

► **Table 100.1** Indications, disadvantages and estimated  $F_{iO_2}$  for oxygen administration techniques and oxygen flow.<sup>1,2,3</sup>

Oxygen administration technique	Oxygen flow	$F_{iO_2}$	Indications	Disadvantages
<b>Oxygen cage</b>	Variable	40-60%	<ul style="list-style-type: none"> <li>▶ Emergency or long-term technique</li> <li>▶ Severely dyspneic patients that do not tolerate manipulation</li> </ul>	<ul style="list-style-type: none"> <li>▶ Oxygen waste</li> <li>▶ Risk of hyperthermia</li> <li>▶ Limited access to the patient</li> <li>▶ Rapidly decreasing <math>F_{iO_2}</math> when cage is opened</li> </ul>
<b>Flow-by oxygen</b>	2-5 L/min	25-50%	<ul style="list-style-type: none"> <li>▶ Emergency technique</li> </ul>	<ul style="list-style-type: none"> <li>▶ Constant supervision</li> <li>▶ Patient intolerance</li> <li>▶ Waste of oxygen</li> <li>▶ Low <math>F_{iO_2}</math> (due to constant manual application to mobile patients)</li> </ul>
<b>Face mask</b>	8-12 L/min	35-60%	<ul style="list-style-type: none"> <li>▶ Emergency technique</li> <li>▶ For patients with suspected increased intraocular or intracranial pressure</li> </ul>	<ul style="list-style-type: none"> <li>▶ Constant supervision</li> <li>▶ Patient intolerance</li> <li>▶ Carbon dioxide rebreathing (tight-fitting mask)</li> <li>▶ Sialorrhoea</li> </ul>
<b>Oxygen collar</b>	1-2 L/min	30-40%	<ul style="list-style-type: none"> <li>▶ Long-term technique</li> </ul>	<ul style="list-style-type: none"> <li>▶ Patient intolerance</li> <li>▶ Oxygen leakage</li> <li>▶ Risk of hyperthermia</li> <li>▶ High humidity and condensation</li> <li>▶ Carbon dioxide accumulation</li> </ul>
<b>Nasal prongs</b>	50-200 mL/kg/min	25-50%	<ul style="list-style-type: none"> <li>▶ Emergency or long-term technique</li> </ul>	<ul style="list-style-type: none"> <li>▶ Patient intolerance</li> <li>▶ Easily dislodged</li> <li>▶ Should be avoided in patients with suspected increased ocular or intracranial pressure</li> </ul>
<b>Nasal catheters</b> (unilateral or bilateral)	50-200 mL/kg/min	40-80%	<ul style="list-style-type: none"> <li>▶ Long-term technique</li> </ul>	<ul style="list-style-type: none"> <li>▶ Patient intolerance or discomfort</li> <li>▶ Nasopharyngeal trauma or irritation</li> <li>▶ Potential epistaxis</li> <li>▶ Potential oxygen toxicity (<math>F_{iO_2} &gt; 60\%</math> for prolonged periods)</li> <li>▶ Should be avoided in patients with suspected increased ocular or intracranial pressure, nasal fractures, nasal neoplasia, rhinitis and epistaxis</li> </ul>
<b>Intratracheal oxygen</b> (endotracheal intubation, tracheostomy, intratracheal catheter)	Variable	21-100%	<ul style="list-style-type: none"> <li>▶ Emergency or long-term technique</li> <li>▶ Patients with severe respiratory distress or upper airway obstruction</li> <li>▶ Patients that require positive pressure ventilation (PPV)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Constant monitoring</li> <li>▶ Potential oxygen toxicity (<math>F_{iO_2} &gt; 60\%</math> for prolonged periods)</li> <li>▶ Potential multiple complications</li> </ul>