

## Oxygen Delivery Methods

Room air is around 21% oxygen. Oxygen is used to help during times of tissue hypoxia, and when the body requires more than the normal 21%. The patient's oxygen needs will determine which delivery method should be used. Knowing if the patient has a condition that retains CO<sub>2</sub> or has a respiratory disease will also influence which method is used. It is important to remember that "oxygen is a medication" and an order needs to be written by the health care provider, if it is going to be used.



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### Nasal Cannula

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Nasal cannulas are the most widely used method of delivering oxygen. At 1L/min nasal cannulas deliver an FiO<sub>2</sub> of 24%. Every 1L you can add 4%, all the way to 6L/min for an FiO<sub>2</sub> of 44%. Oxygen should be humidified if you will be administering greater than 3L/min.

### Simple Face Mask

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Simple face mask can deliver an FiO<sub>2</sub> of 40% to 60% oxygen with a flow of 6 to 12L/min. It can be used in patients that are in mild respiratory distress. If a simple mask has a reservoir bag on it, it is called a partial rebreather mask. Partial rebreather masks deliver an FiO<sub>2</sub> of 50% to 60%.

### Non-Rebreather Mask

#### Non-Rebreather Mask

This mask has a valve on the exhalation port and between the reservoir bag and mask. The valves prevent room air from coming into the system. This method delivers an FiO<sub>2</sub> up to 95% at 8-15L/min. Make sure that the reservoir remains at least ½ full on inspirations.

### Venturi-Mask

#### Ventura with Venturi Mask

Venturi Mask allows providers to set a specific FiO<sub>2</sub> to be delivered to the patient. Venturi masks have, what is called, an air entrainer that allows oxygen to be mixed with the room air. This can deliver a precise FiO<sub>2</sub> to the patient ranging from 24% to 60%.

## Safety Precautions

### Oxygen In Use Sign

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Make sure your agency has proper signs hanging, informing visitors of the risk of having an open flame. Instruct people not to smoke near areas where oxygen is in use.

### No Electrical Sparks

#### No-sign at Electrical Sparks

Oxygen is a highly combustible gas that can cause an explosion in certain situations. Make sure that the bag valve mask is removed from the bedside before a shock is delivered during resuscitation efforts.

### **Six Feet Away from Open Flames**

#### [Six Foot Tape-measure From Flames](#)

Educate patients not to smoke when using oxygen and to stay away from open flames. Oxygen is very combustible when introduced to an open flame.

## **Nursing Considerations**

### **Dry Nasal and Upper Airway Mucosa**

#### [Dried out Nasal and Upper Airway Mucosa](#)

Oxygen can dry out mucosal membranes. If patients will be on oxygen for an extended time or high concentrations will be given, a humidifier should be introduced into the system to help decrease airway irritation.

### **Skin Irritation**

#### [Skin Irritation](#)

Skin breakdown can occur around the ears and in the nostril (nasal cannula use). It is important to assess for skin breakdown while performing a daily assessment. Gauze can be wrapped around the tube or strap to decrease pressure and irritation.

### **Home Education**

#### [Home-use Educator](#)

Teach the patient to monitor their oxygen tank level at home and when to notify the agency for a refill. It is important to avoid an extra long oxygen tube, because this can be a tripping hazard for the patient and others. Also educate the patient on how to secure the oxygen cylinder and to always have it in an appropriate holder.