidifier bottle outlet.
- Connect the oxygen hose with one end in the oxygen outlet on the concentrator and the other end in the humidifier adapter on the humidifier bottle.
- Plug the concentrator into a power supply and turn on by pressing the power switch.
- The compressor will start and green, yellow, and red LEDs will turn on one by one, and then turn off and on repeatedly. The compressor is ready for use only when the green LED light stays on. This process can take up to 30 minutes.
- Turn the flow meter knob until the ball floats at the marked flow line on the flow meter (turning clockwise will reduce the flow, and turning counterclockwise will increase the flow).

# Putting the mask/ tubing onto the patient

Check that the tubing does not have any bends and can provide a constant flow of oxygen.

## For lower oxygen levels,

Fit the oxygen mask over the patient's nose and mouth. Put the elastic over their head or around their ears and tighten the mask until it is comfortable. Make sure that there are no gaps around the edge of the mask.

## For higher oxygen levels,

Insert one one prong into one nostril. Place the connected tube over the ears and tighten the tube under the chin so it stays in place.

# Maintenance and Safety Considerations for Using Oxygen Concentrators

- Avoid using long extension tubing to the nasal cannula (should not be more than 6 feet length).
- Do not use device near open flames, sparks, or water (the unit must be kept dry).
- Do not smoke in the vicinity of the oxygen concentrator.
- To check the concentrator, while the concentrator is running, plug the oxygen outlet with your finger and confirm that the 'pressure safety valve' opens after 5 seconds, gas is released, and that the pressure valve closes properly.
- Make sure that the concentrator is connected to a continuous power source as much as possible. Connect the device to a UPS if available. Remember the concentrator will turn off if there is a power cut.
- To clean the cabinet, turn off the power, unplug the device, and use a soft dry cloth or damp sponge to clean the outside of the device. Do not use any flammable cleaning solvents or allow liquids to enter the device.
- To clean the cabinet filter, remove the locking screw on the left side of the concentrator and remove and wash with water. Allow the locking screw to fully dry before placing it back in the concentrator. Do this 1x weekly.
- To clean the humidifier bottle, wash it with a mild detergent, rinse it in water, and allow it to dry completely before reusing. You can also immerse it in a disinfectant solution and rinse and dry completely before returning to use.

**Store the concentrator in a cool, dry place if it is not in use.**