

# A General Guide to First Aid Management

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[BASIC STEPS TO HANDLE AN EMERGENCY](#)

[RECOVERY POSITION](#)

[ABC OF RESUSCITATION](#)

[ARTIFICIAL RESPIRATION](#)

[CPR – CARDIOPULMONARY RESUSCITATION](#)

[CHOKING](#)

[SHOCK](#)

[ANGINA](#)

[HEART ATTACK](#)

[STROKE](#)

[FITS](#)

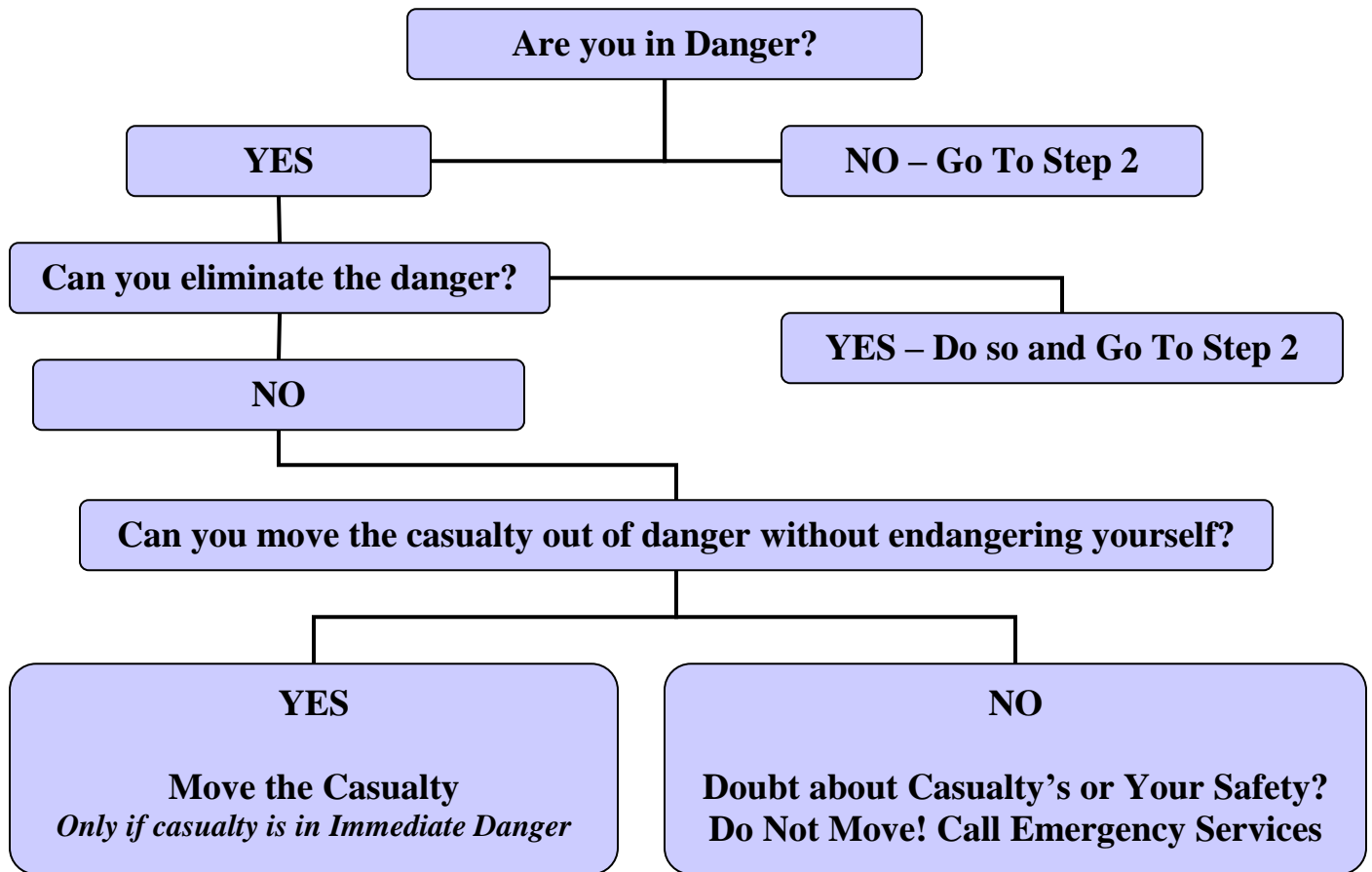
[HYSTERIA](#)

[EMERGENCY OXYGEN](#)

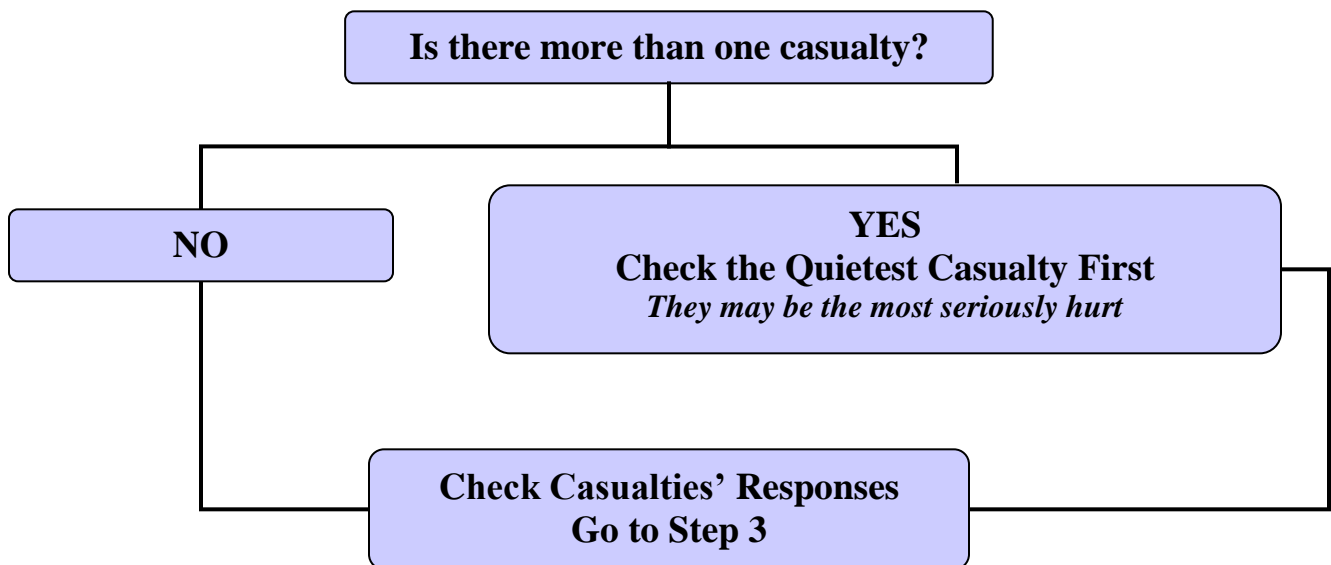
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# BASIC STEPS TO HANDLE AN EMERGENCY

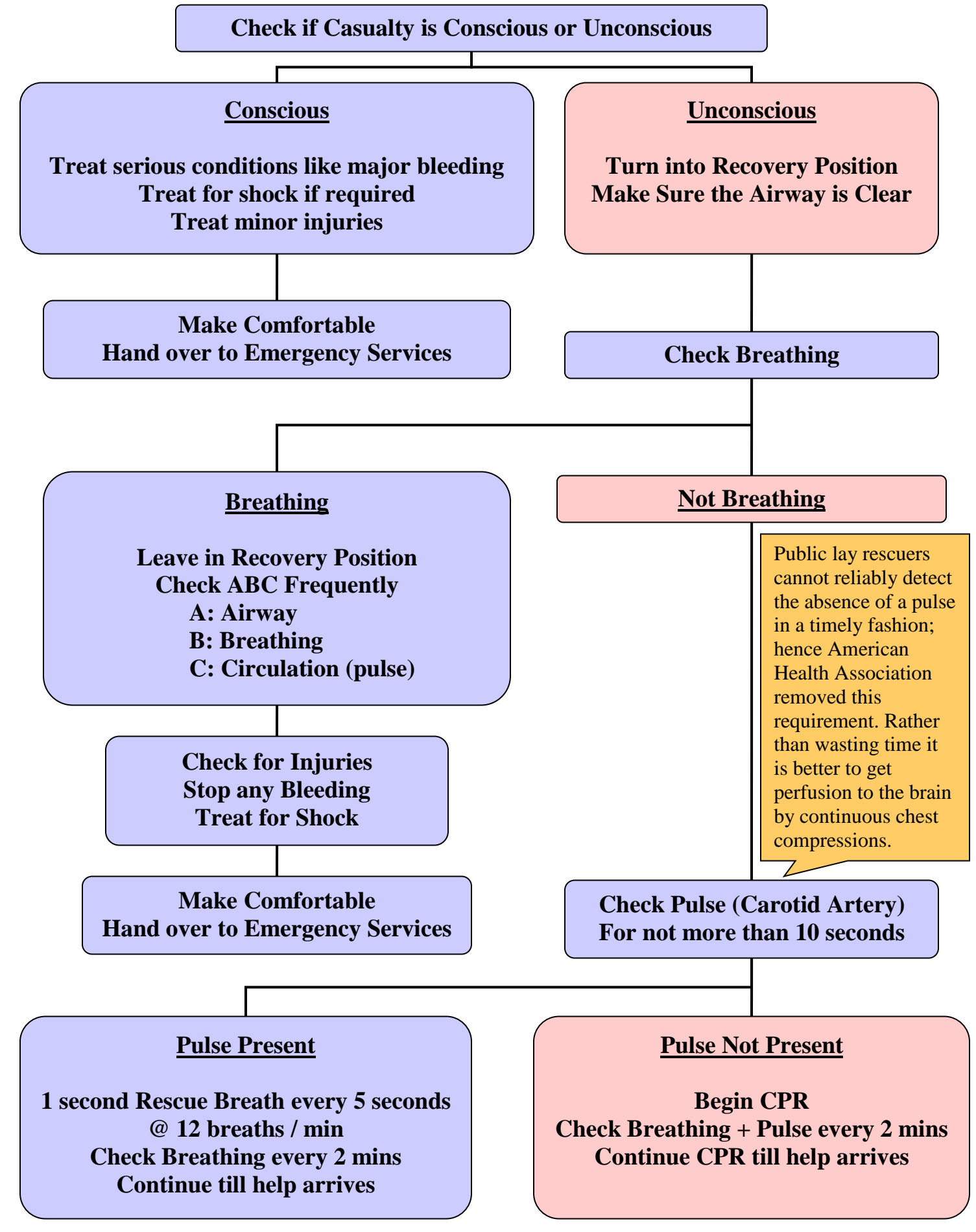
## STEP 1: Assess the Scene



## STEP 2: Assess the Casualties



### STEP 3: Emergency Procedure



## RECOVERY POSITION

- Gently roll the casualty towards you onto his side.
- Tilt his head back slightly to keep his airway open.
- Tuck his hand under his cheek.
- Bring his top leg towards you.
- Bend his leg in a 90° fashion to keep him from rolling over.

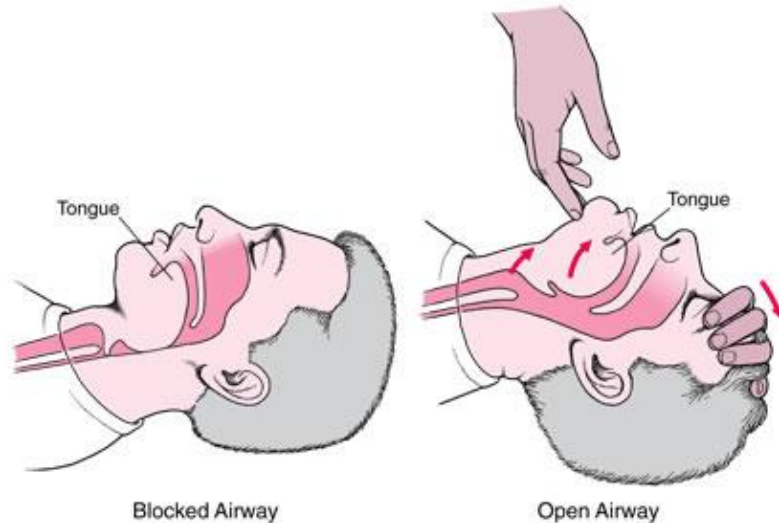


- While in recovery position awaiting help, check breathing and circulation at regular intervals.
- For children over one year, use the same procedure as described above.
- For infants under one year, open airway and cradle infant in your arms (head pointing down).

# ABC of RESUSCITATION

## A for Airway

- Airway of an unconscious casualty lying on his back may get blocked by the tongue.
- Open airway by lifting the casualty's chin with two fingers and pressing on the forehead to tilt back the head.



- Do not leave an unconscious casualty lying face upwards, keep him in the recovery position.
- An unconscious casualty who must be left lying on his back rather than recovery position due to a risk of spinal injury must be constantly monitored.

## B for Breathing

- Check for 10 seconds to see if the casualty is breathing.
- Place your cheek close to the casualty's mouth and look, listen and feel for signs of breathing:
  - Look – Movement in chest or abdomen (should be smooth and regular).
  - Listen – Sounds of breathing by placing ear close to casualty's mouth and nose.
  - Feel – Casualty's breath on your cheek. Place hand on chest to feel if it is rising.
- If there is no breathing (respiration has stopped) then you must supply air.
- If chest/abdomen is moving but no air in/out of mouth then the airway is obstructed.
- Open airway as described above by tilting casualty's head (as it might be the tongue).
- If still not breathing then there is an obstruction in the airway that needs to be cleared.
- Turn casualty head to one side with chin front and top of head to the back.
- Sweep inside of mouth with two hooked fingers and remove any foreign matter.
- If still no breathing then start CPR.

## C for Circulation

- Pulse indicates the condition of circulation.
- Usual place for the pulse on the thumb side of the wrist may not be reliable so first-aider should instead feel for the carotid pulse in the neck (not more than 10 seconds).

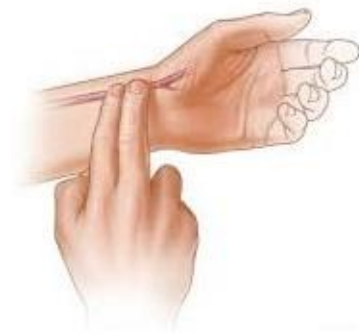
American Heart Association (AHA) does not recommend that lay public rescuers waste time trying to assess for a palpable pulse as they cannot reliably detect the absence of a pulse in a timely fashion. Therefore this requirement was removed by AHA. Studies have shown that even if a person manages to locate the correct spot for detecting a pulse, there is a high chance that the pulse they may detect is their own, especially considering heightened stress levels in such situations. Rather than wasting time trying to detect a pulse that may or may not be the victim's own pulse, it is better to get perfusion to the brain by continuous chest compressions.

It does not have to be one or the other! While ABC has been phased out by the AHA, it still is the de facto initial assessment used in every non-cardiac arrest call. CAB, on the other hand, is now being used during cardiac arrest to remind practitioners and laypeople of the importance of compressions. In general, it is not useful to confine yourself to one ideology "because they say so". It is much more productive to understand each approach and use critical thinking to choose the best route for your patient e.g. ABC for overdose, trauma, altered mental status, diabetic emergencies, respiratory failure, airway obstruction, respiratory distress and CAB for cardiac arrest.

- To feel the carotid pulse, place the index and middle finger on one side of casualty's Adam's apple but without pressing on it.
- Slide the fingertips firmly but gently backwards alongside the Adam's apple so that they pass into the vertical groove between it and the muscle to its side.
- Feel the pulse and count the beats. Adult average is 60-80/min and child's up to 100/min.



**Carotid Pulse**



**Radial Pulse**

## **ARTIFICIAL RESPIRATION**

Before approaching the casualty, check for a response to ascertain consciousness e.g. shaking shoulders and asking “Can you hear me?” etc. Evaluate risk of infection before continuing.

### **Mouth to Mouth Resuscitation**

- Open the victim’s airway (head-tilt/chin-lift).
- Cover the victim’s mouth completely with your mouth.
- Pinch the victim’s nose (to keep the oxygen from escaping back out the nose).
- Give a regular breath for about 1 second into the victim (every 5-6 sec for adults, 3-5 for children).
- When giving the breath you should see the chest rise.
- Let the victim exhale and then give the second breath (like the first one).
- If chest does not rise and fall with each breath, readjust the head, making sure you have the airway open and there is no obstruction. Attempt the breaths again.
- If again breaths do not make the chest rise and fall - move on to circulation and compressions.

### **Mouth to Mask Resuscitation**

- Pocket Masks are usually made of plastic and contain a one way valve designed to limit exposure to the rescuer to exhaled air, bodily fluids, and disease process.
- Place the mask on the victims face with the pointy end over the bridge of the nose.
- Place one hand over the top of the mask holding it firmly on the face.
- Place the second hand on the bottom portion of the mask while grasping the chin.
- Perform a head tilt/chin lift.
- Deliver breaths as in mouth to mouth breathing except place your mouth on the one way valve.
- Deliver each breath for about 1 second; looking for the chest to rise.



**Mouth-Mouth**



**Mouth-Mask**

# CPR – CARDIOPULMONARY RESUSCITATION

## Principle

- Main idea of CPR is to circulate blood and oxygen throughout the body at all times.
- Chest Compressions circulate blood and oxygen.
- For CPR with rescue breathing, give 30 compressions followed by 2 breaths.
- For compression only CPR, compress @ 100 compressions/min without interruption or delay.
- Do not interrupt compressions for more than 10 seconds unless absolutely necessary.

## Procedure for Adults

- Make sure the victim is laying flat on their back, face up, on a hard firm surface.
- Locate the center of the chest, between the breasts.
- Place the palm of one hand on top of the lower half of the sternum.
- Place the second hand on top of the first hand. You may overlay or interlock your fingers.
- Position your shoulders directly over the victim's chest and keep your elbows locked straight.
- Think of moving at the waist and use your entire body to push up and down on the chest.
- If you use your arms and not your body - your arms will become fatigued quickly and you will not be pushing at the right rate and depth.
- Compress the chest 2 inches at the rate of at least 100 compressions per minute.
- Match compressions with the song "Staying Alive" by Bee Gees as it is 100 beats per minute.
- After each compression, allow the chest to return to its normal position before compressing again.
- This chest recoil allows the heart to refill with blood and provide the most effective CPR possible.



**Saving life out weighs the risk of rib fracture which is common during CPR. Do not stop chest compressions since doctors can repair ribs but not death.**



## Procedure for Children (Age 1 to Puberty)

Children and infants are likely to go into cardiac arrest due to respiratory event rather than a cardiac condition. Therefore oxygenation and circulation need to be initiated as quickly as possible. The procedure is same as the adult except the following:

- If heart rate is less than 60 beats per minute with signs of poor perfusion, start CPR.
- If the child is small in size, you may use one hand for compressions.
- You may use the 2<sup>nd</sup> hand for compression, to maintain an open airway or to stabilize the victim
- Give a lower volume of air (enough to raise chest) when giving breaths as compared to an adult.
- CPR ratio for 1-person CPR is 30 compressions to 2 breaths
- CPR ratio for 2-person CPR is 15 compressions to 2 breaths (for adults it remains 30:2)
- If alone, perform CPR for 2 minutes (or 5 sets of 30:2) before leaving to call help.
- For pulse > 60/min with inadequate breathing, give 1 breath every 3-5 seconds (12-20/min).

## Procedure for Infants (Birth to Age 1)

Same as children except the following:

- Place 2 fingers of 1 hand on top of the sternum about a fingers tips length below the nipple line.
- Place the 2<sup>nd</sup> hand on the infants head to maintain an open airway and to stabilize the victim.
- Push on the chest using the 2 fingers to a depth of about 1.5 inches (@ 100/min).
- For two-person CPR use the Two-Thumb Encircling Technique for compressions which is:
  - Encircle the infant's body with both hands (as in going to pick up the child).
  - Compress the chest while on a hard firm surface with both thumbs.
  - The second rescuer should deliver breaths after every 15 compressions.
  - Do not remove hands from the body while breaths are being delivered (to allow for immediate resumption of compressions).



# CHOKING

## Adult or Child

- Ask the person: "Are you choking?", "Can you speak?"
- The universal distress signal for choking is grabbing the throat with one or both hands.
- If the person does not grab the throat then other signs include:
  - Inability to speak
  - Weak, ineffective coughing
  - Noisy breathing or high-pitched sounds while inhaling
  - Difficulty breathing
  - Bluish skin color
  - Loss of consciousness if blockage is not cleared
- Do not perform first aid if the person is coughing forcefully and able to speak (strong cough can dislodge the object on its own).
- Lean the person forward and give 5 blows to the back with the heel of your hand.
- If this does not work, stand behind the person and wrap your arms around the person's waist.
- Make a fist with one hand. Place the thumb side of your fist just above the person's navel, well below the breastbone.
- Grasp the fist with your hand.
- Make 5 quick, upward and inward thrusts with your fists.
- Alternate between 5 blows to the back and 5 thrusts to the abdomen until the object is dislodged and the person breathes or coughs on their own.



Place one fist just above the person's navel with your thumb against the abdomen



## Pregnant Woman or Obese Person

- Position your hands a little bit higher than with a normal Heimlich maneuver (described above), at the base of the breastbone, just above the joining of the lowest ribs.
- Proceed as with the Heimlich maneuver, pressing hard into the chest, with a quick thrust.
- Repeat until the food or other blockage is dislodged or the person becomes unconscious.

## Infant under the age of 1

- Assume a seated position and hold the infant facedown on your forearm, resting on your thigh.
- Thump infant gently but firmly five times on the middle of the back using the heel of your hand.
- The combination of gravity and the back blows should release the blocking object.
- Hold the infant face up on your forearm with head lower than the trunk if the above doesn't work.
- Using two fingers (at same location as chest compressions) give five quick chest compressions.
- Repeat the back blows and chest thrusts if breathing doesn't resume.
- If the victim becomes unconscious, stop back blows and chest thrust and start CPR.



## Unconscious Person

- Lower the person on his or her back onto the floor and clear the airway.
- If a blockage is visible, use a finger to sweep it out. Blindly sweeping a finger can push the object deeper into the airway (can happen easily in young children).
- Begin CPR if object remains lodged and the person doesn't respond (chest compressions used in CPR may dislodge the object)
- Every time you open the airway to give a breath, look for the object:
  - If you see the object, remove it.
  - If you do not see the object, attempt 2 breaths, and continue CPR.

# **SHOCK**

Shock is a medical emergency in which the organs and tissues of the body are not receiving an adequate flow of blood. This deprives the organs and tissues of oxygen and allows the buildup of waste products. Shock can result in serious damage or even death.

## **Signs and Symptoms of Shock**

### Initial symptoms and signs:

- Pale face, fingernails and lips (body shutting down blood vessels that supply skin).
- Rapid pulse (heart attempting to maintain blood circulation).
- Weak pulse (inability of heart to beat strongly enough).
- Faintness, dizziness, drowsiness, confusion & nausea (reduced blood supply and oxygen level).

### Signs of worsening or severe shock:

- Fingernails, toes, lips (extremities) becoming bluish in color.
- Severe breathlessness (blood containing insufficient oxygen).
- Severe thirst (blood's fluid content having been reduced).
- Possible loss of consciousness (reduced blood supply to brain). Unsuccessful treatment may cause death.

## **Management of Shock**

The aim is to prevent worsening of shock and to make best use of the limited circulating blood as follows:

- ABC: Follow the **A**irway, **B**reathing and **C**irculation procedure.
- Control any severe bleeding.
- Call for urgent medical assistance.
- Reassure the casualty, keep talking to him and record his responses.
- Stay alert for any signs of confusion, drowsiness, faintness or nausea.
- Do not move the casualty unless absolutely essential (it can cause more bleeding and damage).
- Do not give casualty anything to eat or drink or allow him to smoke.
- Raise the legs (unless they are fractured) above the level of the heart by laying the casualty down and elevating the legs with a folded coat or blanket (head low enables gravity to assist blood flow to brain – legs high encourages blood to remain in central area of body).
- Loosen any tight clothing.

- Dress any wounds or burns.
- Cover the casualty with a coat or blanket.
- Monitor ABC regularly.
- If casualty seems:
  - Likely to vomit.
  - Breathing becomes difficult.
  - Loses consciousness.

Then place him in the recovery position.

- If breathing stops, commence Artificial Respiration / CPR.

## **ANGINA**

A type of chest pain caused by reduced blood flow to the heart.

### **Sign and Symptoms of Angina**

- Pain and discomfort in the centre of the chest.
- Pain may radiate up the neck, into the jaw and down either arm, though commonly felt in the left arm.
- There may be breathlessness, pallor of the skin and blueness of the lips.

### **Management of Angina**

- Decrease the heart load by not allowing the casualty to walk around.
- Help him to sit down and rest in the most comfortable position.
- Loosen any tight clothing and reassure him.
- If he is carrying angina medication in a pill form then instruct him to place the prescribed dose under his tongue or inside the cheek (depending on what the label indicates).
- If medication is in spray form, administer it under the tongue.
- 2-3 min later, check if pain is passing. If persisting, the casualty may be suffering a heart attack.

## **HEART ATTACK**

A heart attack happens when the flow of oxygen-rich blood to a section of heart muscle suddenly becomes blocked and the heart can't get oxygen. If blood flow isn't restored quickly, the section of heart muscle begins to die.

### **Signs and Symptoms of a Heart Attack**

- Sudden onset of crushing pain in the centre of the chest.
- Pain sometimes radiate outwards to the arms, back or throat.
- Shortness of breath.
- Faintness and sometimes loss of consciousness.
- Nausea and sometimes vomiting.
- A pale cold clammy skin and profuse sweating.
- A weak, fast pulse that may also be irregular (an average healthy pulse is 60-80 beats / min).
- Anxiety and distress — sometimes manifested by the casualty that he is dying — or confusion.
- Sometimes an immediate collapse (cardiac arrest) leading to disappearance of pulse.

### **Managing a Heart Attack**

- Don't allow the victim to move around.
- If the victim is conscious, help him or her to sit down, supporting the head, shoulders and bent knees with cushions pillows or rolled-up blankets (this puts less strain on the heart than if the casualty were to lie down).
- Ask the casualty to relax.
- Call for emergency medical assistance as a matter of urgency.
- Loosen any tight clothing at the neck, chest and waist.
- Check the casualty's circulation (pulse) and breathing.
- If the casualty loses consciousness place him in the recovery position.
- Continue to monitor breathing and circulation (pulse).
- If breathing stops, commence artificial respiration.
- If heart stops (cardiac arrest), commence cardiopulmonary resuscitation (CPR).

# **STROKE**

A stroke occurs when the blood supply to your brain is interrupted or reduced. This deprives your brain of oxygen and nutrients, which can cause your brain cells to die. A stroke may be caused by a blocked artery (ischemic stroke) or a leaking or burst blood vessel (hemorrhagic stroke).

## **Signs and Symptoms of Stroke**

- Severe headache (usually comes on suddenly).
- Impaired mobility ranging from:
  - Complete loss of movement and feeling in arm or leg on one side of body (serious)
  - Clumsiness or perhaps a drooping eyelid (minor).
- Difficulty in swallowing.
- Slurred or garbled speech, indicating an altered level of consciousness.
- Pounding pulse.
- Possible turning of head and eyes to one side.
- Flushed face.
- Different sized pupils.
- Possible seizures.

## **Management of Stroke**

All stroke casualties (regardless of degree of severity) require immediate medical attention. Even if they cannot communicate, they may still be able to hear and understand; therefore they need to be constantly reassured.

### **Consciousness Victim:**

- Support the head and shoulders as you lay him down. Put pillows under to keep them slightly raised and then tilt head to one side.
- Loosen any tight clothing (all the time telling casualty what you are doing).
- Wipe any drool from the mouth.
- Keep airway clear and open.
- Seek medical assistance.

### **Un-Consciousness Victim:**

- Follow the ABC Procedure – Airway, Breathing, Circulation (pulse) – be ready to resuscitate.
- Seek medical assistance urgently.
- Place the casualty in the recovery position.
- Check ABC at regular intervals while waiting for medical assistance.

# **FITS**

A seizure or fit is a sudden disturbance of nervous system function due to an abnormal nerve discharge in the brain.

## **Tonic Seizures**

During a tonic seizure, the person's muscles initially stiffen and they lose consciousness. The person's eyes roll back into their head as the muscles (including those in the chest, arms and legs) contract and the back arches. As the chest muscles tighten, it becomes harder for the person to breathe – the lips and face may take on a bluish hue, and the person may begin to make gargling noises. Many observers have the misconception that the person is in danger of “swallowing their tongue,” so they attempt to put something in the person's mouth. Swallowing your tongue is actually impossible, and any attempt to open the now tightly clenched jaw may cause more harm than good.

## **Clonic Seizures**

During a clonic seizure, the individual's muscles begin to spasm and jerk. The elbows, legs and head will flex, and then relax rapidly at first, but the frequency of the spasms will gradually subside until they cease altogether. As the jerking stops, it is common for the person to let out a deep sigh, after which normal breathing resumes.

## **Tonic-clonic (grand mal) seizures**

A tonic seizure is typically accompanied by a clonic seizure – it is rare to experience one without the other. When both are experienced at the same time, this is known as a tonic-clonic seizure (formerly known as a grand mal seizure)

## **Signs and Symptoms of a Major, Tonic or Clonic Fit**

- A cry as air is forced through the vocal cords.
- The casualty falling to the ground (which may cause an injury) and lying rigid for a few seconds with the back arched and the jaws clenched.
- A congested, blue face and neck.
- Jerking, spasmodic muscle movement and improved color as normal breathing resumes.
- Froth emanating from the mouth, which is sometimes bloodstained (due to tongue or inside cheek having accidentally been bitten).
- Possible loss of bladder or bowel control.
- Confusion and lack of awareness of what has happened for several minutes after consciousness.
- Exhaustion and tendency to sleep deeply following a fit.



## Management of a Major Fit

Main aim is to:

1. Protect the casualty from injury without restricting his movement.
2. Do not hold someone down or stop the convulsions.
3. Do not put anything (including food or drink) in casualty's mouth during a fit.
4. Reassure the casualty when seizure has passed.

If you are confronted by someone who is having a major fit, do the following:

- Ease the casualty's fall to prevent injury.
- Keep calm and prevent onlookers from rushing towards the casualty.
- Clear a space around the casualty.
- Place some padding under or around the head if possible.
- Let the seizure run its course.
- When seizure has abated loosen any tight clothing, talking reassuringly to the casualty as you do so because a semi-conscious person is easily scared.
- When jerking movement has stopped:
  - Check and – if necessary – open his airway.
  - Monitor breathing.
  - Place him in the recovery position.
- Remain with casualty and reassure him.
- If casualty falls asleep, do not disturb him but check ABC (airway, breathing, circulation).
- Call for emergency medical assistance in the following instances:
  - Seizure continues for more than 5 minutes.
  - Unconsciousness for more than 10 minutes.
  - Not regaining consciousness between fits.
  - Casualty's first seizure.
  - Rapidly recurring series of major seizures (status epilepticus) which can be exhausting and fatal.

## **HYSTERIA**

Hysteria is caused by psychological stress. Although it can resemble an epileptic seizure, there is an important distinction i.e. a hysterical casualty will not lose consciousness! It should not be regarded as attention seeking behavior or dismissed as malingering (pretend to be ill). It is a genuine psychological reaction to stress and may be completely involuntary.

### **Signs and Symptoms of Hysteria**

- Strange behavior with casualty shouting, screaming or waving arms or legs around.
- Rolling on the ground becoming rigid.
- Sometimes holding breath or going into trance-like state (sleep like state without response to stimuli) but not losing consciousness or injuring himself (casualty is aware of what is going around him).

### **Management of Hysteria**

- Do not slap to bring him round.
- Clear away onlookers.
- Be understanding but firm, and speak in a no-nonsense tone to try to calm him down.
- Distract him by offering a warm drink if possible.
- After calming down encourage him to see a doctor.
- At any time you are unsure of his condition or he becomes unconscious, place him in recovery position and seek immediate medical assistance.

## **EMERGENCY OXYGEN**

Emergency oxygen can be given for many breathing and cardiac emergencies. It can help improve hypoxia (insufficient oxygen reaching the cells) and reduce pain and breathing discomfort. Always follow local protocols for using emergency oxygen. Consider administering emergency oxygen for:

- An adult breathing fewer than 12 or more than 20 breaths per minute.
- A child breathing fewer than 15 or more than 30 breaths per minute.
- An infant breathing fewer than 25 or more than 50 breaths per minute.
- A person who is not breathing.

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