FIRST AID

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FIRST AID & CPR TRAINING MANUAL

(All the things you wish you knew once an emergency happens)

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INTRODUCTION

First Aid, as the name implies, is the initial aid given to an ill or injured person on the scene of the emergency (e.g. car accident) until advance medical help arrives, or until the person can be taken to a hospital. First aid is not complicated, but, it requires a calm approach because with panic an emergency can become more serious. The best way to achieve this is with proper training and regular practice.

First aid can include the recognition of a problem, seeking medical help immediately, and providing as much care as possible until paramedics arrive. It may mean holding someone's hand until help arrives, or it may mean doing CPR. First aid does not include things like; administration of medicine or drugs, stitching a wound, surgery, re-aligning broken bones, or in-depth diagnosis of an illness.

Most of us rarely think about learning first aid, but if we ever need it, the information is vital in easing physical discomfort caused by illness or injuries, and many times can make the difference between life and death.

This manual is not intended to replace, but to rather accompany, practical training. All the topics are taught with a strong emphasis on prevention, recognition, and treatment.

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WHY HELP

Most of us wish to live in a world where we like to think that our fellow citizens would help us if we needed help. But, along with this, we must be prepared to render help to someone else. There is a also a moral obligation. We cannot claim to be 'good' people, as most of us do, if we cannot take some time and effort into helping someone during an emergency. So, there is a moral obligation to help.

Sometimes we may be legally obligated to help because of a legal requirement. This is the case for doctors, nurses, workers in an old age facility, day care workers, parents for their children, lifeguards, paramedics, fire fighters, etc.

The legal obligation to help also extends to employers. All employers have the legal responsibility to assure that all employees have access to first aid, at the work place, by a first aid trained worker. Because of this, a certain number of workers must be trained in first aid. Employers cannot use the excuse, "I didn't know," if a worker becomes injured and there are legal complications.

BARRIERS TO HELPING

Some people are afraid to help because of;

- A fear they will do something wrong. There is a small chance this might occur. But it's important to keep in mind that some first aid is better than nothing, and as long as one sticks to proper techniques learned in a first aid course there should be no fear of making things worse.
- A fear they will be taken to court afterwards. This has never happened. Just stick to what was taught in a first aid course, make your intent to help, and there should be no fear of reprocautions.
- A fear of getting involved. Why not get involved? You are helping another human being. Imagine if we all lived our lives not getting involved in anything at all.
- A fear they will contract some horrible disease. Wear gloves and use a breathing barrier and things should be fine. It's not easy to catch something, even if you try.
- A false sense that someone else will help. This, unfortunately, is what leaves many injured people needing help for a long time. Someone else may eventually help, but many times no one helps.

DISEASE TRANSMISSION

The risk of contracting a disease from someone needing first aid remains relatively low. However, to reduce the chance even more, when rendering first aid, always wear non-latex gloves, and, if performing CPR use a face shield or rescue breathing barrier.

After first aid always dispose of any materials used, e.g. bandages, gloves, etc., safely. These materials should be placed in a biohazard container.

Latex gloves should not be used because there is a risk of either the rescuer or the casualty being allergic to latex. Whenever possible use non-latex, either nylon or vinyl gloves.

These supplies should be kept in all first aid kits. And when used should be replaced immediately.

After first aid all rescuers should immediately wash thoroughly their hands using warm water and soap.

If you ever do come in contact with someone else's bodily fluids you should consult your physician immediately. They will probably administer anti-biotics and monitor for any signs of infections.

THE INITIAL STEPS

MAKE SURE THE AREA IS SAFE

- There is no one more important than you. This is something that you must keep in mind when faced with a situation where someone else needs help. This is not a selfish statement, in fact it's a selfless statement. It means that first you need to take care of yourself before you can take care of anyone else. Rushing into a situation without first checking for safety may result in you also becoming injured which means you will not be able to help the other person, and you are now also a casualty.

Some of the things to check for include;
- Fumes, smoke, fires, or potential fires.
- Falling objects.
- Broken glass on the floor where you'll be kneeling.
- Electrical wires/sources.
- Oncoming traffic if on the road.

If there are dangers you have three possible choices.
1. Get help and stay away from the danger.
2. Move the casualty away from the danger.
3. Eliminate the danger if you can do so safely (e.g. open windows to expel fumes).

Remember, if you get hurt you are not going to be able to help anyone else.

APPROACH FOR A QUICK ASSESSMENT

Try to check for a response. Are they conscious, talking, in pain, etc.

GET MEDICAL HELP

- Don't hesitate to get help when someone is hurt. In most cities the best and fastest way to get help is to call your local ambulance service. Know in advance how this service works in your area. Make sure you know the number. Teach your children the number as well because they may need to call if you are injured or ill. Have this number posted on your phones. And make sure you can explain to them where you are located.
- During an emergency, e.g. someone is unconscious; do not waste time calling your relatives or your friends. Even your family doctor will most likely not be able to help over the phone. Call for an ambulance immediately.
- When calling for an ambulance stay calm and answer the questions that the dispatcher will ask. They need to know things such as where you are, what happened, how many people are hurt, and who is doing first aid. When they have finished asking you questions then they will tell you to hang up, don't do so until they are done talking to you. They may also be able to give you instructions over the phone of how you can help until the ambulance arrives.
- If you are traveling make sure you know the emergency number of where you are going, ahead of time. In Europe it is 112.

HELP THE PERSON

Caring for the person can mean many different things, depending on what they need. For example, if it's a medical condition help them take their medication, if they are injured treat the injury and call for help. If they are unconscious then you begin the ABCs.

The rest of this manual will discuss the various first aid emergencies that you may encounter, and how to treat these problems.

PERFORMING THE ABCS / CPR:

AIRWAY:

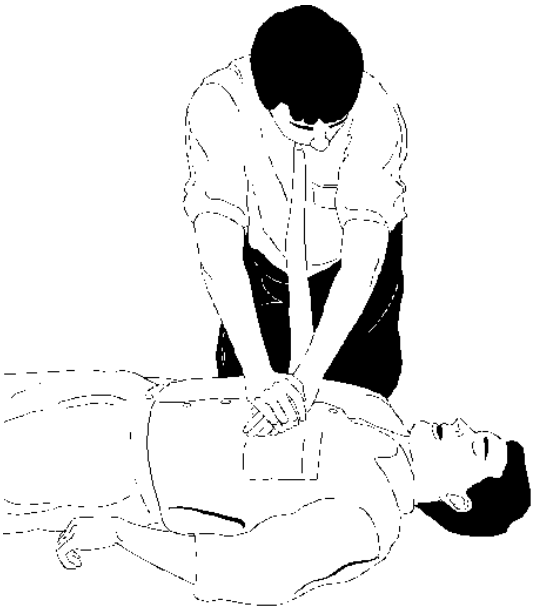
- Place them on their back, carefully so as to not cause any injury.
- Open their airway by tilting their head back and lifting their chin upwards. This will remove the tongue from blocking the airway. Keep the airway open.

BREATHING:

- Check for Breathing by looking, listening, and feeling for air (10 seconds).
- If they are breathing then monitor and put them in the recovery position until the paramedics arrive.
- Give breaths:
  - If it is an adult give them 2 breaths, allowing the air to come out in between.
  - If it is a child or an infant give them 5 breaths.
- If the air goes in then go to "Circulation."
- If the air does not go in, re-position the head-tilt/chin-lift a bit further back and try blowing again. Be careful not to injure their neck.
- If the air still does not go in then go to "Circulation" but check the mouth for the food after doing CPR.

CIRCULATION:

- If they were not breathing then start CPR (compressions and breaths).
- It is 30 compressions to 2 breaths. Continue until paramedics arrive or until something changes with the person (reassess at this point).
- If the air was not going in make sure you check the mouth, to see if the food came out, after each set of 30 compressions. If you see the object in their mouth take it out and reassess breathing.
- Compressions must begin as quickly as possible, even if air is not going in.

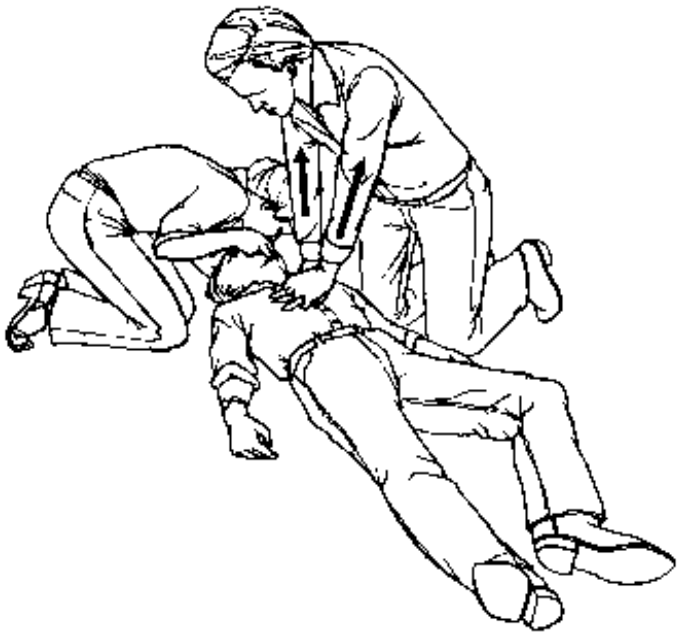


Compressions:

- Four to five cm deep.
- Fast.
- 30 compressions then 2 breaths.
- Do not stop unless something changes or ambulance arrives.
- Ribs will break, keep going.

TWO-RESCUER CPR:

In a situation where there are 2 trained first aiders, and they work well together, one rescuer can perform the compressions while the other rescuer gives the breaths. Nothing changes, all the steps are the same. This is a bit more sufficient and less tiring for the rescuers. If the rescuer doing the compressions becomes tired they can switch positions.



RESPIRATORY & CIRCULATORY SYSTEMS

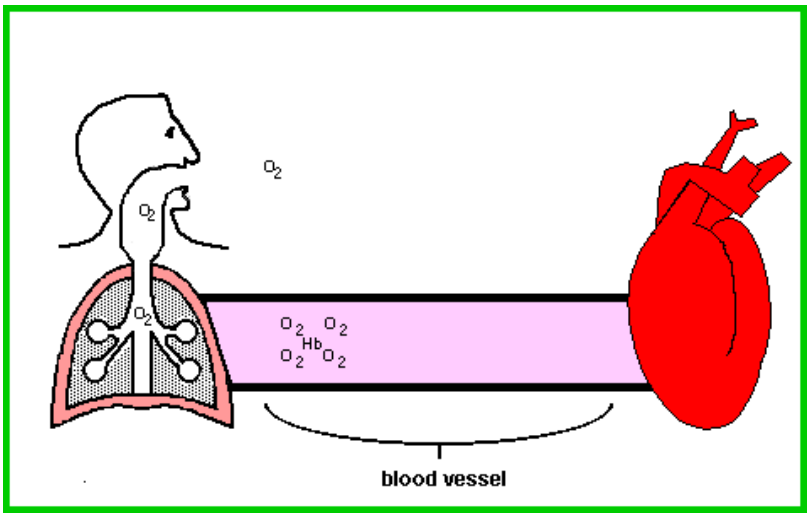
RESPIRATORY SYSTEM:

- This is made up of your mouth, nose, throat, air passages, and lungs. The main purpose of this system is to bring fresh air into your body and the get rid of used up air. The respiratory system can get into trouble if the person can't breathe properly.

CIRCULATORY SYSTEM:

- This is made up of your heart and blood vessels. The heart is responsible for pumping blood throughout your body. The blood contains the fresh air which was obtained from your lungs. The blood also brings used air back to the lungs to be breathed out. As you can imagine, the respiratory and the circulatory system work very closely together. When there is a problem with one it usually causes a problem with the other.

The heart is a very special organ. It has its own electrical system. It is made of a muscle called the myocardium which can transmit electrical signals. Just like any other tissue it requires oxygen to work properly. The heart gets oxygen through its very own circulatory system called the coronary arteries. These arteries intertwine throughout the myocardium to supply the tissue with fresh oxygen. It is when there is a problem with the coronary arteries, or with the electrical system, that a person may have a heart attack.



Oxygen that we breathe in is carried from the lungs, through blood vessels, to the heart. From the heart the oxygen is carried, through the blood, to all the organs and tissues. An interruption of this system is life threatening.

CLINICAL & BIOLOGICAL DEATH

CLINICAL DEATH:

- This is when the lungs and heart stop working. Usually the lungs will stop first then shortly after that the heart will stop as well. All living tissue in the body needs oxygen to survive. Therefore, treating clinical death is vital to keeping the organs alive.

BIOLOGICAL DEATH:

- This is when brain cells begin to die because of lack of oxygen. Once the body does not have oxygen it takes about 4-6 minutes until brain cells begin to die. After about 10 minutes without air there is a high chance of irreversible brain damage.

Notes:

- Our goal as first aiders is to prevent biological death by getting help for the person as soon as possible, and performing CPR if the casualty becomes unconscious and their breathing stops.
- Remember, as first aiders we will not know if they have brain damage so we must do everything we can to help them. We are not allowed to decide if someone is biologically dead or not. Only a medical doctor can pronounce some biologically dead.

Time is very critical. The sooner first aid is started and the sooner medical help arrives, the greater chance the injured person has of surviving.

PROBLEMS WITH BREATHING

A problem with the airway will cause a problem with breathing. A problem with breathing will cause a problem with circulation. This results in a life threatening emergency.

Respiratory distress:

- This is where the casualty is still able to breath, but is having problems doing so.

Respiratory arrest:

- This is where breathing has stopped all together, and it is now an emergency. The casualty may still be conscious or may be unconscious.

Four major breathing emergencies:

- Asthma.
- Hyperventilation.
- Severe allergies.
- Choking.

Other things that can cause a problem with breathing and circulation include:

- Heart attack.
- Suffocation.
- Smoke inhalation.
- Drowning.
- Physical injuries to the airway.
- Heart attack.
- Strokes.
- Bleeding.
- Shock.

STOMA:

Some people, because of surgery, may now breathe through a stoma. This is a small opening on their throat. They do not breathe through their mouth or nose anymore. if you encounter a casualty that is a stoma breather you should; close their mouth and nose, do a head-tilt and chin-lift, and breathe into the stoma. The air will go directly into their lungs.

GASTRIC DISTENSION:

This occurs when a rescuer blows too hard, or too much air into a casualty. If the lungs fill up the extra air will go into the casualty's stomach. As a result the casualty may end up vomiting. Always use caution when doing CPR. Blow slowly and just barely enough to make the casualty's chest rise. If you notice their stomach bloating to NOT push on it. This will cause them to vomit for sure. Simply assure a proper head-tilt/chin-lift, and reduce the force and amount of air you are blowing in.

ASTHMA

Definition:

- Asthma is a disease that you can be born with or develop later on in life. Some people outgrow it as they get older. When someone has an asthma attack their air passages become very tight, they spasm, and secrete mucous. This makes it very difficult to breathe. Usually breathing out may be more difficult than breathing in.

Causes:

- Physical exertion, emotional stress, irritants in the air such as dust or smoke, cold dry air, or hot humid air.

Warning signs:

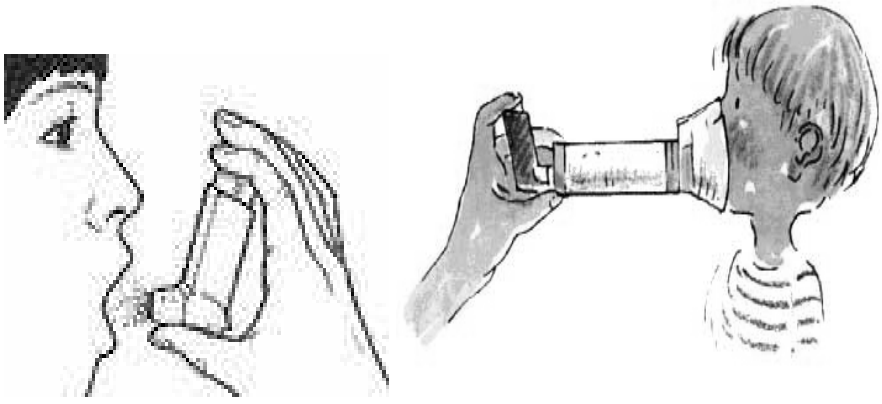
- The person will be gasping for air, there will be wheezing sounds, they will appear weak and tired, they will be anxious, and will become unconscious if the condition worsens.

Helping:

- Find out if they are having an asthma attack by asking them. Help them take their medication. But remember that you are not allowed to administer it. All you can do is help them take it. Help them move away from the cause of the asthma attack. Activate the ambulance if the medication doesn't help or they become worst.

Notes:

- There are different types of medication but they all involve spraying of the medicine into the mouth. Anyone with asthma should always be wearing their medic alert tag, and should always have their medication with them.
- Children may need what's called a spacer to assist them in taking their medication. This is a plastic tube that is attached to their puffer on one end, and a mask on the other end. This is needed because children may not have learned yet how to control their breath, which is needed to inhale directly from the puffer.



HYPERVENTILATION

Definition:

- Hyperventilation is when someone is taking in more oxygen than they really need. This causes an imbalance of the various gases in your body. Although it may sound good to get in more oxygen, in fact it is not, and can cause havoc with the breathing mechanism.

Causes:

- A person may hyperventilate because of anxiety, emotional stress, or by doing it on purpose by breathing too fast.

Warning signs:

- The person will be breathing too fast, they will look anxious, weak, tired, and they will become unconscious if the condition continues.

Helping:

- Help move the person away from the cause (e.g. watching an accident scene), talk and reassure them, have them sit down, ask them to breathe with you so they will slow down their breathing rate. If the condition continues then you need to activate the ambulance because this can result in unconsciousness.

Notes:

- Do not have them breathe into a paper bag this will only make them much more anxious.
- Do not leave them alone as they may become unconscious and stop breathing.

ANAPHYLAXIS

Definition:

- An over-reaction of the body's immune system, where different chemicals are released to try and destroy the perceived invader.

Causes:

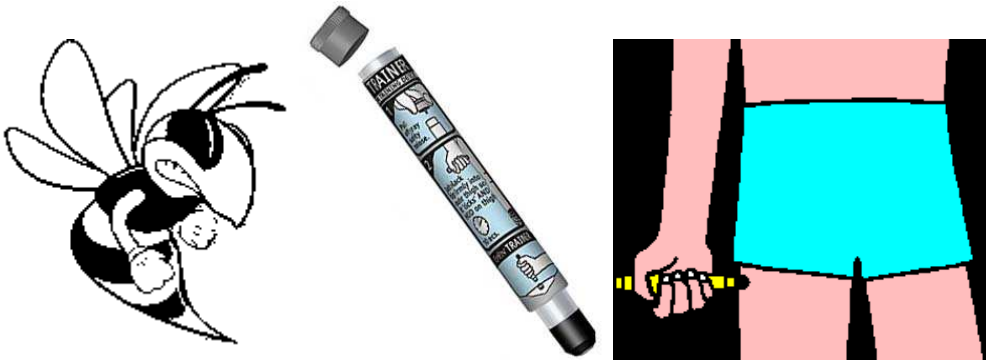
- Medication, foods (e.g. eggs, nuts, kiwis, strawberries, sea food, etc), perfumes and soaps.

Warning signs:

- There will be redness, hives, and itchiness in the area. There will also be swelling which can be life threatening if this is near the throat or face because it can restrict breathing.
- Unconsciousness.

Helping:

- Immediately remove the person from the cause. Call for an ambulance immediately.
- Assist them in taking their medication (epi-pen), or epinephrine.
- The epi-pen is injected in the upper thigh, where there is plenty of tissue and blood flow. First, the top safety cap needs to be removed which allows the spring inside the tube to work once the epi-pen is thrust into the leg muscle. Once injected the epi-pen should be held in place for about 20 seconds to make sure all the medicine enters the tissue.
- This needle is a single dose, meaning you cannot use the same needle more than once.
- If the person has a second epi-pen, do not use it until the symptoms return.



Notes:

- Their medication will help control the swelling. The ambulance must be called even if they have medication because it will only last for about 10-15 minutes.
- People can develop allergies at any time throughout their lives.
- People can develop allergies to anything in the environment, even the most natural products.

CHOKING

Definition:

- This is where something is stuck in your throat and you are having trouble breathing. It can be a partial obstruction where you can still cough and breath, or it can be complete where you cannot breathe at all.

Causes:

- Eating too fast, swallowing without chewing, laughing and talking while eating. For children and infants some other common causes include broken balloon pieces, toys, other objects that they may find lying around.

Warning signs:

- If it's a partial obstruction the person will be attempting to remove the object by coughing.
- If it's a complete obstruction the person will not be able to cough, they will be turning blue, they will look scared.

Prevention:

Babies and young children are extremely prone to choking accidents. Always supervise them while they are eating. Make sure there are no small objects that babies may put in their mouths. Balloons are extremely dangerous because if they break the rubber can easily become lodged in their throat, and it is very hard to remove.

Helping:

PARTIAL OBSTRUCTION:

- If some air still goes in and out, and they are able to cough, the person is suffering from a partial obstruction.
- Just stay with the person and encourage them to keep coughing. Do not slap them, or shake them, or give them anything to eat or drink.
- Because they are coughing most likely they will be able to expel the object by themselves. By interfering, unnecessarily, you might make it worse.
- If the cough is very weak, or becomes ineffective, then treat as a complete obstruction.

COMPLETE/SEVERE OBSTRUCTION:

- This is a situation where no, or very little, air is going in and out.
- The person needs help as soon as possible.
- They only have a few seconds until they become unconscious.

See steps below.

If you ever need to help a child make sure you obtain permission from the parent first. However, if the parent is not in the immediate vicinity then help the child right away.

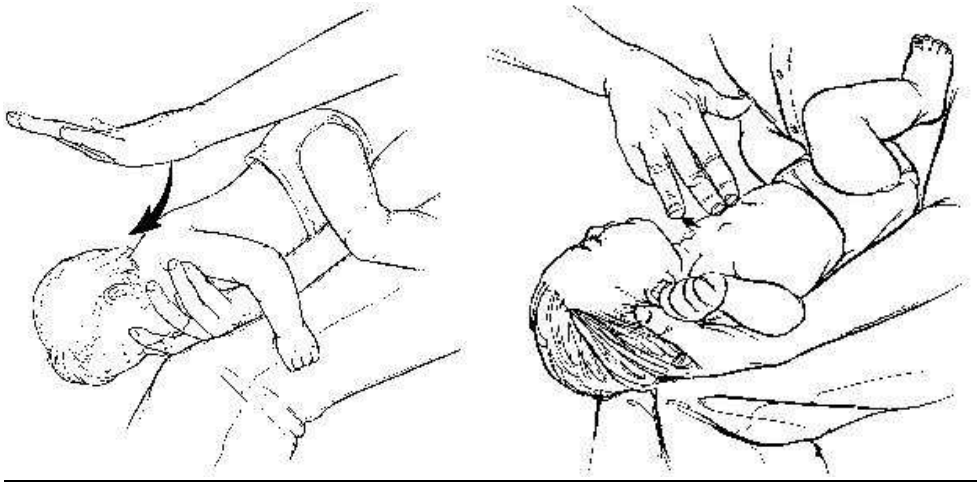
CONSCIOUS CHOKING ADULT OR CHILD-COMPLETE/SEVERE OBSTRUCTION:

- Ask them if they are choking.
- Ask them if you can help, if they say 'yes,'
- Step beside them, use one hand to support them from the front, use the other hand to deliverer 5 back blows between their shoulder blades.
- After each back blow quickly check to see if the object came out.
- Then, deliver 5 abdominal thrusts, one at a time, with increasing force.
  - If they are pregnant, peform chest thrusts instead of abdominal thursts.
- Continue until the food comes out or until they become unconscious.
- If the food comes out make them comfortable and activate ambulance if they need it.
- If they become unconscious;
  - Lay them down.
  - Call for an ambulance.
  - Check their mouth for the food (food may come dislodged when the muscles relax).
  - Follow the A, B, Cs.

- The thrusts need to be quick and forceful. And if unsuccessful, the force needs to be increased.
- If they are visibly pregnant, or you can't get your arms around their abdomen then you must do chest thrusts on the breastbone.
- If they are considerable shorter than you, such as a child, kneel down behind them and do the exact same thing.
- Never pick up a child to put them on a table or a chair simply because you don't want to kneel down.
- After wards, this person should go see a doctor to make sure there was no internal damage done during the procedure.

CONSCIOUS CHOKING INFANT-COMPLETE/SEVERE OBSTRUCTION:

- Lay them on your arm face down and give 5 back blows.
- Turn them over face up and give 5 chest compressions.
  - After each blow or thrust quickly assess to see if the object came out.
- Continue until the food comes out or until they become unconscious.
- If the food comes out make them comfortable and get medical help if they need it.
- If they become unconscious;
  - Lay them down.
  - Activate ambulance.
  - Check their mouth for the food.
  - Follow the 3 Cs explained above.



Hold the baby securely so that they don't slip and fall.

- Once the food comes out take the baby to a doctor to check for any injuries that may have occurred from the rescue attempts.
- Never shake a baby upside down to try and remove a choking object.
- Always support the head, as they do not have developed neck muscles yet.

UNCONSCIOUS CHOKING:

From conscious choking, once they become unconscious:

- Carefully lay them on the ground.
- Get someone to call for an ambulance.
- Perform a tongue-jaw-lift.
- Check the mouth for the food.

Airway:

1. Open, and maintain, their airway by tilting their head back and lifting their chin upwards.

Breathing:

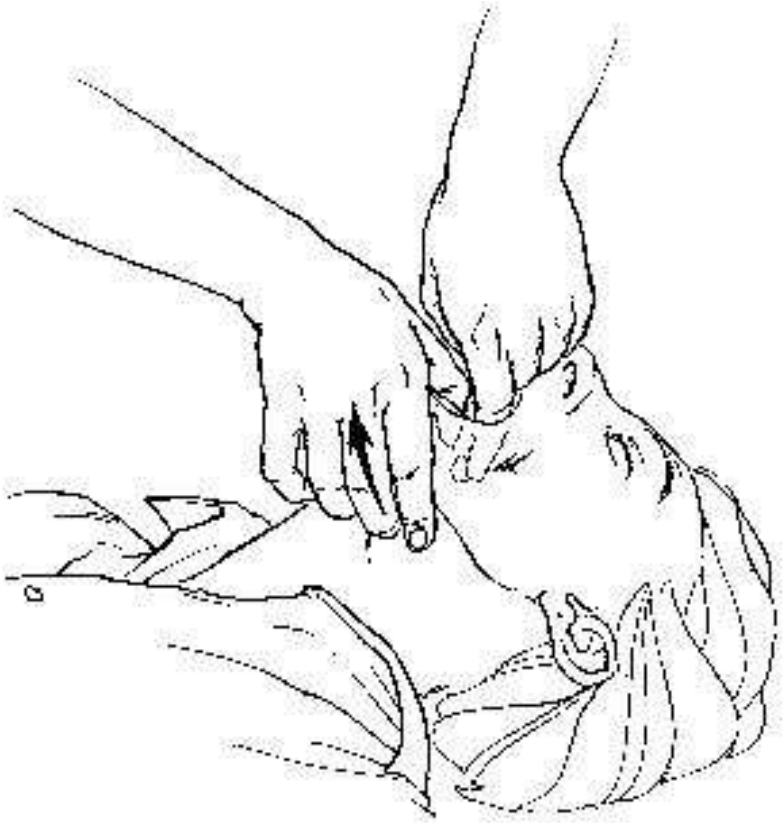
1. Check for Breathing by looking, listening, and feeling for air (10 seconds).
2. If they are not breathing give them 2 breaths, allowing the air to come out in between.
3. If the air does not go in, re-position the head-tilt/chin-lift a bit further back and try blowing again. Be careful not to injure their neck.
4. If the air still does not go in,
5. Start CPR 30 compressions.
6. After 30 compressions perform a tongue-jaw-lift and check the mouth for the foreign object.
7. Remove the object if you see it.
8. Give them 2 breaths.
9. Go to step 3.
10. Repeat steps 5 to 10 until air goes in. Once air goes in then go to Circulation below.

Circulation:

1. Start CPR; 30 compressions to 2 breaths.
2. Continue until paramedics arrive or until something changes with the person (reassess at this point).

TONGUE-JAW LIFT:

- This is done when you want to see if there is food inside an unconscious person's mouth.
- It is done by opening their mouth and grabbing their tongue (like a tongue depressor) with your thumb. Now you can see inside their mouth.
- If you see an object use your other hand to pull it out.
- Never put any foreign objects, e.g. tweezers, inside their mouth to pull out the object.
- If the object is liquid or hard to get out, turn the person on their side and try scooping it out from this position.



HEART DISEASE

Circulation refers to blood circulating throughout the body. Many things can cause a problem with circulation, e.g. bleeding, shock, breathing problem, allergies, etc. For this section we will focus on blood vessel disease, which can lead to heart disease, which can lead to a heart attack.

Blood vessel disease:

- This is sometimes referred to as coronary artery disease, cardiovascular disease, heart disease, atherosclerosis, arteriosclerosis. But, the bottom line is that it all means the same thing.

Definition:

- It simply refers to the narrowing of the blood vessels by plaque buildup. This will cause poor blood flow to any part of the body, including the heart, which can cause a heart attack, or the brain which can cause a stroke. In the case of a heart attack the blood vessels (coronary arteries) have become blocked and no longer allow blood to flow through to the heart muscle. As a result the heart muscles cannot function properly and will soon die.

Although heart disease will kill more adults than any other disease, it is considered a preventable disease. Heart disease is not something that happens over night. It takes years to develop, and can therefore be prevented through a few simple lifestyle changes in habits. The earlier on someone adopts healthy habits the less chance they will have of developing heart disease. These controllable habits are referred to as modifiable risk factors.

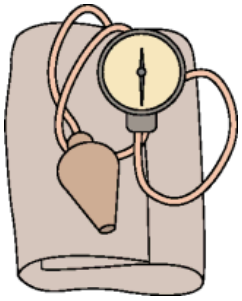
MODIFIABLE RISK FACTORS (FACTORS WE CAN CONTROL):

- **Smoking**: there is no doubt that smoking is harmful. What some people don't realize is that it is not just a risk for lung cancer. The poisonous chemicals in smoking are absorbed by the blood and carried throughout the body. These poisonous chemicals cause high blood pressure, cause your arteries to become very stiff, and cause plaque to build up in the arteries.

- **Obesity**: having excess fat puts a lot of stress on your body. It also causes high blood pressure, high triglycerides, and is associated with high sugar levels in the blood. Losing excess fat is not easy but following a healthy eating style and being physically active is the best approach.

- **Sedentary lifestyle**: Exercise is one of the best things you can do for your body. It strengthens the heart muscle, lowers blood pressure, controls excess calories from being stored as fat, strengthens bones and muscles, etc. To stay healthy exercise should be done almost daily. So, go for a walk, jog, swim, play tennis, squash, do an aerobic class, etc. Whatever you need to do to get your body moving.

- **High blood pressure (HBP)**: blood pressure is defined as the force the blood is exerting on your arteries as it flows through them. So high blood pressure is when the pressure is more than it should be. It is also called hypertension. If the pressure is too great the blood vessels stretch beyond their capacity which will lead to small cracks. These small cracks are wounds which must heal. This means that as they heal there may be scar tissue that develops in the area which may impede blood flow. Or, if pressure is too high, the blood vessel may simply burst causing an aneurysm. Despite contrary belief there are no warning signs for HBP except to have it checked by your physician at least once a year.



- **Poor diet**: most people in industrialized countries have poor eating habits. Way too much processed, refined, and high saturated-fat foods, too much sugar, etc. And, not nearly enough fresh fruits and vegetables. Poor diets can easily lead to high cholesterol, obesity, HBP, type 2 diabetes, etc.

- **Salt:** in about 25% of the population excess salt (sodium) intake will increase blood pressure. Most people eat about 4 times as much salt as what is needed. And this excess can be harmful.

- **Stress:** when it is excessive and continuous stress has also been shown to contribute to heart disease. It seems that the chemicals the body releases when under stress can cause damage to the circulatory system.

The more risk factors you have the higher your chances of developing blood vessel disease. There is no cure for blood vessel disease. That is why it is so important to start healthy life style habits early on.

NON-MODIFIABLE RISK FACTOR (FACTORS WE CANNOT CONTROL):

- **Age**: as we get older there is a bigger risk of heart disease simply because we've had more time to damage our bodies. There is nothing we can do for this, so don't worry about it too much.

- **Gender**: men have a higher chance for two main reasons:
  - Men carry excess fat higher up in the bodies, which affects internal organs. The belief is that this causes higher blood sugar and higher cholesterol.
  - Estrogen (which men don't have) has been shown to reduce the chance of heart disease in women.

- **Diabetes**: this disease will cause damage to small blood vessels, which affects circulation. This can lead to heart disease, kidney failure, blindness, and amputations. There is more on diabetes later on.

- **Genetics**: as unfair as this may seem there are some people genetically predisposed to developing heart disease. If heart disease has been a problem with older family members then this may also be a problem for you. Therefore you should discuss this with your family doctor and monitor your health, so if there is a problem it is caught early. In addition, focusing on the modifiable risk factors is vital.

HEART ATTACK

Definition:

- When something goes wrong with the heart's electrical system, or when an artery in the heart muscle ruptures or becomes blocked. Regardless, the heart is no longer able to circulate blood effectively, including to its own tissues. As a result, the heart may stop working.

Warning signs:

- Pain/tightness/numbness in the shoulders, arms, neck, back, chest.
- Bluish, pale skin.
- Rapid but weak pulse.
- Shallow rapid breathing.
- Nausea or vomiting.
- Unconsciousness.
- These warning signs may come and go, and maybe severe or mild. Even if the warning signs go away this person may still be having a heart attack and still needs immediate help.

Helping:

- Help them get in a comfortable position, make sure they are resting.
- Activate the ambulance.
- Reassure them that help is on the way.
- Check for medical history of a similar problem, as they may have medication (but only assist, do not administer medication).
- *If they have Angina (see following page).*
- If they wish, they may take one Bayer Aspirin, as this may prevent further damage to the heart muscle. Note, if they have asthma they may be allergic to aspirin – ask first!
- Do not give them anything to eat or drink.
- Stay with them all the time and comfort them.

Notes:

- It is extremely common for people to ignore the warning signs of a heart attack. Unfortunately, this is one reason why so many people die from this disease – because they don't get help soon enough. As a first aider it is your job to activate the ambulance as soon as possible.

CPR: If an unconscious person has stopped breathing you must begin CPR (chest compressions). The reason for this is that when breathing stops the heart will also stop soon after. So, CPR is needed to keep the blood moving throughout the body. Blood carries oxygen, and this is needed to keep organs alive.

ANGINA

Angina is a serious medical condition, diagnosed by a cardiologist, where the coronary arteries are partially blocked. As a result, when under stress, the heart is not able to get enough blood and cannot work properly.

The most common warning sign is pain, but it can also include any of the other warning signs for heart attack.

If the casualty says they have angina they should also have medication with them. You can help them take it (e.g. get the bottle, open the bottle, put the pill in their hand) but they must do the actual administering.

This medication is called nitroglycerine. It is designed to cause blood vessel dilation, which means it causes the blood vessels to relax so they expand. As a result, more blood can flow through.

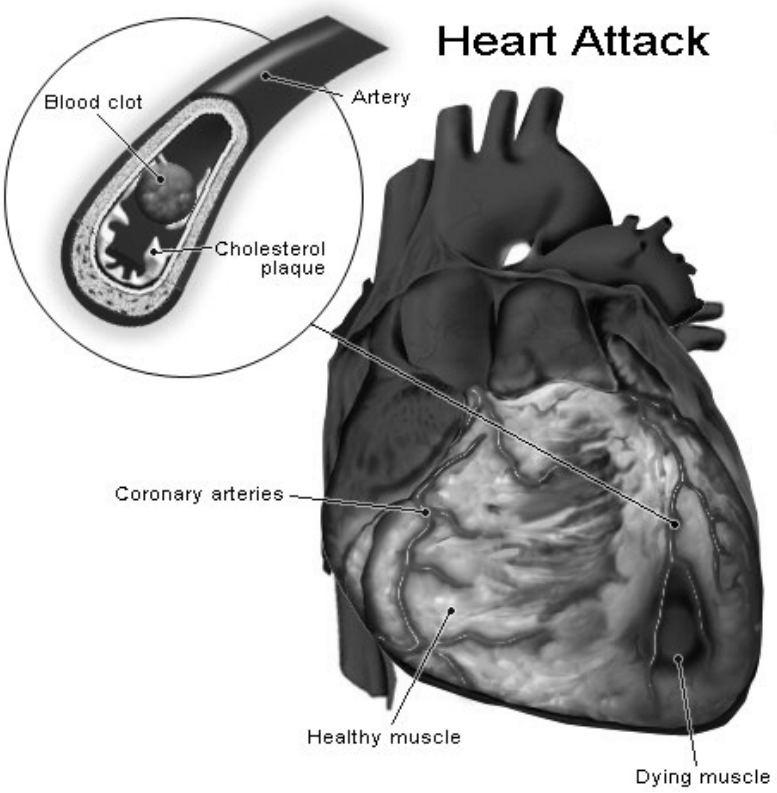
Nitroglycerine does not cure heart disease. It does not dissolve blood clots, it simply enlarges blood vessels temporarily.

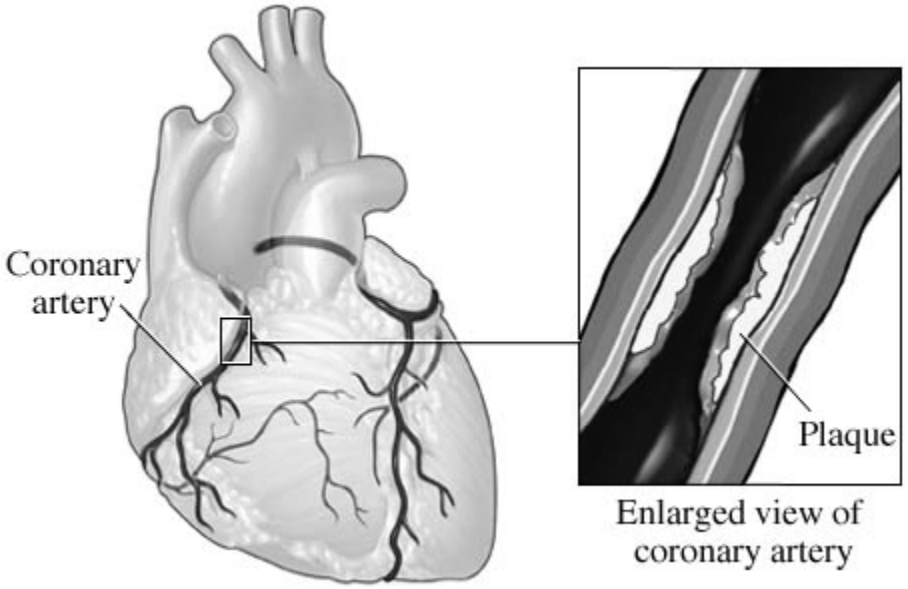
Nitroglycerine comes in 4 forms:

- Pill: which they must place under their tongue for quick absorption. If they swallow the pill it will take much longer to be absorbed.
- Spray: like a puffer, which they spray into their mouth.
- Paste: which they put on their skin.
- Patch: which they wear all day.

The most they should take is 3 doses, 3 minutes apart each. If after 10 minutes they do not feel better, or they become worse at any time then it means the medication is not working and this person needs advance medical help immediately.

Warning: If they have taken any erectile-dysfunction medication (e.g. Viagra) within the last 48 hours they should not take nitroglycerin because both medicines have a similar affect (blood vessel dilation) which can lead to very low blood pressure, unconsciousness, and death. Ask first!





WHAT IS CPR

CPR stands for Cardio Pulmonary Resuscitation;

- Cardio refers to the heart.
- Pulmonary refers to the lungs.
- Resuscitation refers to the attempts made to try and keep someone alive.

CPR is done only when someone is unconscious, is not responding, and has stopped breathing. CPR is never done on anyone unless these conditions are met! There are many causes of these circumstances, such as; heart attacks, strokes, drowning, electrocution, poisoning, severe injuries, etc. But, regardless of the cause the treatment is the same.

CPR involves two main things;

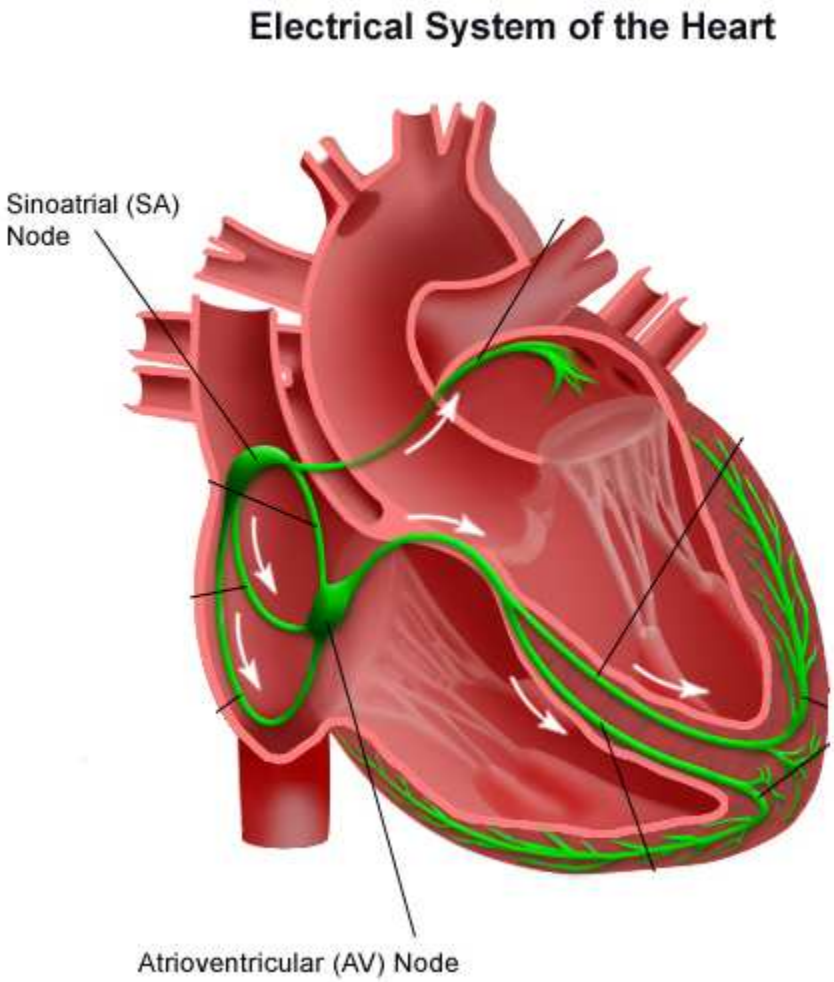
1. Blowing air into the casualty (because they are not breathing on their own)
2. Compressing their chest to squeeze the heart. When the heart is squeezed blood will circulate. By circulating blood we also circulate oxygen that is in the blood stream.

The main purpose of CPR is to keep organs alive by supplying them with oxygen.

A few things you need to know;

- CPR, when done correctly, is only 25% as good as 'real' breathing and 'real' circulation.
- CPR is only successful at saving someone about 3% of the time, but it's better than 0%.
- The person's chance of survival is greatly increased with early defibrillation and early advance medical care.
- Ribs will break when you compress on someone's chest, but if you don't do CPR they will die for sure.

The steps for CPR need to be practiced in a real classroom setting. This is not something you can just watch or read about then try to perform.



The heart is the only organ that can work totally independently of the brain. It can do this because it has its own electrical system, which causes contraction of the muscles, which creates circulation.

The SA node initiates the electrical impulse. The impulse travels around the atriums (top 2 chambers) causing them to contract. Once the impulse reaches the AV node, the node holds onto it for a fraction of a second. Then the AV node releases the impulse and it travels around the ventricles (the bottom 2 chambers) causing them to contract.

A malfunction of the electrical system can result in a heart attack and cardiac arrest. However, before the heart stops totally it will go through fibrillation. This is an irregular heart rhythm.

HEART RHYTHMS

Regular heart rhythm

Bradycardia (irregularly slow)

Tachycardia (irregularly fast and uncoordinated)

If tachycardia worsens it will lead to arrhythmia, also called fibrillation, very irratic electrical activity. At this point the rhythm may become so irregular that circulation will stop and the person will become unconscious. Soon after that breathing will stop and the heart will stop shortly after that. CPR, along with defibrillation, is the best hope of resuscitation.

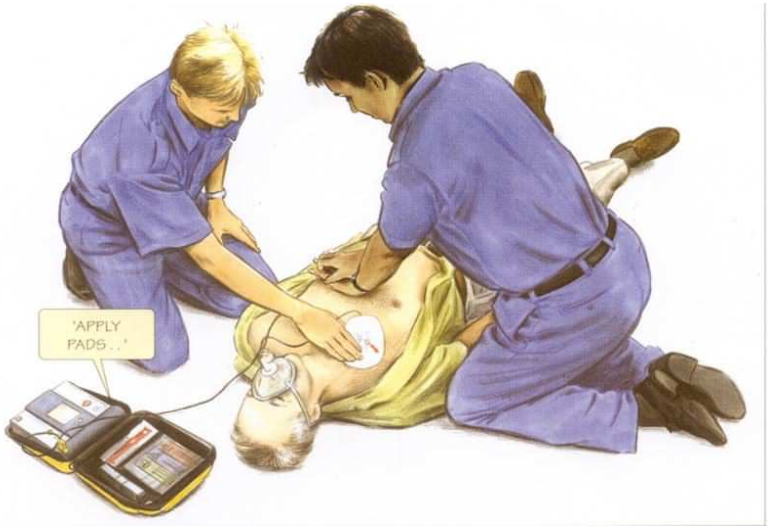
DEFIBRILLATION – AED

- Fibrillation is what happens in 80% of the cases when someone is unconscious from a heart attack. This is a condition where there is still electrical activity in the heart, but it is very irregular and erratic. As a result, the heart is not working properly to create circulation.

- An Automated External Defibrillator (AED) is a machine that is designed to administer an electric shock. The shock will momentarily cause the heart's electrical system to stop, then it will begin to work again with a regular rhythm. The main reason this works is because the heart has its own, self-sustaining, electrical system.

- A defibrillator can detect electrical signals from the heart and determine if a shock would benefit the person. The main factor is whether or not the heart is fibrillating. If the electrical rhythm is normal, or there is no electrical activity at all, then the machine will not shock.

- AEDs are slowly becoming more common. They have been shown to save many lives if trained bystanders use them on the spot, before the paramedics arrive. The key to this lifesaving machine is that it must be administered as soon as possible, because the casualty's chance of being saved decreases by about 10% with every minute of delay. CPR is still an important component in helping someone with no signs of circulation.



USING A DEFIBRILLATOR:

- These machines should only be attached/used on an unconscious non-breathing person. They are designed for adult and children over 25kg in weight.

- Bear the person's chest. Remove all clothing, including bras and jeweler. If needed shave the areas where the pads will be placed.

- Remove the covering from the pads and place one pad on the right hand side between the shoulder and the neck, just over the collarbone. Place the second pad on the left side about 3 inches below the left breast over the ribs. Look at the diagrams on the pads for more info.
- Plug the pads into the machine.

- Turn the machine on.

- Once the machine is on follow the machine's instructions fully. It will tell you exactly what to do. See next page for sample.

- First, the machine will analyze the heart's electrical activity. It will do this every two minutes regardless of what happens next.

- If the machine detects a non-shockable rhythm then the machine will tell you to begin CPR. In the meantime it will give you a two-minute count down, at which point it will re-analyze.

- If the machine detects a shockable rhythm it will begin to charge. When it is ready it will tell you to deliver a shock. You do this by simply pushing the shock button.

- Before delivering the shock make sure no one, including you, is touching the person, as this is electricity and can be very dangerous.

- After the shock the machine will tell you to begin CPR. In the meantime it will give you a two minute count down, at which point it will re-analyze.

- This process will be repeated to a maximum of 9 times. At which point the machine will not shock again. But, if needed, continue CPR until paramedics arrive.

NARRATION OF A DEFIBRILLATOR:

Below is an example of what the instructions might sound like from a defibrillator once it is turned on. It will provide the user with step-by-step instructions. Always follow these instructions.

- Attach pads onto bear chest.
- Plug pads into machine.
- Analyzing.
- Do not touch the patient.
- Analyzing.
- Shock advised.
- Charging.
- Press the yellow button.
- Shock delivered.
- Begin CPR (for 2 minutes).
- Stop CPR.
- Analyzing.
- Do not touch the patient.
- Analyzing.
- Shock advised.
- Charging.
- Press the yellow button.
- Shock delivered.
- Begin CPR (for 2 minutes).
- Stop CPR.
- Analyzing.
- Do not touch the patient.
- Analyzing.
- No shock advised.
- Begin CPR.

STROKE

Warning signs:

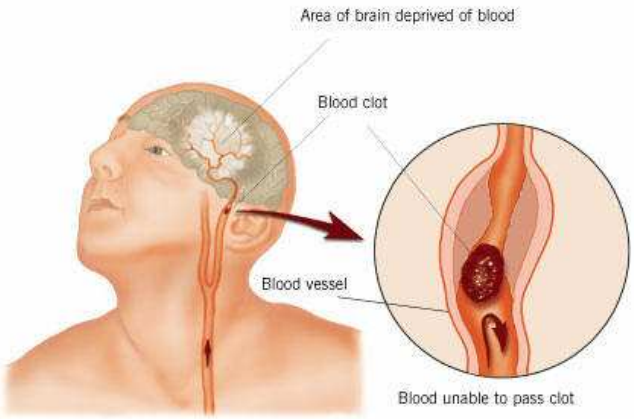
- Numbness, tingling, paralysis on one side of the body, extremities, hands, and feet.
- Slurred speech, not making sense.
- Trouble understanding you.
- Uneven pupils.
- Nausea or vomiting.
- Decreased level of consciousness.

Helping:

- Help them get in a comfortable position on their side, make sure they are resting.
- Activate the ambulance.
- Reassure them that help is on the way.
- Keep them warm with a blanket.
- Do not give them anything to eat or drink.

Notes:

- It is extremely common for people to ignore the warning signs of a stroke. Unfortunately, this is one reason why so many people die from this disease – because they don't get help soon enough. As a first responder, it is your job to activate the ambulance as soon as possible. Sometimes a stroke is called Cerebral Vascular Accident (CVA). Mini stroke is a condition where the casualty experiences similar warning signs as that of a stroke, but these warning signs go away on their own. This is a warning sign that a serious stroke may occur and the person needs medical help immediately. This condition is sometimes called Transient Ischemic Attack (TIA).



SHOCK

Definition:

- Poor circulation to the vital organs. Shock is very serious and life threatening. The casualty may not know that they are in shock.

Causes:

- Dilated blood vessels, bleeding, severe dehydration, all leading to a drop in blood pressure, which results in poor circulation. These can be caused by severe emotional trauma, physical injury, illness, etc.

Warning signs:

- Unusual behavior (e.g. very calm or very anxious), lack of pain to an injury, rapid breathing, rapid but weak pulse, bluish skin (cyanosis), unconsciousness.

Helping:

- Activate the ambulance right away. Assist the person to lie on their side to improve circulation, treat any injuries, help them take any medication for an illness.

Once someone goes into shock it is like a domino effect. The body tried to compensate by increasing the heart rate. However, this leads to a fatigued heart, and blood loss if there is an injury. As a result the heart needs more blood so it speeds up even more. The best way to help is to treat the cause of the shock.

FAINTING

Definition:
- This is very similar to shock except it is a temporary condition.

Causes:
- It usually occurs because of a temporary decrease of blood flow to the brain, which can be caused by not eating properly, standing up too fast, or low blood pressure.

Warning signs:
- The casualty feels faint, or collapses.

Helping:
- If they feel faint have them lie down which will help with circulation. If they faint they will usually wake up in a few seconds. Encourage the person to stay lying down for a few minutes until they feel better. If they do not wake up within one minute, or they became injured during the fall then activate the ambulance, and treat any injuries.

Notes:
- If someone has fainted, even if they feel fine afterwards, they should still go see their doctor to rule out any major problem.

Recovery Position
(Semi-prone)

The recovery position can be used with anyone that is unconscious but breathing, or is not feeling well, or is dizzy. It is a comfortable position that keeps the airway open and allows for easy circulation throughout the body. Use a blanket to keep them warm.

WARTS

Remembering this acronym is a simple way to remember the basic treatment for anyone in shock or suffering an illness or medical emergency.

Warmth: if they feel cold use a blanket, a jacket, or your body heat to keep the person warm.

ABCs: Always monitor their breathing and circulation. If they are unconscious someone should constantly be checking breathing. If they are not breathing someone should be doing CPR. If they are conscious listen to their breathing patterns, listen for gasping of air, look at their skin color for indications of poor circulation.

Rest and reassure the person, this will make them feel better.

Treat the injury or illness as best as you can.

Semi-prone: keep them lying on their side (unless you are doing CPR) on the ground. This improves circulation and reduces the chance of choking from vomiting.

MEDIC-ALERT TAGS

People with medical conditions, such as allergies, diabetes, asthma, etc., should wear medical alert tags. These tags alert rescuers and paramedics of pre-existing conditions so better treatment can be administered. They may be worn as bracelets, necklaces, anklets, or may be a card they keep in their wallet.

EXTERNAL BLEEDING

Definition:

- This is where the blood vessels and the skin are cut and blood is escaping the body.

Causes:

- Damage to the skin caused by trauma. Can be a laceration (clean cut), abrasion, or avulsion (with skin still hanging).

Helping:

- If it's a minor bleed allow some bleeding to take place as this will help clean the wound. Then wash with warm water and soap, apply a dressing to keep it clean, change the dressing every few hours, and monitor for signs of infection.
- If the bleeding is severe than apply the RED principle:
  - Rest: make sure the person is resting so as to decrease the heart rate and blood pressure.
  - Elevate: raise the injured limb above the heart to slow down the bleeding.
  - Direct Pressure: put pressure directly over the wound to help control bleeding, tie the dressing in place. But, do not make the dressing too tight so as to restrict blood flow. Do not remove the dressing. Get medical help.

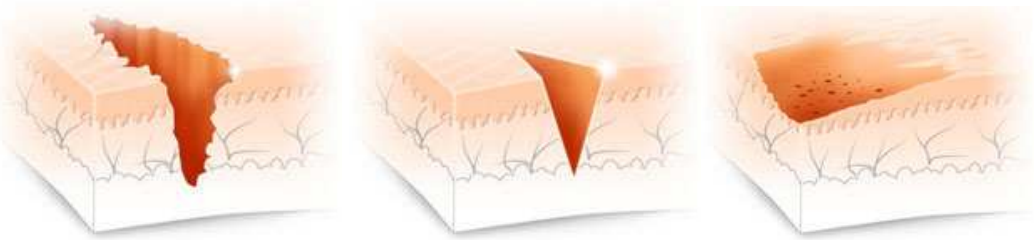
Notes:

- If there is an impaled object do not remove it as this can cause more bleeding. Instead, apply a dressing around the object then tie it in place to control bleeding. Take extra care not to move the object.

An infection has occurred if over the next few hours the wound becomes red, swollen, and fluid is produced. The infection needs to be taken care of before it becomes worse. If it has progressed to the point where the area around the wound is turning dark red or blue, or the blood vessels are changing color, medical help is needed immediately. This is now a life threatening emergency.

Different types of wounds

Rough Laceration | Smooth laceration | Abrasion

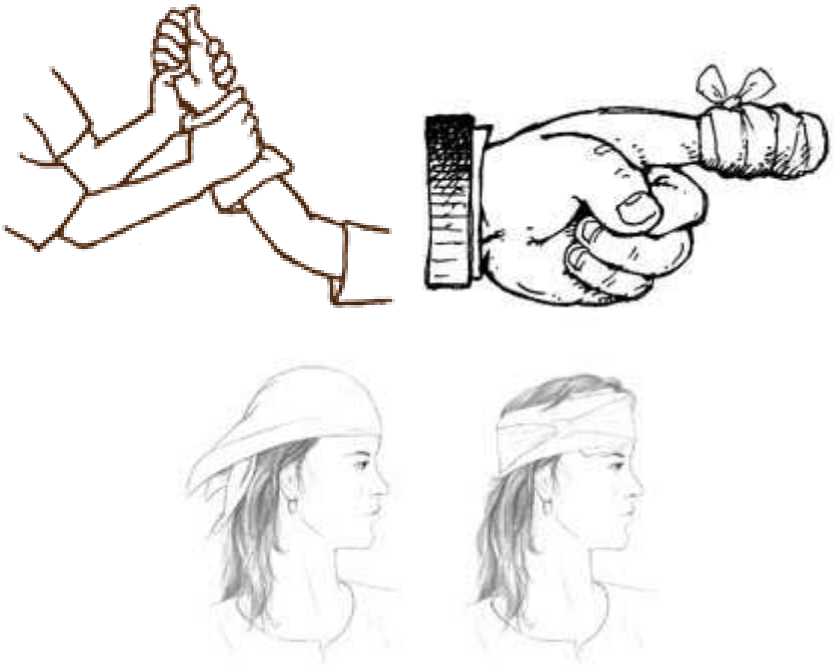


BANDAGING:

- Bandaging is something you would do to control severe bleeding. Ideally you want to use sterile dressings but they may not be readily available so use whatever you have (e.g. towels, clothing). The idea is to put constant pressure over the cut to control bleeding. You want to tie with enough pressure to control the bleeding but not so much so that blood does not get through to the remainder of the limb. If you restrict blood flow that area may die and may require amputation, so be very careful. Once you've tied the dressing you need to check to make sure you did not make it too tight, and check this every couple of minutes. For example, if you've bandaged a forearm here's how you check for circulation:
  - Compare both hands to make sure they are similar in temperature and color.
  - Check the hand to make sure it is not swelling or turning blue.
  - Ask the person if the hand feels numb or tingly.
  - If they lose sensation then it's too tight. Do not remove the bandage but loosen it a bit.
  - If the first dressing becomes soaked with blood then simply put another one on top. Do not remove the original one as you will be reopening the wound.

Notes:

- Always use caution when dealing with bodily fluids. Wear gloves and wash your hands immediately after.
- Keep in mind that the injured person may go into shock.



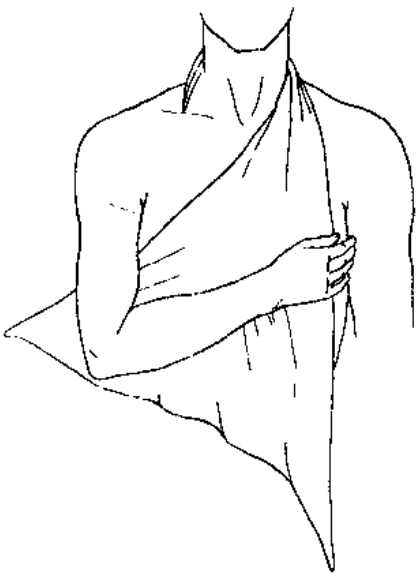
Amputation (e.g. a finger): treat the injured body part as you would any other cut. Then take the amputated body part and place it in a clean plastic bag. Take that first bag and place it in a second plastic bag containing ice. Make sure it goes to the hospital with the person, as they can sometimes reattach the body part.

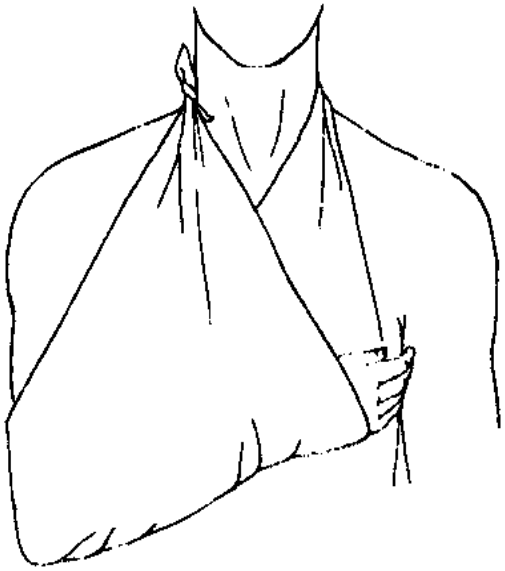
NOSE BLEEDS:

Have the person rest, have them pinch their nose just below the bone, and lean slightly forward. If the bleeding is severe, if it does not stop in about 10-15 minutes, or if there was an injury to the head or face, medical attention is needed. Do not have the person lean their head back, as all this does is have them swallow their blood, which is not desired.

SLING:

A sling is something you use to keep the hand/arm elevated above the heart and to make it more secure and comfortable for the injured person. It should only be used if it does not cause more pain or discomfort.





INTERNAL BLEEDING

Definition:

- This is where the blood vessels are broken but the skin is not, so the person is bleeding under the skin. Injured organs will result in internal bleeding.

Causes:

- Usually physical trauma, being hit, falling. Very common in car accidents.

Warning signs:

- Bruising, pain, tenderness, mechanism of the injury (what happened).
- There may be blood in their spit, vomit, or urine.

Helping:

- If it's a minor bruise on the arm or leg then rest the injured part, apply an ice pack for a few minutes, and watch for signs that it is not healing. If it's severe internal bleeding in the core of the body then active the ambulance, make sure the person is resting, treat for shock, apply an ice pack, but do NOT put pressure over the wound.

Notes:

- Internal bleeding is not always obvious, but can be life threatening.
- Infection can occur with any wound whether internal or external. If you suspect an infection then seek medical help immediately, as it can become life threatening. Watch out for warning signs such as; the wound is not healing or is getting bigger, discoloration, fluid discharge, and increased pain.

Hemophilia is a condition where the blood does not clot. The person lacks a certain type of protein in the blood. If someone suffers from this even small cuts or bruises can be life threatening. Immediately get medical help for them.

SECONDARY SURVEY

This involves checking for other non-life threatening injuries. Obviously it is done after the primary survey, which involves looking after the life threatening injuries. It is done by starting from the head and moving down to the toes while checking for bumps, bruises, bone deformity, and minor cuts. If anything is found it is treated and/or reported to the paramedics once they arrive. If the person is unconscious you do this by looking and by touching (feeling for bumps and broken bones). If the person is conscious you do this by talking to them and asking them questions. If you think there is an injury do NOT move that body part. Keep in mind that this is secondary to primary. Never ignore breathing problem, or CPR, or severe bleeding in order to do a secondary survey.

A few things to check for:

- Skin color.
- Pupils: same size, both react to light.
- Body temperature (feel forehead).
- Medical alert tags (necklace, bracelets, anklets).
- Breathing: rate and sounds.
- Pulse: rate, strength.
- Symmetry in limbs (left side compared with right side).
- Any deformity.
- Minor cuts or scrapes.
- Circulation to fingertips and toes.

Any information you obtain with a secondary survey should be passed on to the paramedics when they arrive.

BONE & JOINT INJURIES

Definition:

- This is an injury to a bone, a joint, a ligament, or a tendon.
- Joint injuries usually involve a dislocation. This is where the bone has popped out of its socket. This may be accompanied with a fracture, a strain, or a sprain. It may pop back in it may not. Either way seek medical help. Do not push it back into place.
- Tendons are strong tissues that connect a muscle onto a bone. When a tendon tears it is called a strain. When they become torn they take a very long time to heal, many times never as good as before, and sometimes surgery is required to reattach them.
- When a ligament is torn it is called a sprain. Ligaments connect a bone to another bone. These are found around the joints. Ligaments are very strong, but, as with tendons, when they tear they take a long time to heal, never as good as before, and sometimes surgery is required.

Causes:

- Any kind of force that is greater than what the tissue can withhold will cause such an injury. Some common activities include falling, twisting, getting hit, etc.

Prevention:

- Use safety equipment and wear it properly.
- Use seat belts and car seats.
- Keep joints and bones strong through weight bearing physical activities.

Warning signs:

- A ‘snapping’ noise.
- Pain.
- Deformity.
- Inability to move.
- Swelling.
- Bruising.

Helping:

- Apply the RICE principle.
  - Rest the injured body part and the entire casualty.
  - Immobilize the injured body part.
  - Cold compress over the injury to reduce swelling.
  - Elevate the injured body part if it can be done without causing further injury.
- Seek medical help.
- Do not rub or move the injured body part.
- If there is a protruding bone then bleeding will need to be taken care of by applying indirect pressure.
- Never straighten or realign an injured body part.

Notes:

- Bone fractures, if set properly, will heal fully in a few weeks and will be stronger than before. This happens because the area builds up with more calcification than before.

SPLINTS:

- The main purpose of a splint is to keep an injured body part immobilized (e.g. a broken leg). It should only be done if paramedics are going to take a long time arriving, or if you have to move the person. Never move or try to realign the injured body part. Always splint in the position found.

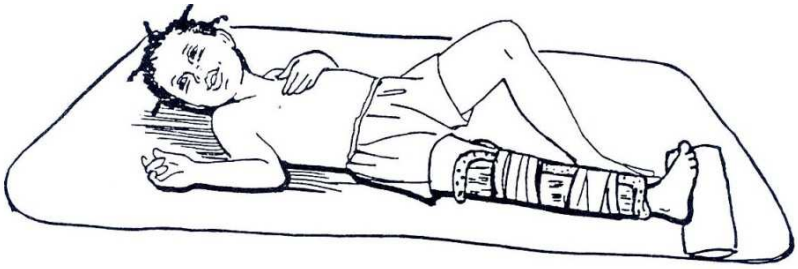
There are three main types of splints:

1. Anatomical: this means using a non-injured body part to immobilize an injured body part. E.g. to splint a broken left lower leg you would tie both legs together so the good leg provides support to the injured leg.

2. Soft: this means using something like a thick sweatshirt, a jacket, a towel, or a blanket to wrap around and immobilize. This kind of splint works very well with hand or ankle/foot injuries.

3. Rigid: this refers to using a firm object, such as a piece of wood, to immobilize. There are many types of rigid splints you can purchase or you can use whatever you see around you e.g. magazines, newspapers, umbrellas, etc.

Splinting the lower leg using a rigid splint.



Splinting and slinging an injured forearm.

SPINAL INJURIES

Definition:

- An injury to the muscles, bones, or nerves associated with the spine. The higher up on the spine it is the more serious the injury will be.

Causes:

- Any impact, direct or indirect, to these body parts. Very common in vehicle accidents, diving in shallow water, cycling accidents, sport accidents such as hockey and football, etc.

Prevention:

Warning signs:

- Mechanism of injury (how it occurred).
- Pain, numbness, or paralysis.
- Bleeding, swelling, or bruising around the head, ears, or nose.
- Unconsciousness.

Helping:

- Make sure the person doesn't move then get help.
- Hold them still. You need to and explain to them that they may have a serious injury and should not move.
- If they are unconscious do the CPR steps. Airway and breathing take priority.

CONCUSSION

Definition:

- An injury to the head or the brain. Literally bleeding in the brain or the area around the brain.

Causes:

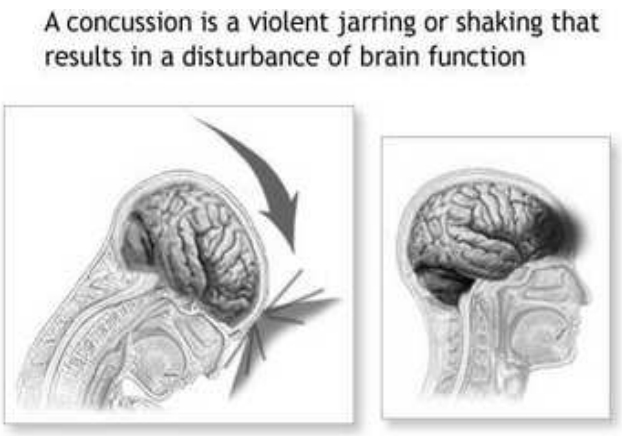
- Any impact, direct or indirect, to the head.
- May be associated with a spinal injury.

Prevention:

- Wear safety equipment and wear it properly.
- Know the safety rules of sports played.
- Use seat belts and car seats.
- Avoid alcohol intake when doing physical activity as it impairs sound judgment.

Warning signs:

- Mechanism of injury.
- Pain or numbness.
- Bleeding, swelling, or bruising.
- Confused.
- Loss of memory.
- Dizzy.
- Ringing in the ears.
- Nausea or vomiting.
- Unconsciousness.



Helping:

- Make sure the person doesn't move.
- Hold them still and explain to them that they should not move.
- Activate the ambulance right away.
- If they are unconscious do the CPR steps but open the airway with a modified jaw thrusts, as opposed to a head tilt.

Notes:

- Any time there is a spinal injury you should also suspect a concussion, and visa versa.
- Anyone with a suspected concussion should seek medical help as soon as possible.
- If they have become unconscious from the concussion then activate the ambulance right away.
- Many athletes will not admit to having had a concussion because then they can not play any more. Unfortunately that is why the condition becomes worse.
- Concussions are very life threatening.
- There is a condition called Baby Shaken Syndrome, where babies are injured by violent shaking.
    - Never shake a baby – on purpose, by accident, or when angry.
    - Never throw them up in the air – no matter how much they enjoy it.
    - Never twirl them around while holding them by their feet.

DIABETES

Definition:

- Diabetes is a disease in which your body cannot properly store and use fuel for energy. The fuel that your body needs is called glucose, a form of sugar. Glucose comes from foods such as breads, cereals, pasta, rice, potatoes, fruits and some vegetables. To use glucose, your body needs insulin. Insulin is made by a gland in your body called the pancreas. There are two major types of diabetes: type 1, and type 2.
  - Type 1 diabetes is when the body makes little or no insulin. It used to be called insulin-dependent or juvenile diabetes. This requires daily injections of insulin.
  - Type 2 diabetes: occurs when your body can't use the insulin it makes. If you have type 2, you may be able to keep your blood glucose levels in a target range by healthy eating, exercising, and taking medication.

There are 2 types of diabetic emergencies

- Hyperglycemia (diabetic coma): this is where there is too much sugar in the blood, and not enough insulin. It can occur by not taking medication and/or by eating things high in glucose.
- Hypoglycemia (insulin shock): in this case there is not enough sugar and too much insulin. This can occur if too much insulin is taken or not enough glucose has been consumed.

Causes of Hyperglycemia:

- Eating food high in simple sugars.
- Not taking medication (insulin).

Causes of Hypoglycemia:

- Not eating at the right times (missing a meal).
- Being over active without having planned for it.
- Taking too much medication.

Prevention:

- There is no way to prevent type 1.
- Type 2 can be prevented by following a healthy lifestyle of regular physical activity, healthy eating, and controlling obesity.

Warning signs:

- Dizziness, drowsiness, and confusion.
- Rapid breathing.
- Rapid pulse.
- Feeling and looking ill.
- Unconsciousness.

Helping:

- Help the person take a bit of sugar (candy, juice, fruit, etc). However, artificial sweeteners such as NutraSweet or Aspertene are not effective. Monitor their condition and do not hesitate to call an ambulance if their condition does not improve within a couple of minutes. Do NOT administer medication; this is reserved for medical professionals only.

Notes:

- Diabetes is a life-long condition. High blood glucose levels over a long period of time can cause blindness, heart disease, kidney problem, amputations, nerve damage, and erectile dysfunction. Good diabetic care and management can delay or prevent the onset of these complications.

Diabetes type 2 is on the rise dramatically in industrialized countries, especially in children. The experts believe that the main causes are that more people are over weight, most people do are not physically active, and most people have poor eating habits. This is affecting children as well not just older adults. Once someone becomes diabetic there is no cure. For the rest of their lives they will need to test their sugar levels and, depending on their condition, take medication or insulin injections. In addition, the damage that diabetes causes internally will continue.

The best cure for diabetes is prevention. Do some form of physical activity everyday, eat healthy and avoid junk food, and lose excess fat. And, if family members are diabetic there may be a genetic predisposition, which means all family members should be tested once a year.

Some people may be diabetic but have yet to seek proper diagnosis. This is a dangerous situation because damage is being done to the body if proper medical advice is not followed. There are warning signs that someone may have developed diabetes: excessive thirst and frequent urination, dry mouth and lips, trouble with vision, always hungry, always tired, unexplainable weight loss, breath that smells like a rotten apple or alcohol or very sweet.

SEIZURES

Definition:

- Seizures are neurological disorders where the signals in the brain become mixed up.

Causes:

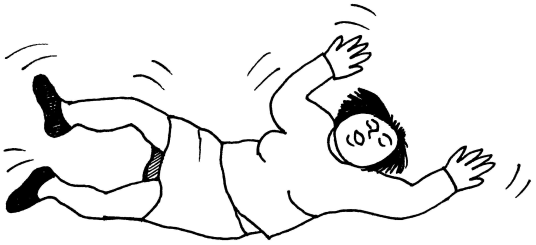
- The most common cause is from the medical condition called epilepsy. However, they can also be caused by concussions, allergic reactions, brain tumors, and high fever in children.

Prevention:

- If someone has epilepsy they may have medication to take which will reduce the chance of seizures. Other causes are hard to prevent because nothing is suspected of being wrong until the seizure.

Warning signs:

- Aside from the casualty having some kind of aura, e.g. smelling burnt toast, there are no warning signs that a seizure is about to happen. Once it begins the person may appear totally spaced out, may appear to be sleep walking, or may be on the ground convulsing.



Helping for Generalized Convulsive Seizures:

- Keep calm; let the seizure take its course. Do not try to stop the seizure or revive the person.
- Protect person from further injury by moving hard or sharp objects away, but do not interfere with the person's movements. Place something soft and small, such as a sweater, under their head, and loosen tight clothing around the neck.
- Do not force anything in the person's mouth. This could cause teeth and jaw damage, or choking. The person will not swallow their tongue during a seizure.
- Roll the person on their side as soon as possible, to allow saliva or other fluids to drain away, helping to clear the airway. Do not be frightened if a person having a seizure stops breathing momentarily.
- If a seizure goes on longer than 5 minutes, repeats without full recovery, or the person becomes injured, then call for medical assistance.

Helping for Partial Non-Convulsive Seizures (e.g. like sleep walking):

- Stay with the person, let the seizure take its course. Do not try to stop the seizure or revive the person. The person will be unaware of his or her actions, and may or may not hear you.
- Gently guide the person away from danger, and move dangerous objects out of the way.
- Partial seizures may spread to other areas of the brain. Do not be alarmed if a convulsive seizure follows.

Notes:

- Always be comforting, be gentle, and reassure the person, as it may take some time for them to become re-oriented.

BURNS

Definition:

- A burn is damage to the skin or underlying tissue caused by heat. There are 3 levels of severity; 1st (Superficial), 2nd (Partial thickness), 3rd (Full thickness).

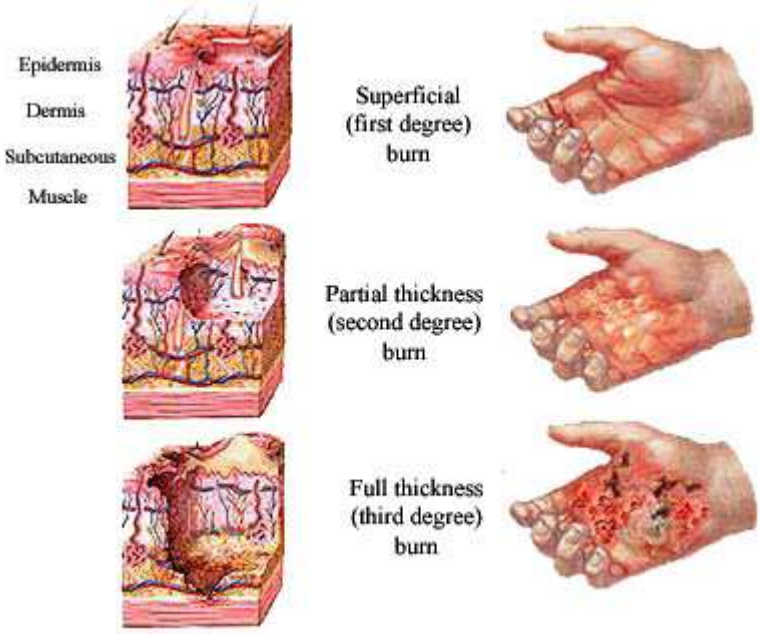
Causes:

- There are 5 main sources of burns; electricity, radiation (sun), thermal (something hot), chemical, and friction.

Prevention:

Warning signs:

- 1st degree: red, swollen, pain.
- 2nd degree: red, swollen, blisters.
- 3rd degree: damaged skin to the point where the underlying tissue is visible.



Helping:

- For 1st and 2nd degree burns you should cool the area immediately with gently running cold water for about 10-15 minutes, or until it has cooled off. Do not break any blisters as this will make the wound worse.
- For 3rd degree burns do not put anything on the burn, seek medical help immediately and treat for shock. 3rd degree is extremely life threatening even when a small body part is affected. If there is clothing on the burn do not remove it as this may also remove skin. There is a very high risk of infection from this kind of burn.

Notes:

- As with all other emergencies make sure the area is safe for you first. Watch out for live wires, hot objects, chemical spills, etc.
- The severity of a burn can also be increased pending on;
  - Which part of the body is affected, e.g. face, neck.
  - The amount of the body that is burnt, e.g. only finger tip or entire arm.
- With electrical burns check for an exit wound as well as treating for the entrance wound.
- With chemical burns flush the area with lots of water to get it off the casualty's skin.
- Never apply ointments, butter, or other home remedies on burns, as this may make the burn worse, keep the heat trapped in, or cause an infection.

HYPOTHERMIA

Definition:

- A drop in the core body temperature, even as little as 1 to 2 degrees Celsius, from the normal of 36 degrees Celsius.
- Sometimes this can happen within minutes, other times it takes a while to take place.
- It is sometimes accompanied by frost bite.

Causes & Prevention:

- Exposure to the cold.
- Not being dressed properly.
- Damp weather or being wet.
- Being tired or dehydrated.

Warning signs:

- Feeling cold.
- Shivering, which will stop as the condition worsens.
- Becoming confused and disoriented.
- Slow pulse and breathing rates, and eventually unconsciousness.

Helping:

- Get medical help.
- Get them inside near a heat source.
- Remove wet clothing and replace with dry clothing.
- If conscious give them warm fluids to drink – slowly.
- Avoid alcohol, caffeine, and carbonated drinks.

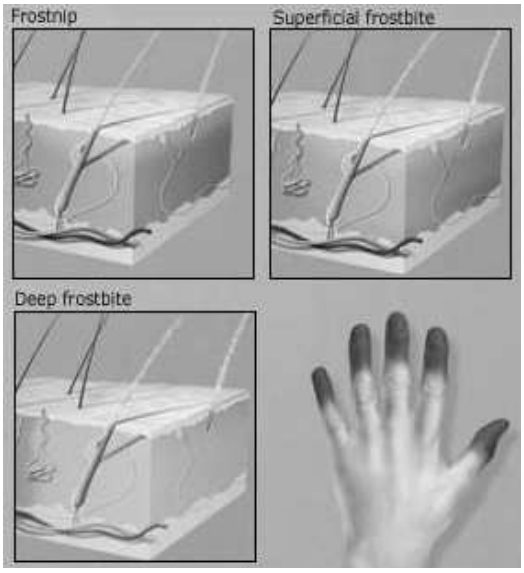
FROST BITE

Definition:

- A freezing of a body part, such as the hand, foot, face, etc. Superficial is the surface of the skin, whereas deep frost bite affects the underlying tissues.
- Sometimes this is accompanied by hypothermia.

Causes & Prevention:

- Exposure to cold, wind, wet conditions.
- Not wearing protective clothing.



Warning signs:

- Cold feeling.
- Numbness.
- Inability to use the body part.
- Tingling, then pain.
- As it gets worse all sensation will disappear.
- The skin will first appear white or yellowish. If the tissue dies it will become black charred color.

Helping:

- For deep frost bite get medical help.
- Warm up the body part slowly and gradually by wrapping it in warm clothing and/or submersing it in luke warm water – not hot water as it will burn the skin.

Notes:

- If there is a chance of the body part refreezing then it might be better to get medical help first before allowing it to warm up.
- Do not rub or force the body part to bend, this will cause more damage.

HEAT EMERGENCIES (HYPERTHERMIA)

Definition:

- A situation where the body's temperature increases.
- Perspiration is the body's main method of regulating its temperature. As sweat evaporates off the skin heat is taken with it, as a result cooling down the body. If this method is impaired, or it can not keep up, the body will quickly over heat.

Causes & Prevention:

- Exercising in hot humid and/or polluted weather and becoming dehydrated.
- Drinking alcohol, caffeinated, or carbonated drinks (contributes to dehydration).
- Over using saunas, whirlpools, and warm environments such as gyms, and aerobic classes.

There are 3 levels of heat emergencies

Levels	***Warning signs***	***Treatment***
Cramps	-Painful muscular involuntary contraction. -Sweating or moist skin. -Tired, irritable, and thirsty.	-Removing them from the heat. -Gently stretch/massage affected area. -Slowly rehydrate with water, juice, or sport drinks. -Rest for a couple of hours. -Avoid alcohol, caffeinated and/or carbonated drinks.
Exhaustion	-Sweating. -Tired. -Irritable. -Thirsty. -Lethargic. -Slight headache. -Nausea. -Dizzy/weak. -May have slightly elevated body temperature.	-Remove from source of heat. -*Slowly* rehydrate by drinking water, juice, or sports drinks. -Rest is very important to prevent a re-occurrence. -Remove sweaty clothing. -Fan or gently cool the skin with wet towels or ice packs. -Avoid alcohol, caffeinated and/or carbonated. -If vomiting occurs you should activate ambulance.
Stroke (most serious)	-Elevated body temperature. -Very tired/weak. -Sweating may stop - this is not a good sign. -Severe headache. -Red hot dry skin. -Rapid, weak pulse becoming irregular, rapid breathing, or reduced/absent vital signs (consciousness, breathing, pulse).	-Remove from heat source. -Place in recovery position. -Call for an ambulance. -Monitor/treat ABCs. -Remove sweaty clothing. -Fan or gently cool the skin with cool towels or ice packs. -Do not douse with cold water - this may cause shock. -At this point it is too late to give fluids by mouth and it may induce vomiting.

POISONS

Definition:

- A poison is a substance, which enters the body and can cause illness or death. It may act within a matter of seconds (e.g. carbon monoxide) or a matter of years (e.g. car pollution). There are four basic ways in which poison can enter the body; by swallowing, breathing, injecting, or absorbing. Any of these methods can be life threatening. Many times children are the innocent casualties.

INGESTED POISONS:

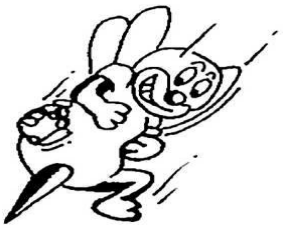
- Examples can include bad food, household cleaners, perfumes, nail polish remover, etc.
- If the person is having trouble breathing, is convulsing, is unconscious, or is in pain, call the ambulance immediately. If the person appears to be fine but you want to make sure call your doctor or local hospital. For your area this number can be found at the front of your local telephone directory. In order for them to help you they need to know what the person took, how much, their age and weight, and their present condition. They will either tell you to seek medical help immediately, give them something to drink, or to monitor them to make sure they don't get worse. Make sure you do not induce vomiting unless you are told to do so by a physician as some substances are corrosive and may burn on the way up. Also, do not give anything to drink unless instructed by a physician as some substances may react more with liquids. Always keep cleaners and chemicals high up so children can not access them.

BREATHED/INHALED POISONS:

- This can include fumes from household cleaners, industrial products, smoke, etc. Fresh air is the immediate first aid treatment. But first make sure you are not putting yourself in danger. Seek medical help for the person immediately. Never mix cleaners unless it specifies on the container. Never use chemicals in poorly ventilated areas. Be aware of carbon monoxide as it can not be smelled, has no taste, and can not be seen. It can be produced by any engine (e.g. house furnace, car), or even a fireplace with poor ventilation. Every home should have a carbon monoxide detector. If the detector begins to sound you need to leave the house immediately and call the fire department from the neighbor's house. Carbon monoxide poisoning makes you feel sleepy and drowsy and can have an effect in a matter of minutes so you aren't aware of what is happening.

INJECTED POISONS:

- Some examples include needles, broken glass, mosquitoes, spider bites, bee stings, etc. As soon as possible remove the object from the skin. Clean the area thoroughly with soap and water. If an allergic reaction occurs, or you believe there is a risk of infection, seek medical help.



ABSORBED POISONS:

- These are poisons, which enter the body through the skin, but do not cause a puncture. Some examples are household cleaners, industrial products, poisonous plants, etc. Remove the substance as soon as possible by using large amounts of running water. Do your best not to contaminate other body parts. There are some chemicals that will react more with water, but if you leave them on the skin they will react anyway with skin moisture. Seek medical help. If you work with chemicals make sure you know how to do the job safely and always use safety equipment.

List things in your home/work that can be poisonous:

Teach your children about poisons. Don't assume they know.

RABIES

Definition:

- This is a virus that can be transmitted to/from any warm blooded animal, including rodents, birds, bats, and humans. The rabies virus attacks the nervous system, and, depending on how much is transmitted, and where in the body it enters, will cause death within 3 days to about 4 weeks, if the vaccine isn't administered soon enough. If one contracts rabies they must get the vaccine before they experience secondary warning signs. If not, death is imminent.

Primary Warning Signs:

- Getting bitten or scratched by an animal.
- Of course you won't know for sure if the animal has rabies, so the safest thing is to seek medical help.

Secondary Warning Signs:

- Trouble swallowing.
- Saliva building up in the mouth.
- Aggressive or irregular behavior.
- Dizziness.
- Loss of balance.
- Sometimes memory loss.
- These warning signs are the same for animals and humans.

Prevention:

- Stay away from wild animals.
- If you see an animal that has wound marks, or is portraying warning signs listed above, call the animal control centre.
- Never try and catch a wild animal, you will get bitten for sure.

Helping:

- Treat the wound for bleeding and seek medical help immediately.

Notes:

- Even household pets, if allowed to roam outside, can contract rabies and bring it back in the home.
- The only way to test for rabies is by killing the animal and testing its nervous system.
- If treatment isn't sought quick enough death is the only outcome.
- All pets should be vaccinated against rabies.

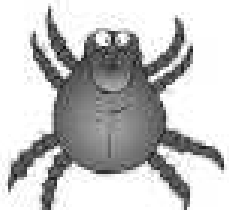
TICKS

Definition:

- These are tiny insect-like bugs that live in the woods and can easily fall on you as you walk by. They are very small, you don't feel them, and they are very hard to see. They burrow slightly under the first layer of the skin and stay there. The biggest problem is that many times they carry diseases such as Rocky Mountain Fever, or Lyme disease.

Warning signs:

- Red, itchy hives.
- Swelling.
- Numbness or pain in muscles and joints.
- Flu-like symptoms.
- Heart palpitations.
- Death can occur from untreated diseases from ticks.



Treatment:

- If possible consult a physician for tick removals, as tearing it may contribute to the spread of a virus or bacteria.
- Remove the tick using tweezers. Make sure you get all of it.
- Remove from the head and make sure the entire tick is removed fully entact.
- Do NOT tear or crush the tick.
- Do NOT use a match or any kind of fluid to remove the tick.
- Wash the area with soap and water.
- Seek medical help (family doctor) to obtain anti-biotics.

Prevention:

- When doing outdoor activities wear long sleeve clothing, a cap, and long pants.
- After the activity take a few minutes and examine self or each other for ticks, they usually end up on the scalp, shoulders, or upper back.

Crimean-Congo Hemorrhagic Fever, also known as **Kirim Kongo**: A virus transmitted by ticks and tick bites commonly found in Asia, Eatern Europe, across Africa, and the Middle East. This is a very serious virus, not to be taken lightly, as there is a 30% mortality rate. Symptoms include agitation, mood swings, confusion, nosebleeds, and progressess to blood in urine, vomiting, black stools, swollen and painful liver, kidney failure, and respiratory distress syndrome. Recovery may occur in about 10 days, but 30% of those infected will die in the second week.

SNAKE BITES

Definition:

- Not all snakes are poisonous, but if you get bitten by a poisonous one you better rush to medical help immediately. Because snake anti-venom depends on the type of snake that caused the bite, if you can, try and remember the color and pattern of the snake so they can identify it and give you the correct anti-venom.

Helping:

- Have the person rest with the bitten body part lower than the heart.
- Seek medical help as soon as possible.
- If the person becomes unconscious begin the Primary Survey.

Prevention: If you will be in an area where there may be snakes;

- Wear high boots that cover your calves.
- Make noise with your feet as you walk to scare off any snakes.
- If there are trees look on the branches as you walk.
- Check ahead of time what types of snakes might be in the area. So if a bite does occur you can notify the hospital what kind of snake it was.
- Check ahead of time with local hospitals to see if they do have snake anti-venom.

Notes:

- Unless you want poison in your mouth do NOT cut the bite site and suck the blood out.
- Do not try to catch the snake it will bite again.
- There are many snakebite kits on the market, all designed to suck the poison out. This may work somewhat, but, blood flows very quickly and the poison may spread very quickly.
- Do NOT tie a tourniquet to try and stop the blood from flowing. This may cause death to the limb from lack of blood flow.

Another danger from snakes that most people don't think about is constriction. Some snakes may be large and powerful enough to cause suffocation should they wrap around the throat.

There is only 1 poisonous snake in Cyprus that is dangerous to humans. This is the Blunt-Nosed Viper. This snake can be the thickness of a human arm and in extreme cases can reach a length of 160 cm in length. It is light brown in color and has a blunt (as if it was bunched) nose. As with most snakes it is not aggressive unless provoked. If you see one do not approach. And make vibrations (by moving debri on the ground) as you walk.

For more information it is recommended that you contact an expert in these matters.

Some websites with more information:

- www.kypros-cyprus.com/nature.html.
- www.natureofcyprus.org/snakes-lizards-reptiles-in-cyprus.html.
- www.cypnet.co.uk/ncyprus/green/snake.htm.

EMERGENCY CHILD BIRTH

Definition:

- Emergency child birth is defined as a situation where the expecting mother-to-be can not reach medical facilities in time and needs to give birth on the spot.

Causes:

- Being away from medical facilities is the most common cause for this situation. Also, not having transportation.

Warning signs:

- If the mother says, “the baby is coming,” or the baby’s head is showing, or the contractions are less than two minutes apart, then it is time to deliver the baby on the spot.

Helping:

- Make sure the ambulance has been called.
- Make the mother comfortable on her back. Remove any necessary clothing but keep her covered to protect her privacy. Put some clean towels under her.
- As a rescuer all you have to do is support the baby as it comes out. Hold the head as it is heavy compared to the rest of the baby.
- As soon as you can see the baby's throat make sure the umbilical cord is not wrapped around it. If it is use your finger to loosen it and pass it over the head. This is easy to do.
- Once the baby comes out wrap it in a clean towel.
- Clean its mouth and nose.
- If it is not breathing massage its back and tickly its feet. This should help stimulate the breathing mechanism.
- If it is still not breathing begin rescue breathing and CPR.
- Never hold the baby upside down and slap it. This is a TV thing, and if you should drop the baby you'll be in trouble.
- If the baby is fine give it to the mother to hold.
- The other end of the umbilical cord will be attached to the placenta which will still be inside the mother. Do not pull, it will come out on its own in a few minutes in another set of contractions.
- Do not cut the cord. Simply wrap the placenta in a towel and keep with the baby.
- Never put the placenta lower than the baby as blood may drain from the baby back into the placenta. If you wish you may tie something around the umbilical cord a few centimeters away from the baby and from the placenta. But do not cut it.
- If the baby begins to come out feet first it is a complication but there is nothing you can do. Instruct the mother not to push. Do not try to push the baby back in. Simply support it any way it comes out.

Notes:

- Although it is very easy to panic in such a situation keep in mind that giving birth is natural and has been done for thousands of years, even before hospitals were created.

Honey... if you stop ... choking me... I can...
let the nurse know ...we want that epidural

FIRST AID KITS

The size of a first aid kit will depend on the intended use. E.g. is it for the workplace or is it for home use? There are commercial first aid kits that can be puchased. If it is for the workplace make sure it meets the requirements for your type of workplace.

In general, contents should include things like:

- Sterile dressings of various sizes for treating bleeding.
- Triangular bandages.
- Safety pins.
- Scissors to cut clothing if needed.
- Gloves and breathing masks/barriers.
- Bandages for small wounds.

It should NOT contain:

- Any kind of medication.
- Aspirin, Tylenol, Panadol, or any other painkiller.
- Any kind of ointment.

Warning: Giving medication to someone else, or even making it available in a first aid kit, even if they ask you for it, may put you in a legally dangerous situation. If that person were to have an allergic reaction, or they were to somehow become worse, because of what you gave them you may be held liable. This includes over the counter medications such as aspirin (with the exception of a heart attack as discussed above), Tylenol, Panadol, skin ointments, etc. This type of activity is NOT first aid.

PREVENTION

CHOKING PREVENTION:

- Take small bites and chew your food well before swallowing.
- Don't laugh and makes jokes while eating.
- Don't run or walk while eating.
- Always supervise children when they are eating. Make sure;
    - Their food is cut into small pieces.
    - They chew their food well.
    - They don't put too much into their mouths.
- You keep small objects and inappropriate toys out of reach of babies.
- Balloons are only for children older than 8 years of age.

HEAD & SPINAL INJURIES PREVENTION

- Wear safety equipment and wear it properly.
- Know the safety rules of sports played.
- Use seat belts and car seats.
- Avoid alcohol intake when doing physical activity as it impairs sound judgment.

PREVENTING BURNS

- Use safety rules.
- Use safety equipment when working with chemicals.
- Hire professionals for work dealing with e.g. electricity.
- Avoid sun exposure.
- Keep hot objects away from children.

THINGS IN YOUR HOME THAT CAN BE POISONOUS:

- Nail polish and nail polish remover.
- Lipstick and lip-gloss.
- Mascara.
- Medication including: Panadol, Tylenol, Aspirin.
- Vitamins or other supplements.
- Cleaning supplies, e.g. bleach.
- Aerosols and other insect repellents.
- Poisons used for insect and pest control.
- Soaps: dishes, hands, clothes, etc.
- Smoke from smoking.

For more information about first aid refer to:

www.firstaid-cpr.net

www.cyprusfirstaid.com

For comments send an email to:

petercy@live.com

The End