

INHALATION OF FUMES

The **inhalation of smoke**, gases (such as carbon monoxide) or toxic vapours can be lethal. A casualty who has inhaled fumes is likely to have low levels of oxygen in his body tissues (Hypoxia, p.92) and therefore needs urgent medical attention.

Do not attempt to carry out a rescue if it is likely to put your own life at risk; fumes that have built up in a confined space will quickly overcome anyone who is not wearing protective equipment.

SMOKE INHALATION

Any person who has been enclosed in a confined space during a fire should be assumed to have inhaled smoke. Smoke from burning plastics, foam padding and synthetic wall coverings is likely to contain poisonous fumes.

Casualties who have suffered from fume inhalation should also be examined for other injuries due to the fire, such as external burns.

INHALATION OF CARBON MONOXIDE

Carbon monoxide is a poisonous gas, but it is hard to detect as it has no taste or smell. The gas acts directly on red blood cells, preventing them from carrying oxygen to the body tissues. If carbon monoxide is inhaled in large quantities – for example, from smoke or vehicle exhaust fumes in a confined space – it can very quickly prove fatal. However, lengthy exposure to even a small amount of carbon monoxide – for example, due to a leakage of fumes from a defective heater or flue – may also prove fatal.

EFFECTS OF FUME INHALATION

FUMES	POSSIBLE SOURCE	EFFECTS
Carbon monoxide	<ul style="list-style-type: none"> Exhaust fumes of motor vehicles Smoke from most fires Back-draughts from blocked chimney flues Emissions from defective gas or paraffin heaters and poorly maintained boilers Disposable or portable barbecues used in a confined space 	<ul style="list-style-type: none"> Prolonged exposure to low levels: Headache Confusion Aggression Nausea and vomiting Diarrhoea <p>Brief exposure to high levels:</p> <ul style="list-style-type: none"> Grey-blue skin coloration Rapid, difficult breathing Impaired level of response, leading to unresponsiveness
Smoke	<ul style="list-style-type: none"> Fires: smoke is a bigger killer than fire itself. Smoke is low in oxygen (which is used up by the burning of the fire) and may contain toxic fumes from burning materials. 	<ul style="list-style-type: none"> Rapid, noisy and difficult breathing Coughing and wheezing Burning in the nose or mouth Soot around the mouth and nose Unresponsiveness
Carbon dioxide	<ul style="list-style-type: none"> Tends to accumulate and become dangerously concentrated in deep enclosed spaces, such as coal pits, wells and underground tanks 	<ul style="list-style-type: none"> Breathlessness Headache Confusion Unresponsiveness
Solvents and fuels	<ul style="list-style-type: none"> Glues Cleaning fluids Lighter fuels Camping gas and propane-fuelled stoves Solvent abusers may use a plastic bag to concentrate the vapour, especially with glues 	<ul style="list-style-type: none"> Headache and vomiting Impaired level of response Airway obstruction from using a plastic bag or from choking on vomit may result in death Solvent abuse is a potential cause of cardiac arrest

WHAT TO DO

1 Call 999/112 for emergency help. Tell ambulance control that you suspect fume inhalation.



3 Support the casualty and encourage him to breathe normally. If the casualty's clothing is still burning, try to extinguish the flames (p.33). Treat any obvious burns (pp.174–77) or other injuries.



2 If it is necessary to escape from the source of the fumes, help the casualty away from the fumes into fresh air. Do not enter the fume-filled area yourself.



4 Stay with the casualty until help arrives. Monitor and record the casualty's vital signs – breathing, pulse and level of response (pp.52–53) – until help arrives.



CAUTION

- If the casualty is in a garage filled with vehicle exhaust fumes, open the doors wide and let the gas escape before you enter.
- If the casualty is found unresponsive, open the airway and check breathing (The unresponsive casualty, pp.54–87).

YOUR AIMS

- To restore adequate breathing
- To call 999/112 for emergency help and obtain urgent medical attention