

# HYPOXIA

## RECOGNITION

In moderate and severe hypoxia, there will be:

- Rapid breathing
- Breathing that is distressed or gasping
- Difficulty speaking
- Grey-blue skin (cyanosis). At first, this is more obvious in the extremities, such as lips, nailbeds and earlobes, but as the hypoxia worsens cyanosis affects the rest of the body
- Anxiety
- Restlessness
- Headache
- Nausea and possibly vomiting
- Cessation of breathing if the hypoxia is not quickly reversed

**This condition arises** when there is insufficient oxygen in the body tissues. There are a number of causes of hypoxia, ranging from suffocation, choking or poisoning to impaired lung or brain function. The condition is accompanied by a variety of symptoms, depending on the degree of hypoxia. If not treated quickly, hypoxia is potentially fatal because a sufficient level of oxygen is vital for the normal function of all the body organs and tissues, especially the brain.

In a healthy person, the amount of oxygen in the air is more than adequate for the body tissues to function normally. However, in an injured or ill person, a reduction in oxygen reaching the tissues results in deterioration of body function. Mild hypoxia reduces a casualty's ability to think clearly, but the body normally responds to this by increasing the rate and depth of breathing (p.91). However, if the oxygen supply to the brain cells is cut off for as little as three to four minutes, the brain cells will begin to die. All the conditions covered in this chapter can result in hypoxia.

## INJURIES OR CONDITIONS CAUSING LOW BLOOD OXYGEN (HYPOXIA)

INJURY OR CONDITION	CAUSES
Insufficient oxygen in inspired air	<ul style="list-style-type: none"> <li>■ Suffocation by smoke or gas</li> <li>■ Changes in atmospheric pressure, for example, at high altitude or in a depressurised aircraft</li> </ul>
Airway obstruction	<ul style="list-style-type: none"> <li>■ Blocking or swelling of the airway</li> <li>■ Hanging or strangulation</li> <li>■ Something covering the mouth or nose</li> <li>■ Asthma</li> <li>■ Choking</li> <li>■ Anaphylaxis</li> </ul>
Conditions affecting the chest wall	<ul style="list-style-type: none"> <li>■ Crushing, for example, by a fall of earth or sand or pressure from a crowd</li> <li>■ Chest wall injury with multiple rib fractures or constricting burns</li> </ul>
Impaired lung function	<ul style="list-style-type: none"> <li>■ Lung injury</li> <li>■ Collapsed lung</li> <li>■ Lung infections, such as pneumonia</li> </ul>
Damage to the brain or nerves that control respiration	<ul style="list-style-type: none"> <li>■ A head injury or stroke that damages the breathing centre in the brain</li> <li>■ Some forms of poisoning</li> <li>■ Paralysis of nerves controlling the muscles of breathing, as in spinal cord injury</li> </ul>
Impaired oxygen uptake by the tissues	<ul style="list-style-type: none"> <li>■ Carbon monoxide or cyanide poisoning</li> <li>■ Shock</li> </ul>

# AIRWAY OBSTRUCTION

**The airway may be obstructed** externally or internally, for example, by an object that is stuck at the back of the throat (pp.94–96). The main causes of obstruction are:

- **Inhalation** of an object, such as food
  - **Blockage** by the tongue, blood or vomit while a casualty is unresponsive (p.59)
  - **Internal swelling** of the throat occurring with burns, scalds, stings or anaphylaxis
  - **Injuries** to the face or jaw
  - **An asthma attack** in which the small airways in the lungs constrict (p.102)
  - **External pressure** on the neck, as in hanging or strangulation.
  - **Peanuts**, which can swell up when in contact with body fluids.
- These pose a particular danger in young children because they can completely block the airway
- Airway obstruction requires prompt action; be prepared to give chest compressions and rescue breaths if the casualty stops breathing (The unresponsive casualty, pp.54–87).
- The information on this page is appropriate for all causes of airway obstruction, but if you need detailed instructions for specific situations, refer to the relevant pages given below.

## CAUTION

- If the casualty is unresponsive, open the airway and check breathing (The unresponsive casualty, pp.54–87).

## RECOGNITION

- Features of hypoxia (opposite), such as grey-blue tinge to the lips, earlobes and nailbeds (cyanosis)
- Difficulty speaking and breathing
- Noisy breathing
- Red, purfy face
- Signs of distress from the casualty, who may point to the throat or grasp the neck
- Flaring of the nostrils
- A persistent cough

## YOUR AIMS

- To remove the obstruction
- To restore normal breathing
- To arrange removal to hospital

## WHAT TO DO



- 1 Remove the obstruction** if it is external or visible in the mouth.
- 2 If the casualty is responsive** and breathing normally, reassure him, but keep him under observation.
- 3 Even if the casualty appears** to have made a complete recovery, **call 999/112 for emergency help**. Monitor and record his vital signs – breathing, pulse and level of response (pp.52–53) – until help arrives.