

B. RESPIRATORY SYSTEM AND BREATHING

In this chapter you will learn about:

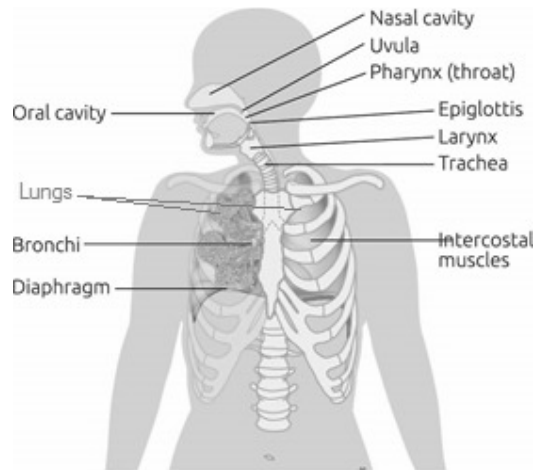
- Respiration.
- No breathing or difficult breathing.
- Drowning.
- Strangulation and hanging.
- Choking.
- Swelling within the throat.
- Suffocation by smoke or gases.
- Asthma.

B.1 RESPIRATION

Oxygen is essential to life. Every time we breathe in, air containing oxygen enters the lungs. When we breathe out air containing waste products is removed from the lungs. In each inspiration we take approximately 500 cc of air in.

Respiration is defined as the transport of oxygen from the outside air to the cells within the body tissues, and the transport of carbon dioxide (a waste product) in the opposite direction.

B.1.1 THE RESPIRATORY SYSTEM

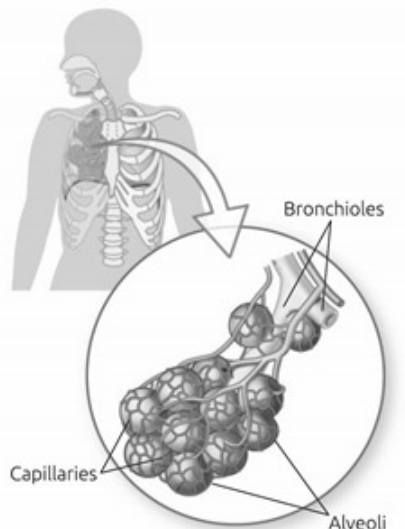


B.1.1.1 THE AIR PASSAGES

The air passages consist of the nose, throat (pharynx), wind pipe (trachea) and air-tubes (bronchi). The bronchi divide into minute branches (bronchioles) which end in the lung substance (alveoli).

B.1.1.2 THE LUNGS

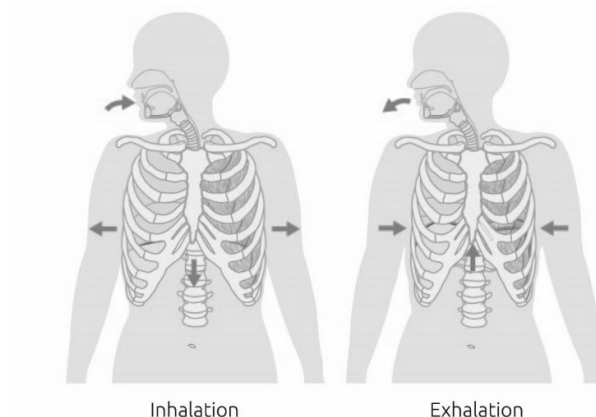
The lungs (two in number) are situated on the right and left sides of the chest cavity. Each lung is made up of a number of small sacs, called alveoli. The lungs are covered by a membrane called 'pleura' which lines the inner wall of the chest cavity.



B.1.2 THE RESPIRATORY MUSCLES

The respiratory muscles, diaphragm, intercostal and abdominal muscles help to contract and expand the lungs to facilitate the breathing.

B.1.3 MECHANISM OF RESPIRATION



During inspiration (breathing in), the diaphragm (the muscle separating the chest from the abdominal cavity) flattens and increases the chest capacity from above downwards. The ribs move upwards and forwards increasing the capacity of the chest cavity from front to back by the action of the muscles situated between the ribs; the lungs thus expand and air enters them. This is an active process.

During expiration (breathing out) the reverse process takes place. The diaphragm comes back to its original state and the ribs fall back thus forcing the air out of the lungs. This is a passive process.

Small blood vessels (capillaries) surround the alveoli. The exchanges of oxygen and carbon dioxide take place through the blood circulating in these capillaries. Oxygen is absorbed by the red blood corpuscles of the blood; water vapour and carbon dioxide are let out from the blood plasma into the alveoli and expelled out.

The lungs are also supplied with nerves which are connected to an area in the brain called respiratory centre. This centre controls the respiration.

B.2 NO BREATHING OR DIFFICULT BREATHING

Asphyxia is a condition in which the lungs do not get sufficient supply of air for breathing. If this continues for some minutes, the breathing and heart action stop and death occurs.



A person can only survive a few minutes without breathing and a beating heart.

B.2.1 CAUSES OF NO BREATHING

B.2.1.1 CONDITIONS AFFECTING THE AIR PASSAGE

Following reasons can cause no breathing:

B.2.1.1.1 OBSTRUCTION OF THE AIR PASSAGE

- foreign body inhalation- as a coin inhaled by a child or artificial tooth by an adult;
- food going down the air passage;
- sea weeds, mud or water getting into air passage during drowning;
- bronchial asthma;
- tongue falling back in an unconscious person;
- swelling of tissues of the throat as a result of scalding (burning by steam or boiling fluids or corrosives) or allergic reactions;
- inhaling irritant gases (coal gas, motor exhaust fumes, smoke, sewer and closed granary gas or gas in a deep unused well, etc.).

B.2.1.1.2 COMPRESSION OF THE AIR PASSAGE (USUALLY DELIBERATE, SOMETIMES ACCIDENTAL)

- Smothering such as covering of the face and nose of an infant or an unconscious person lying face downwards on a pillow, or having a plastic bag covering the face of the victim,
- tying a rope or scarf tightly around the neck causing strangulation,
- hanging or throttling (applying pressure with fingers on the windpipe).

B.2.1.2 CONDITIONS AFFECTING THE RESPIRATORY MECHANISM

- Epilepsy, tetanus, rabies, etc.;
- nerve diseases causing paralysis of the chest wall or diaphragm;
- poisonous bites (e.g. snake bites like the cobra).

B.2.1.3 CONDITIONS AFFECTING RESPIRATORY CENTRE

- Overdose of morphia or similar products such as barbiturates (sleeping tablets,
- electric shock,
- stroke.

B.2.1.4 COMPRESSION OF THE CHEST

- Caving in of earth or sand in mines, quarries, pits or compression by grain in a silo or by beams or pillars in house-collapse;

- crushing against a wall or a barrier or pressure in a crowd (stampede).

B.2.1.5 LACK OF OXYGEN AT HIGH ALTITUDES

- Low atmospheric pressure where the oxygen level in the atmospheric air is low or due to lack of acclimatization.

B.2.2 WHAT DO I SEE AND ENQUIRE?

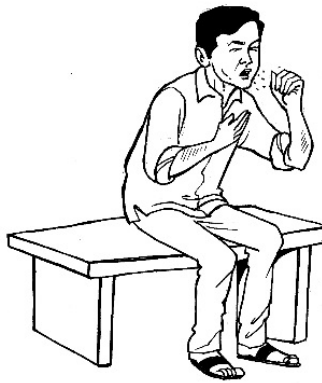


The signs of *no breathing* are:

- there is no flow of air out of the nose or mouth (listen, feel the airflow); and
- the chest of the victim does not move up and down.



Note that even after breathing has stopped the heart may continue to beat for a short while. If you find a person who is not breathing or not breathing normally, you can increase his chances of staying alive by pushing hard and fast in the middle of the person's chest and by giving rescue breaths (CPR).



The signs of *asphyxia* are:

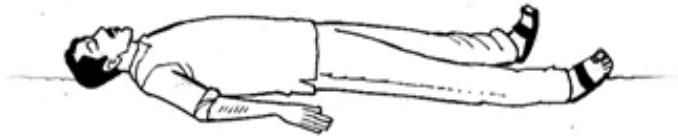
- difficulty in breathing and signs of restlessness;
- the rate of breathing increases;
- the breaths get shorter;
- the veins of the neck become swollen;
- the face, lips, nails, fingers and toes turn blue; and
- the pulse gets faster and feebler.

B.2.3 WHAT DO I DO WHEN THE CASUALTY IS NOT BREATHING OR NOT BREATHING NORMALLY?

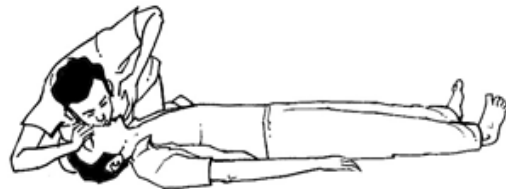
B.2.3.1 SAFETY FIRST AND CALL FOR HELP

1. Make sure there is no danger to you.
2. The person urgently needs help. Shout or call for help if you are alone but do not leave the person unattended. Ask a bystander to seek help or to arrange urgent transport to the nearest healthcare facility. Tell him to come back to you to confirm if help has been secured.

B.2.3.2 SECURE AN OPEN AIRWAY AND START CPR



3. Remove any cause of suffocation, but do not place yourself into any danger doing so.
4. If the person is not on his back, turn him on his back.
5. Kneel down by the side of the person.



6. Start CPR

Do not interrupt the resuscitation until:

- the victim starts to wake up, moves, opens eyes and breathes normally;
- help (trained in CPR) arrives and takes over;
- you become too exhausted to continue; or
- the scene becomes unsafe for you to continue.



7. Cover the casualty.

8. If the breathing starts again:
 - a. Keep the victim covered to keep him warm.
 - b. Arrange urgent transport to a hospital.
 - c. Do not leave the victim alone and continue to observe him.
 - d. If the breathing stops, restart CPR.

B.2.3.3 HYGIENE

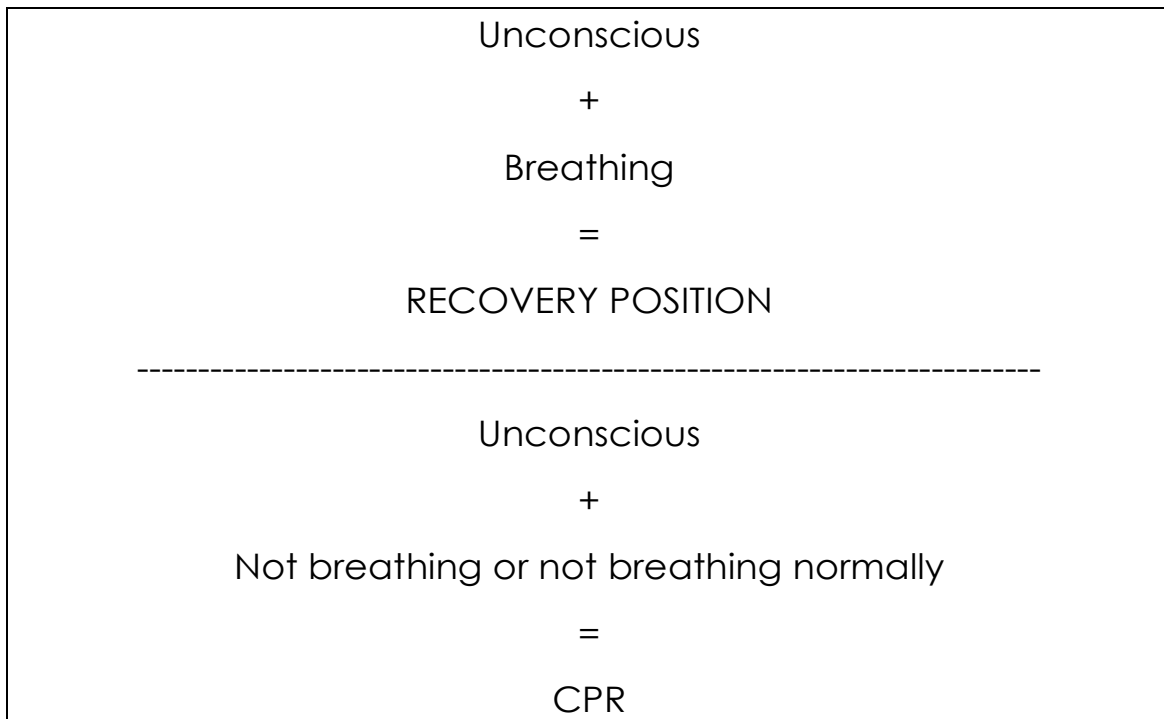
Always wash your hands after taking care of a person. Use soap and water to wash your hands. If no soap is available, you can use ash to wash your hands. Alcohol-based sanitizers can also be used, if available.

B.2.4 WHEN TO REFER THE CASUALTY TO A HEALTHCARE FACILITY?



Always urgently transport any person who stopped breathing or has suffered a suffocation incident to the nearest healthcare facility as quickly as possible continuing CPR.

SUMMARY:



B.3 DROWNING

Drowning causes asphyxia by water, weeds and mud entering into the lungs. When the lungs' alveoli are filled with water, they cannot exchange oxygen to and from the blood.

In case of 'dry drowning' the water never reaches the lungs. Instead, breathing in water causes the vocal cords spasm that shuts off his airways, making it hard to breathe.

'Secondary drowning' happens differently. The swimmer often appears fine immediately after swimming. But over time, water left in the swimmer's lungs begins to cause oedema, or swelling.



If a casualty has been immersed in cold water, there is also the danger of hypothermia. It is important to keep the victim warm.
If the casualty was diving there could be trauma to the head, neck or spine.

B.3.1 WHAT DO I SEE AND ENQUIRE?



- A victim is in the water and is in distress.
- Following signs of drowning may be observed:
 - no breathing;
 - difficulty in breathing and signs of restlessness;
 - the rate of breathing increases;
 - the breaths get shorter;
 - the veins of the neck become swollen;
 - the face, lips, nails, fingers and toes turn blue;
 - the pulse gets faster and feebler; and
 - water may gush from the mouth.



This water is from the stomach and should be left to drain of its own accord. Do not attempt to force the water to come out of the stomach as the victim may inhale it.

B.3.2 WHAT DO I DO?

B.3.2.1 SAFETY FIRST AND CALL FOR HELP

1. Make sure there is no danger to you or of drowning.
2. The person urgently needs help. Shout or call for help if you are alone but do not leave the person unattended. Ask a bystander to seek help or to arrange urgent transport to the nearest healthcare facility. Tell him to come back to you to confirm if help has been secured.

B.3.3 REMOVE THE VICTIM OUT OF THE WATER



3. Remove the person rapidly and safely from the water, but do not place yourself into any danger by doing so.
4. Try to throw a rope or something that the drowning person can hold onto (if he is still conscious and able to grasp the helpline).
5. Once the person has been rescued from the water, do not try to remove water from his lungs.

B.3.3.1.1 WHAT DO I DO IF THE VICTIM IS BREATHING?

1. If the person is breathing, put him in the recovery position and cover him with a blanket or coat to keep him warm.
2. Do not leave the victim alone and continue to observe him.

B.3.3.1.2 WHAT DO I DO IF THE VICTIM IS NOT BREATHING OR NOT BREATHING NORMALLY?

1. Remove any cause of suffocation.
2. If the person is not on his back, turn him on his back.
3. Kneel down by the side of the person.
4. Start CPR.

Do not interrupt the resuscitation until:

- the victim starts to wake up, moves, opens eyes and breathes normally;
- help (trained in CPR) arrives and takes over;
- you become too exhausted to continue; or
- the scene becomes unsafe for you to continue.

If the breathing starts again:

- a. Cover the victim.
- b. Arrange urgent transport to a hospital.
- c. Do not leave the victim alone and continue to observe him.
- d. If the breathing stops again, restart CPR.

B.3.3.2 *HYGIENE*

Always wash your hands after taking care of a person. Use soap and water to wash your hands. If no soap is available, you can use ash to wash your hands. Alcohol-based sanitizers can also be used, if available.

B.3.4 WHEN TO REFER A DROWNING VICTIM TO A HEALTHCARE FACILITY?



Always urgently transport people who have been in a drowning situation to a healthcare facility.

B.4 STRANGULATION AND HANGING

The airway is squeezed if pressure is exerted on the outside of the neck and by such act the flow of air into the lungs is cut off.

Strangulation is a constriction or squeezing around the neck or throat. Hanging is the suspension of the body by a noose around the neck. Hanging or strangulation may occur accidentally - for example, by ties or clothing becoming caught in machinery.



Hanging may cause a broken neck. For this reason the casualty must be handled extremely carefully.

B.4.1 WHAT DO I DO?

B.4.1.1 SAFETY FIRST AND CALL FOR HELP

1. Make sure there is no danger to you.
2. The person urgently needs help. Shout or call for help if you are alone but do not leave the person unattended. Ask a bystander to seek help or to arrange urgent transport to the nearest healthcare facility. Tell him to come back to you to confirm if help has been secured.



3. Cut or remove the band constricting the throat.
If the victim is suspended, raise the body and loosen or cut the rope.
4. Lay the person on the ground.
Be careful while moving the victim as he may suffer neck injuries.

B.4.1.2 WHAT DO I DO IF THE VICTIM IS BREATHING?

1. If the person is breathing, put him in the recovery position and cover him with a blanket or coat to keep him warm.
2. Do not leave the victim alone and continue to observe him.

B.4.1.3 WHAT DO I DO IF THE VICTIM IS NOT BREATHING OR NOT BREATHING NORMALLY?

1. Remove any cause of suffocation, but do not place yourself into any danger doing so.
2. If the person is not on his back, turn him on his back.
3. Kneel down by the side of the person.

4. Start CPR

Do not interrupt the resuscitation until:

- the victim starts to wake up, moves, opens eyes and breathes normally;
- help (trained in CPR) arrives and takes over;
- you are too exhausted to continue; or
- the scene becomes unsafe for you to continue.

If the breathing starts again:

- a. Cover the victim to keep him warm.
- b. Arrange urgent transport to a hospital.
- c. Do not leave the victim alone and continue to observe him.
- d. If the breathing stops again, restart CPR.

B.4.1.4 HYGIENE

Always wash your hands after taking care of a person. Use soap and water to wash your hands. If no soap is available, you can use ash to wash your hands. Alcohol-based sanitizers can also be used, if available.



Do not wait for the police to arrive, but give first aid immediately.
Do not interfere or destroy any material or evidence.

B.4.2 WHEN TO REFER A VICTIM OF STRANGULATION OR HANGING TO A HEALTHCARE FACILITY?



Always urgently transport victims of a strangulation or hanging to a healthcare facility.

B.5 CHOKING

When a person is having severe difficulty in breathing because of an obstructed airway or lack of air, he is choking.

Coughing is the natural way of clearing the airway when the person experiences mild choking. It is also a sign that he still gets air through the windpipe.

Severe choking happens when the foreign object or a local swelling blocks the airway. This is a life-threatening emergency.

Infants and children often choke after swallowing non-edible objects such as coins, marbles, seeds, buttons or small toys.

Most adult cases of choking occur while eating. Since choking often occurs while eating, there are usually people present near the casualty. This means there is a good chance that someone will be able to give help quickly.

B.5.1 WHAT DO I SEE AND ENQUIRE?



When a person is choking, you may observe the following:

- the person has difficulty in breathing,
- he tries to cough something out but it does not help,
- he cannot speak or make any sound,
- he puts his hands on his throat,
- the lips and tongue turn blue,
- the veins in the face and neck stick out, or
- the person becomes dizzy and might lose consciousness.

B.5.2 WHAT DO I DO IN CASE A PERSON IS CHOKING?



Follow these guidelines if the choking person's age is more than one year.

B.5.2.1 APPROACH AND HELP THE CHOKING PERSON

Ask the person 'Are you choking?' (Only if the person can understand and answer the question).

B.5.2.1.1 WHAT DO I DO IF THE PERSON CAN ANSWER THE QUESTION, CAN COUGH OR BREATHE?

Ask the person to keep coughing. Do not do anything else, but stay with the person until he breathes normally again.

B.5.2.1.2 WHAT DO I DO IF THE PERSON CANNOT SPEAK, COUGH OR BREATHE?



1. Stand to the side and a little behind the choking person or child (aged older than one year).
2. Support the person's chest with one hand and bend him forward.
3. Give five firm blows between the person's shoulder blades. To do so, use the heel of your free hand.

Verify if the object has come out and the person can breathe again.

B.5.2.1.3 WHAT DO I DO IF THE OBJECT DID NOT COME OUT AND THE PERSON IS STILL CHOKING?



1. Stand behind the choking person and put both hands around him, so your hands meet in front of the person.
2. Make a fist and place it between the navel and lower tip of the breastbone of the person. Hold onto this fist with your other hand.



3. Bend the choking person forward and pull your fist firmly towards you and upwards.
4. Give five abdominal thrusts.

This method of abdominal thrusts can only be used on people older than one year.

5. If the passage of air is free, stop giving further abdominal thrusts. But always stop after five abdominal thrusts.
6. If the object does not come out and the person is still choking, give another five blows on the back followed by five abdominal thrusts.
7. Repeat this until the object is released or until the choking person loses consciousness.

B.5.2.1.4 WHAT DO I DO IF THE PERSON LOSES CONSCIOUSNESS?

1. Carefully place the unconscious person on the floor.
2. The person urgently needs help. Shout or call for help if you are alone but do not leave the person unattended. Ask a bystander to seek help or to arrange urgent transport to the nearest healthcare facility. Tell him to come back to you to confirm if help has been secured.
3. Kneel down by the side of the person.
4. If the person is not on his back, turn him on his back.
5. Start CPR.

Do not interrupt the resuscitation until:

- the victim starts to wake up, moves, opens his eyes and breathes normally;
- help (trained in CPR) arrives and takes over;
- you are too exhausted to continue; or
- the scene becomes unsafe for you to continue.

B.5.2.2 HYGIENE

Always wash your hands after taking care of a person. Use soap and water to wash your hands. If no soap is available, you can use ash to wash your hands. Alcohol-based sanitizers can also be used, if available.

B.5.3 WHAT DO I DO IF THE CHOKING PERSON IS A BABY UNDER THE AGE OF ONE YEAR?



1. The baby urgently needs help. Shout or call for help if you are alone but do not leave the child unattended. Ask a bystander to seek help or to arrange urgent transport to the nearest healthcare facility. Tell him to come back to you to confirm if help has been secured.
2. Kneel down so that you can use your thighs to prevent the baby from falling.
3. Lay the baby down along your forearm.

If you are right-handed, use your left forearm; if you are left-handed, use your right forearm.

4. Support the baby's head and neck with one hand without covering the mouth so the baby lies face down, with the baby's head below his trunk, over your forearm, supported by your thigh.
5. With your free hand, give five firm blows with the base of your palm to the area between the baby's shoulder blades.
6. Quickly turn the baby, while supporting the head, onto his back to face you, resting on your arm.
7. Check if the object has come out and the baby can breathe freely.

B.5.3.1 WHAT DO I DO IF THE OBJECT DOES NOT COME OUT?



1. Place two fingers (the two after your thumb) in the middle of the baby's chest and deliver five thrusts (pushing inwards and upwards).



This method of chest thrust is only to be used on babies under the age of one year.

2. Stop after five thrusts.
3. If the object does not come out and the baby is still choking, give another five blows on the back followed by five thrusts.

4. Repeat this until the object is released or the choking baby loses consciousness.

B.5.3.1.1 WHAT DO I DO IF THE BABY LOSES CONSCIOUSNESS?

1. Lay the baby down on the floor or on a hard and safe surface.
2. Start CPR on the baby.

Do not interrupt the resuscitation until:

- the baby starts to wake up, moves, opens his eyes and breathes normally; or
- help (trained in CPR) arrives and takes over.

B.5.3.2 HYGIENE

Always wash your hands after taking care of a person. Use soap and water to wash your hands. If no soap is available, you can use ash to wash your hands. Alcohol-based sanitizers can also be used, if available.

B.5.4 WHEN TO REFER A CHOKING PERSON A HEALTHCARE FACILITY?



Always urgently transport the person to the nearest healthcare facility if he lost consciousness.



Always urgently transport a choking baby or child for a check-up and follow-up to the nearest healthcare facility, even if the obstruction came out and the baby or child is breathing normally again.



Always advise the person to visit healthcare facility as soon as possible if abdominal thrusts has been applied.

B.6 SWELLING WITHIN THE THROAT

A swelling in the throat may occur as a result of:

- trying to drink a very hot liquid,
- swallowing corrosive poisons,
- due to an inflammation, or
- due to an allergic reaction.

The swelling may obstruct the free airway to the lungs.

B.6.1 WHAT DO I DO IN CASE OF A VICTIM WITH A SUSPECTED SWELLING WITHIN THE THROAT?

B.6.1.1 PROVIDE FIRST AID

1. Make the victim sit up.
2. If the breathing continues normally, or is restored to normal, you can give ice to suck on or some cold water to sip.
3. If the breathing stopped:
 - a. Call for help.
 - b. Start CPR.
4. Always refer the victim to a healthcare facility for further follow up.

B.6.1.2 HYGIENE

Always wash your hands after taking care of a person. Use soap and water to wash your hands. If no soap is available, you can use ash to wash your hands. Alcohol-based sanitizers can also be used, if available.

B.6.2 WHEN TO REFER PERSON WITH A SWELLING THROAT A HEALTHCARE FACILITY?



Always urgently transport a casualty with a swelling in the throat to the nearest healthcare facility,

B.7 SUFFOCATION BY SMOKE OR GASES

Asphyxia can occur in an environment where sufficiently oxygenated air is present, but cannot be adequately breathed because of air contamination such as excessive smoke, or can occur in case of breathing in the oxygen-depleted air.

An *asphyxiant* gas is usually a nontoxic or minimally toxic gas which reduces or displaces the normal oxygen concentration in breathing air. Because asphyxiant gases are relatively inert and odourless, their presence in high concentration may not be noticed, except in the case of carbon dioxide.

Toxic gases, by contrast, cause death by other mechanisms, such as competing with oxygen at the cellular level (e.g., carbon monoxide) or directly damaging the respiratory system. Even smaller quantities of these gases can be deadly.

Carbon monoxide (CO) is a colourless, odourless, and tasteless but highly toxic gas which takes the space in haemoglobin that normally carries oxygen, thus makes it ineffective in delivering oxygen to body tissues. Carbon monoxide is produced when there is not enough oxygen to produce carbon dioxide (CO₂), such as when operating a stove or an internal combustion engine in an enclosed space. Carbon monoxide is lighter than air.

Carbon dioxide (CO₂) is a colourless, odourless gas which is heavier than normal air. It can be pocketed in high concentrations in wells, sewerages and mines.

Other gases like refrigerator gases, compressed gases for cooking or lighting can also cause suffocation.

B.7.1 WHAT DO I DO IN CASE OF A VICTIM SUFFERING SUFFOCATION BY SMOKE?

B.7.1.1 SAFETY FIRST

1. Shout or call for help if you are alone but do not leave the person. Ask a bystander to seek help. Tell him to come back to you to confirm if help has been secured.
2. Make sure there is no danger to you. Do not take any risk that could endanger you. The fire brigade has specialized teams and equipment to handle these situations safely.
3. Protect yourself by a towel or a cloth (preferably wet) over your mouth and nose.



4. Crawl on the floor and stay as low as possible.

B.7.1.2 MOVE THE VICTIM OUT OF THE SMOKE

5. Move the victim as quickly as possible away from the area.
6. Loosen the victim's clothes at neck and waist.

7. If the breathing stopped, call for help and start CPR.
8. Always arrange transport for the victim to a healthcare facility for further follow up.

B.7.1.3 HYGIENE

Always wash your hands after taking care of a person. Use soap and water to wash your hands. If no soap is available, you can use ash to wash your hands. Alcohol-based sanitizers can also be used, if available.

B.7.2 WHAT DO I DO IN CASE OF A VICTIM SUFFERING SUFFOCATION BY CARBON MONOXIDE (CO) OR GASES LIGHTER THAN AIR?

B.7.2.1 SAFETY FIRST

1. Shout or call for help if you are alone but do not leave the person unattended. Ask a bystander to seek help. Tell him to come back to you to confirm if help has been secured.
2. Make sure there is no danger to you. Do not take any risk that could endanger you. The fire brigade has specialized teams and equipment to handle these situations safely.



If the gas is expected to be a deadly poisonous gas, do not enter the affected area!

3. Ensure the circulation of fresh air by opening doors and windows.



4. Before entering the enclosed space, take two or three deep breaths and hold your breath as long as you can. Use a gas mask if available.
5. Crawl on the floor and stay as low as possible.
6. Move the victim to an area of fresh air away from the affected area.
7. Loosen the victim's clothes at neck and waist.
8. If the breathing has stopped, call for help and start CPR.
9. Always arrange transport for the victim to a healthcare facility for further follow up.

B.7.2.2 HYGIENE

Always wash your hands after taking care of a person. Use soap and water to wash your hands. If no soap is available, you can use ash to wash your hands. Alcohol-based sanitizers can also be used, if available.

B.7.3 WHAT DO I DO IN CASE OF A VICTIM SUFFERING SUFFOCATION BY CARBON DIOXIDE (CO₂) OR GASES HEAVIER THAN AIR?

B.7.3.1 SAFETY FIRST

1. Shout or call for help if you are alone but do not leave the person unattended. Ask a bystander to seek help. Tell him to come back to you to confirm if help has been secured.
2. Make sure there is no danger to you. Do not take any risk that could endanger you. The fire brigade has specialized teams and equipment to handle these situations safely.



If the gas is expected to be a deadly poisonous gas, do not enter the affected area!

3. Ensure the circulation of fresh air before entering the area if possible.



4. Use a gas mask. If not available, before entering the enclosed space, take two or three deep breaths and hold your breath as long as you can.
5. Enter in upright position and stay as high as possible.

B.7.3.2 MOVE THE VICTIM TO AN AREA OF FRESH AIR

6. Move the victim as quickly as possible away from the area.
7. Loosen the victim's clothes at neck and waist.
8. If the breathing stopped, call for help and start CPR.
9. Always arrange transport for the victim to a healthcare facility for further follow up.

B.7.3.3 HYGIENE

Always wash your hands after taking care of a person. Use soap and water to wash your hands. If no soap is available, you can use ash to wash your hands. Alcohol-based sanitizers can also be used, if available.

B.7.4 WHEN TO REFER PERSON EXPOSED TO SMOKE OR GASSES TO A HEALTHCARE FACILITY?



Always urgently transport the casualty who was exposed to smoke or gasses to the nearest healthcare facility,

B.8 ASTHMA

Asthma is a condition in which the person's airways become narrow and swell and produce extra mucus. This can make breathing difficult and trigger coughing, wheezing and shortness of breath.

For some people, asthma is a minor nuisance. For others, it can be a major problem that interferes with daily activities and may lead to a life-threatening asthma attack.

Asthma may not be cured, but its symptoms can be controlled. Person may be known to have asthma and prescribed medications. This can be established by taking history from the casualty.

B.8.1 WHAT DO I SEE AND ENQUIRE?



Following signs can be seen in a person having an asthma attack:

- The person has difficulty in breathing.
- The person experiences as if he does not get enough air.
- Sometimes the person breathes rapidly or coughs. In some cases he coughs up mucus.
- The breathing makes a whistling or wheezing sound when exhaling.
- The person complains of tightness or pain in the chest.
- The person has troubled sleeping due to the shortness of breath.
- Symptoms of asphyxia (grey blue tinge of lips and nail-beds).
- If the attack lasts long, exhaustion may occur.

B.8.2 WHAT DO I DO?

B.8.2.1 SUPPORT THE PERSON WITH THE ASTHMA ATTACK

1. Stay calm and reassure the person.
2. Let the person adopt a position that he finds most comfortable. In many cases this is sitting up in bed or on a chair, leaning forward on a couple of pillows or a small table on which he rests his head.

Do not make the person lie down. Important however it is important the person adopts the position he finds best.



3. If the person is used to take inhaler puffs for his condition, let him take the medication.
4. Ensure fresh air by opening a window. Loosen any tight clothing.
5. If it is the first attack or the attack is severe or the inhaler puffs have no effect, seek urgent medical help in a healthcare facility.
6. If the person loses consciousness, make sure the airway remains open and check the breathing.
7. If the person stops breathing, start CPR.

B.8.2.2 HYGIENE

Always wash your hands after taking care of a person. Use soap and water to wash your hands. If no soap is available, you can use ash to wash your hands. Alcohol-based sanitizers can also be used, if available.

B.8.3 WHEN TO REFER PERSON WITH ASTHMA TO A HEALTHCARE FACILITY?



Always urgently transport the person with an asthma crisis to the nearest healthcare facility if the asthma crisis continues even after the person took his medication or if his condition deteriorates.



Always advise the person known to be treated for asthma to visit the healthcare facility as soon as possible after the asthma crisis for further follow-up and treatment.