

Classification

Gas

Prehospital Indications

Multiple provider impressions: hypoxia SPO₂ <94% on room air, respiratory or cardiac arrest, shock, anaphylaxis, traumatic brain injury, carbon Monoxide exposure/poisoning/toxicity, suspected pneumothorax

Other Common Indications

Chronic hypoxia in patients with restrictive lung disease

Adult and Pediatric Dose

Delivery Device	Flow Rate	% Delivered
Nasal Cannula	1-6 L/min	22-44%
Simple Face Mask	8-10 L/min	40-60%
Face Mask with O ₂ Reservoir	15 L/min	90%
Bag-Mask with O ₂ Reservoir	15 L/min	90%
ET with Bag with O ₂ Reservoir	15 L/min	100%
ET with T-Tube	15 L/min	70%
Supraglottic Airway	15 L/min	90%

Mechanism of Action

Oxygen is a tasteless, odorless gas transported by hemoglobin in the blood to organ tissues. It is required for the breakdown of glucose into a useable energy form (aerobic metabolism). Therapeutic oxygen administration increases the oxygen concentration in the alveoli, which in turn increases the oxygen saturation of available hemoglobin.

Pharmacokinetics

Onset is immediate; duration is < 2 min

Contraindications

None

Adverse Effects

High flow O₂ (100%) by mask may produce a 30% decrease in coronary blood flow in as little as 5 min, and may decrease the efficiency of nitroglycerin.

In patients with COPD or other chronic lung disease, high inspired O₂ concentration may decrease respiratory drive and cause CO₂ retention.

O₂ will dry mucus membranes.