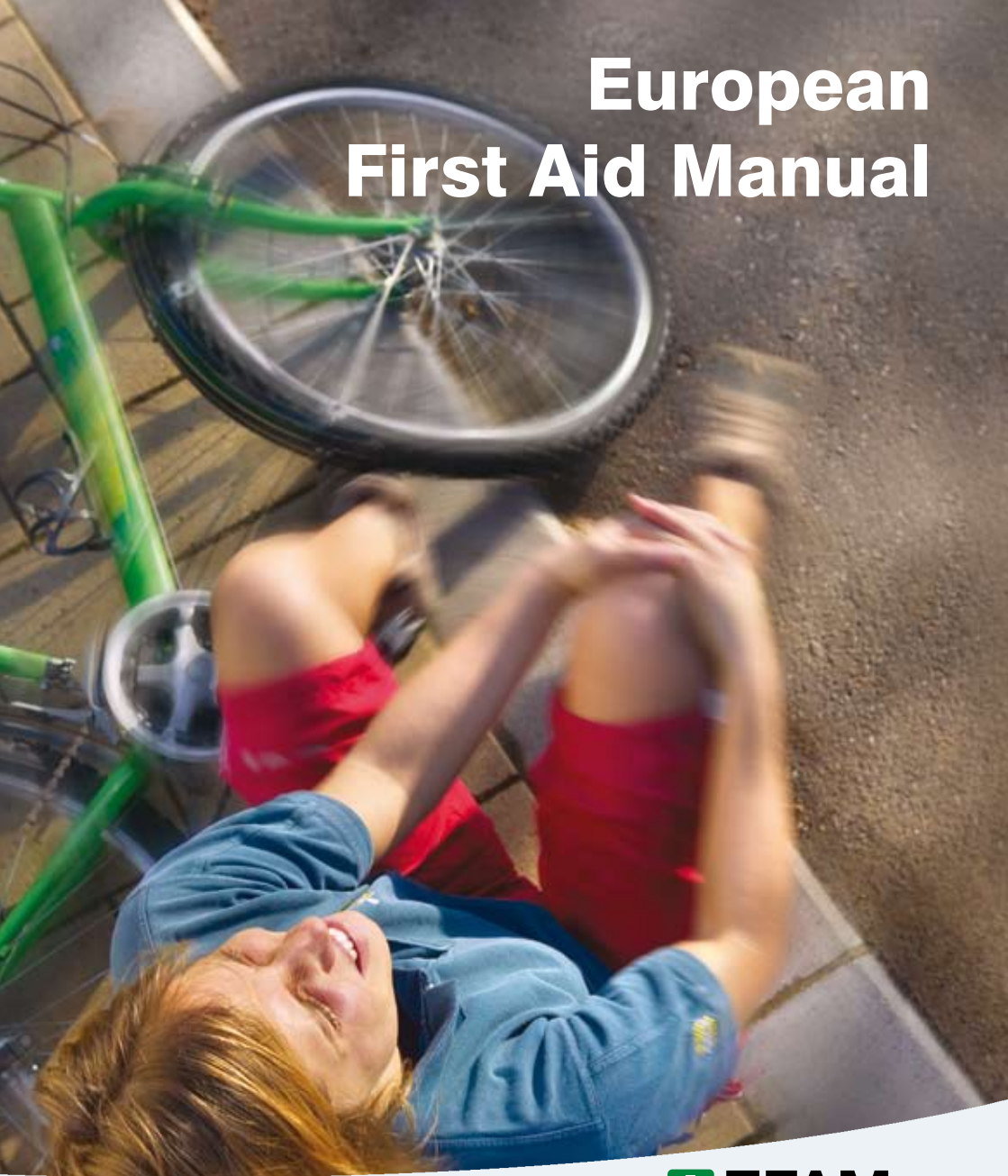


European First Aid Manual



 **EFAM**
EuropeanFirstAidManual

Published by:

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Date of issue:

December 2006

The procedures and techniques described in this book are in line with the European Resuscitation Council Guidelines 2005 on basic life support and automated external defibrillation¹ and the Red Cross Guidelines 2007 on first aid². The section on stroke is based on the American Heart Association Guidelines 2005³.

Guidelines are not a substitute for the caregiver's own judgment of a specific medical or health condition. Casualties should consult a qualified health-care professional for advice about a specific medical condition. The authors disclaim any liability to any party for any damages arising out of the use or non-use of this material and any information contained therein, and all warranties, expressed or implied.

This work contributes to the international harmonisation of first aid and complements previous harmonisation efforts by the Red Cross and the Red Crescent, e.g. the International Federation of Red Cross and Red Crescent Societies (IFRC) First recommendations on life-saving techniques.

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Responsible Publisher:

Philippe Vandekerckhove, Belgian Red Cross-Flanders, Motstraat 40, 2800 Mechelen, Belgium.

* The list of references can be found at the end of this manual.

Directions for use for authors of first aid manuals

This European First Aid Manual is part of the EFAM DVD and is intended as an example to first aid instructors. It is not a handbook in the strictest sense, but an electronic instrument with digital texts and hundreds of quality photos. Writers of books on first aid and those responsible for first aid programmes will certainly find it a mine of information. This info can be used and included in their own publications, both printed and electronic.

The EFAM DVD is a tool for developing first aid training publications and products and aligning them with the European Resuscitation Council 2005 guidelines and Red Cross 2007 guidelines. It can be used by national Red Cross associations and third parties for all of their own publications and products on first aid training. The usage right is subject to conditions outlined in a licence agreement. Please note that each application is handled individually. For applicants with commercial objectives, the conditions of use will be individually specified.

The use of EFAM is not free of charge. That doesn't mean to say that Belgian Red Cross-Flanders wants to make money out of it. We will use the income totally for first aid research ... because first aid doesn't stand still.

The EFAM DVD contains digital texts and high-resolution digital images on the latest first aid techniques and a layout handbook containing the InDesign codes.

- The texts are offered in English and deal with part 1: The Basic Principles of First Aid, Part 2: The Four Steps in First Aid, Part 3: Basic Life Support and Automated Electronic Defibrillation, Part 4: First Aid.
- About 90 high-resolution photographic images illustrate the text and are available in the original version and an outline version.
- The digital handbook is offered with layout in the form of Adobe InDesign code. Adobe InDesign is a widely used desktop publishing program. Users who have Adobe InDesign software can use these codes to change the layout directly to suit their own requirements and style.

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If you would like more info about EFAM, please email efam@rodekruis.be

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Introduction

Accidents, injuries and illnesses can happen quickly. Immediate help often depends on family members, colleagues, or bystanders. With knowledge of first aid anyone can offer help in these situations. But obviously, prevention is always better than cure!

But to be of real help to the casualty it is important that you administer first aid correctly. Doing it wrong may be of no help or may even prove harmful. This is why we have based the European First Aid Manual (EFAM) on the latest scientific first aid guidelines and had it validated by specialists. These guidelines cover the best techniques known today and guarantee better first aid practices.

This handbook explains the correct first aid procedures to follow in life-threatening situations and when faced with commonly occurring accidents. Here you learn step by step how to react and what you can do to help the casualty. We start off with the questions: “What do you observe?” and “What do you do?” Specific techniques are explained in the red boxes. The techniques and procedures are illustrated with high quality photos.

Practical first aid training is essential in preparing for an initial response in emergencies, and frequent retraining is required to maintain knowledge and skills. This manual is not a substitute for practical training.

First aid practice does not stand still. As new information becomes available, the guidelines and this manual will need to be revised.

For convenience, in this manual we use the masculine pronoun “he”. But it should be understood that whenever we use “he”, we mean “he” or “she”. No gender discrimination is intended.

There are many first aid products on the market. Any use of branded first aid products in this publication is for illustrative purposes only and does not imply endorsement by the Belgian Red Cross-Flanders.



Chapter 1:

Basic Principles

Stress in an emergency

It is only normal to feel stress if you are suddenly faced with the need to administer first aid in a real emergency. Try to bring your emotions under control before you proceed. Take a moment of your time to stand back from the situation and regain your calm. Do not set about the task too hastily and do not under any circumstances place your own safety at risk. The next chapter explains what you need to know to work in safety.

Psychosocial first aid

Offer the casualty emotional support. Approach him in a friendly manner and without prejudgement. Explain to him



carefully what has happened and what will happen next. Ask for his cooperation.

Listen to the casualty and be sympathetic.

Give help with practical things if necessary. Do not give food or drink to a casualty who is sick or wounded unless you are doing so on the recommendation of professional healthcare providers.

Avoiding infection

When dealing with open wounds it is important to keep the risk of infection between yourself and casualty to a minimum. Make sure you do not come into direct contact with the casualty's blood or other bodily fluids.



If possible, wash your hands with water and liquid soap before and after administering first aid.

Use disposable gloves if they are available.



If not, you can use a plastic bag to protect your hands. Be careful when handling sharp objects and dispose of them in a safe manner.

First aiders run little risk of infection during mouth-to-mouth ventilation. Cases of first aiders becoming sick after attempting to resuscitate a casualty are rare.

Emotional reactions after administering first aid

It is not always easy to process a traumatic event emotionally. It is not unusual for first aiders to experience difficulty when working through their emotions afterwards. Talk to your friends, family and fellow first aiders. If something is still preying on your mind, talk to a professional.

The Four Steps in First Aid

First-aid situations vary greatly but there are four steps that every first aider should always follow. They will help you make a proper assessment of the situation and administer first aid appropriately without skipping any of the important points.

The four important steps are:

- 1 Ensuring safety.
- 2 Assessing the casualty's condition.
- 3 Getting help.
- 4 Administering first aid.

ENSURING SAFETY

Your first task is to make sure the situation is safe. Try to find out what happened. Assess the situation and check for any potential dangers (e. g. traffic, fire, electricity...).

Under no circumstances should you place your own safety at risk. Do not approach the scene of the accident until you can do so without endangering yourself. If possible, try to ensure the safety of the casualty and bystanders.

If the situation is unsafe and you cannot offer help without risk, alert the emergency services. Wait at a safe distance until qualified help arrives.

Road Traffic Accident

Always follow the Highway Code. This tells you what you are legally obliged to do in the event of an accident on the public highway.

When approaching a road traffic accident reduce speed without braking sharply. Park your car in a safe place, on the hard shoulder, on the verge, or at the roadside. Put on a reflective safety vest. Use warning signs (such as a warning triangle) to warn approaching traffic of the accident.



Never attempt to cross a motorway on foot. Watch out for electrical cables on the ground. Make sure nobody touches these cables or moves too close to them.

>>> Ensuring Safety

Aim to prevent fire. To do so, switch off the ignition of every vehicle involved in the accident.



Do not allow anyone to smoke in the vicinity of the accident. Remember, an airbag that failed to activate can sometimes blow up unexpectedly. If possible, stabilise the vehicles involved by applying their handbrakes.

House Fire

Try to warn everyone who is in danger, but do not risk your own safety in the process. Never enter a burning house.



Move away from the vicinity of the fire and keep at a safe distance. If you find yourself in a burning building leave it immediately.



Help others to evacuate the building as long as you can do so in a safe manner.

Electrical accident at home

Assume that all electrical cables and appliances are live until you can be certain that the power is off. Do not touch a casualty while he is still in contact with a power source. Remember that liquids and objects in contact with the casualty can also conduct electricity. Switch the power off.



If it is not possible to switch it off insulate yourself from the ground by standing on non-conductive material. Then use a non-conductive object to push the power source away from the casualty.

If this is not possible wait for the fire brigade or other specialised personnel to arrive.



Emergency removal of a casualty

As a general rule you should not move a casualty from the place of the accident. You should only move a casualty if he is in uncontrollable danger, if the safety of the situation is not assured, and if you are able to take action without placing yourself at risk. If necessary, move him to the nearest safe location.



If the casualty is conscious explain what you are going to do and ask for his co-operation. If possible, support the casualty's neck during the evacuation procedure. Twist the casualty's head, neck and body as little as possible. Try to use the correct technique, although quick removal may be the first priority.

Try to shield the casualty from cold or heat, but only move him if he has spent a long time in a cold environment and is running a real risk as a result of this. Cover the casualty with a coat or a blanket to protect him from the cold. You can also use an insulation blanket. To protect the casualty from heat, improvise a sunshade with a jacket, blanket or umbrella, or stand or sit in a position so that your shadow covers the casualty.

>>> Ensuring Safety

Technique: The Rautek Lift

- > Lay the casualty's arms along his body.



- > Kneel behind his head. Slide one hand under his neck and the other between his shoulder blades. Carefully lift his head and shoulders and slide yourself closer.



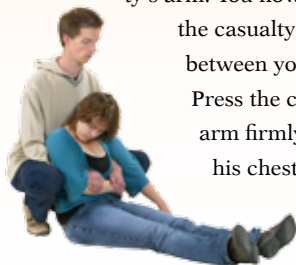
- > Raise the casualty's back to bring him to a sitting position. Support his shoulders.



- > Put both hands under the casualty's armpits and grip one of his forearms. Grasp the wrist with one hand and the forearm with the other.



- > Assume a crouching position without letting go of the casualty's arm. You now have the casualty cradled between your legs. Press the casualty's arm firmly against his chest.



- > With your back straight, stand and lift the casualty up. Walk backwards trailing the casualty with you. Watch out for obstacles behind you.



There are other good techniques for evacuating casualties too.

ASSESSING THE CONDITION OF THE CASUALTY

Introduce yourself and explain what you are going to do. This will give the casualty greater confidence in you. Check the condition of the casualty. First of all, check that he is conscious and breathing normally. Situations in which consciousness or breathing are impaired are often life threatening. Other examples of life-threatening situations are severe bleeding, burns, chest pain or a stroke. In these cases the casualty is in need of immediate help. You will find more information on this in the next chapter.

GETTING HELP

If help is required, alert out the emergency services, Poison Control Centre or other qualified help, depending on the situation.

You can dial 112 to call emergency services in every member state of the European Union or dial the local emergency number.



State clearly:

- What has happened and what the dangers are.
- Where the emergency services are expected.
- Who the casualty is and what his condition is.

If you think a casualty's injuries were non-accidental always refer to the professional healthcare providers.

ADMINISTERING FIRST AID

Try to administer first aid to the casualty in a calm and controlled manner. We explain the exact procedures to follow in the chapters to come.



Chapter 3:

Basic Life Support and Automated External Defibrillation

Ensure your own safety first of all, then that of the casualty and bystanders. Then check the casualty is conscious and breathing properly.

CHECKING RESPONSE



- Gently shake the casualty's shoulders.
- Ask the casualty loudly, "Are you all right?"

The casualty responds (e.g. by opening his eyes or answering).

- 1 Leave the casualty in the position in which you found him. Do not move him unless he is in danger.
- 2 Try to find out what is wrong with him.
- 3 Get help if necessary.
- 4 Assess the casualty's condition regularly.

The casualty does not respond.



- 1 Shout for help.
- 2 Turn the casualty onto his back and open the airway.

>>> Opening the Airway

OPENING THE AIRWAY

In an unconscious casualty the muscles are relaxed. This causes the tongue to obstruct the airway. The risk can be eliminated by carefully tilting the head back and lifting the chin. This is how you open the airway.

Technique: Head Tilt and Chin Lift

- Place your hand on his forehead and carefully tilt his head back.
- Keep your thumb and forefinger free to pinch his nostrils if you have to give rescue breaths.
- Place the fingertips of your other hand under the tip of the casualty's chin.
- Lift the chin to open the airway.



- Do not press the soft area under the chin. This can make breathing more difficult.

CHECKING BREATHING

Check that the casualty is breathing normally while keeping the airway open.



- ▶ Look whether the chest is moving up and down.
- ▶ Listen for sounds of breathing at the casualty's mouth.
- ▶ Feel for breath by presenting your cheek.

When checking whether the casualty is breathing normally, look, listen and feel for no more than 10 seconds.

In the first few minutes after cardiac arrest it often appears as if the casualty is trying to breathe. It can appear as if the casualty is barely breathing or is taking infrequent noisy gasps.

Bystanders often interpret these movements as normal breathing. In fact, they are the last 'gasps' of a body in the throes of death. You should not confuse this with normal breathing.

If you are not sure whether the casualty is breathing normally then proceed as if breathing has failed.

>>> Chest Compressions and Rescue Breaths

**CHEST COMPRES-
SIONS AND RESCUE
BREATHS****Background information**

Once the heart stops beating the blood stops circulating around the body. As a result, oxygen is no longer supplied to the vital organs. The brain is particularly susceptible to this. Without oxygen for more than a few minutes the brain cells begin to die. If a casualty has had a cardiac arrest it is therefore important to start resuscitation as soon as possible.

The chances of survival after resuscitation are small. However, numerous studies have shown that immediate resuscitation has a positive effect. A casualty's chances of survival will double or even triple if a bystander is prepared to act immediately.

Resuscitation is a combination of chest compressions and rescue breaths. The chest compressions ensure a small but crucial supply of blood to the heart and brain. Rescue breaths ensure a minimum supply of oxygen in the blood circulation. Resuscitation is also known as CPR (Cardiopulmonary Resuscitation).

**What do you observe?**

The casualty does not respond and is not breathing normally.

**What do you do?**

- 1 Ask someone to alert the emergency services and tell him to bring an automated electronic defibrillator immediately (when available). Do this yourself if you are alone.
- 2 Start with 30 chest compressions.
- 3 Then deliver 2 rescue breaths.
- 4 Alternate 30 chest compressions with 2 rescue breaths.
- 5 Do not interrupt the resuscitation. You should only check the casualty again when normal breathing resumes.
- 6 Continue resuscitating until:
 - > qualified help arrives and takes over the resuscitation;
 - > the casualty starts breathing normally;
 - > you become exhausted.

Check mouth

If the casualty's chest does not rise during the first rescue breath do the following before attempting the second rescue breath:

- > Check the casualty's mouth. Remove anything that obstructs the airway.



- > Check that his head is tilted far enough back and that his chin is properly lifted.

Do not attempt more than two breaths each time before returning to the chest compressions.

Technique: Chest Compressions

- > Kneel down beside the casualty.
- > Place the heel of one hand in the centre of the casualty's chest.



- > Place the heel of the other hand on top of your first hand.



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>>> Chest Compressions and Rescue Breaths

>>>

- > Lock your fingers together. You should not apply pressure to the casualty's ribs. Nor should you press the upper part of the stomach or bottom end of the breastbone.



- > Make sure your shoulders are directly above the casualty's chest. With outstretched arms, push 4 to 5 cm directly downwards.



- > Each time you press down allow the chest to rise fully again. This will let blood flow back to the heart. Do not allow your hands to shift or come away from the breastbone.



- > Compression and release should be of equal length.
- > Give 30 chest compressions in this way at a rate of about 100 compressions a minute. This equates to just under 2 compressions a second.
- > Proceed with 2 rescue breaths.

Technique: Rescue Breaths

- ▶ Tilt the casualty's head back again and lift his chin.



- ▶ Keep the casualty's head tilted and continue to apply the chin lift. Lift your head to check that the chest falls again when breathing out.



- ▶ Leave one hand on the casualty's forehead. Pinch the casualty's nostrils with your thumb and forefinger.
- ▶ With your other hand keep the chin lifted and allow the mouth to open.
- ▶ Breathe in normally, bend forwards and place your mouth entirely over the casualty's mouth.
- ▶ Blow air into the mouth evenly and at the same time check that the chest is rising. Take about 1 second per breath.



- ▶ Breathe in normally again and give the second rescue breath.
- ▶ Reposition your hands properly and continue with another 30 chest compressions.

Mouth-to-nose ventilation is a good alternative if mouth-to-mouth ventilation is difficult.



>>> Chest Compressions and Rescue Breaths

Resuscitation by two or more first aiders

If several trained first aiders are present at the scene it is best to alternate resuscitation. Performing chest compressions can be very tiring. The quality of the chest compressions can deteriorate after just a few minutes. The first aider is not always aware of this. Therefore, to maintain the quality of the chest compressions it is best to alternate every 2 minutes.

- The first rescuer resuscitates for 2 minutes (chest compressions and rescue breaths).
- The other takes over and resuscitates for another 2 minutes (chest compressions and rescue breaths). Then they alternate again.
- The less time wasted during change-over the better.

Resuscitation without rescue breaths (chest-compression-only CPR)

Many people, professional healthcare providers included, readily admit that they are not keen to do mouth-to-mouth ventilation.

It is always better to perform just chest-compression than nothing at all. The casualty's chances of survival will increase even if you resuscitate without ventilating. If you cannot or do not want to give mouth-to-mouth ventilation simply spend all your time on chest compressions. Obviously, chest compressions combined with rescue breaths is always the better method of resuscitation.

AUTOMATED EXTERNAL DEFIBRILLATION

Background information

If the heart stops pumping and the blood stops circulating we say that the casualty has had a cardiac arrest. In many cases, however, a heart rhythm may still be present. This rhythm is so abnormal that the heart's contractions are no longer controlled. The heart is no longer able to pump blood.

An AED (automated external defibrillator) uses an electric shock to correct this abnormal heart rhythm. If this is done quickly a normal heart rhythm can often be restored. The procedure is known as defibrillation.

An AED is a computer-controlled device which analyses the casualty's heart rhythm. Having made its analysis the device decides whether an electric shock is advisable. AEDs are extremely accurate and will only administer a shock if this is necessary. There are semi-automatic and fully automatic defibrillators. A semi-automatic device will prompt you to press the shock button. A fully automatic AED will administer the shock itself.

Even if defibrillation is successful it is extremely important to continue with resuscitation. An AED is no substitute for chest compressions and rescue breaths.

A casualty's chances of survival will increase if first aiders start resuscitation and defibrillation within the first few minutes of a sudden cardiac arrest. In most of Europe, however, it can take 8 minutes or more before the emergency services arrive at the scene. For this reason, members of the public should be taught to use an AED.

>>> Automated External Defibrillation

**What do you observe?**

The casualty does not respond and is not breathing normally. An AED is available.

**What do you do?**

- 1 Continue the resuscitation until the AED arrives.
- 2 Switch the AED on as soon as it arrives. If there are two first aiders, the second should continue the resuscitation. Follow the instructions given by the AED.



- 3 Expose the casualty's chest and attach the electrodes as shown on the packaging or on the electrodes themselves.



- 4 Make sure nobody touches the casualty while the AED is analysing the heart rhythm.



- 5 If an electric shock is needed make sure that everyone is clear of the casualty and his immediate environment. Press the shock button if asked to do so. A fully automatic device will administer a shock itself.
- 6 If the device asks you to start CPR, start immediately.

Alternate 30 chest compressions with 2 rescue breaths.



- 7 Keep following the instructions of the device until:
- > qualified help arrives and takes over the resuscitation;
 - > the casualty starts breathing normally;
 - > you become exhausted.

- 8 Stop resuscitating if the casualty starts breathing normally. Do not switch the device off, and leave the electrodes on the casualty's chest. If the casualty remains unconscious, turn him in the recovery position.

Precautionary measures

- > Dry the casualty's chest, if wet, before attaching the electrodes.
- > Shave or cut away excessive hair if the electrodes do not adhere.
- > Remove any medication patches, if these are present on the casualty's chest.
- > If the casualty has a pacemaker, do not place the electrodes on top of this device. Instead place the electrodes just to one side or below it. A pacemaker is usually visible as a lump under the skin.
- > Keep the electrodes away from any metal jewellery. If possible, remove metal jewellery that might come into contact with the electrodes.

>>> Recovery Position

RECOVERY POSITION

**What do you observe?**

The casualty does not respond, but is breathing normally.

**What do you do?**

- 1 Turn the casualty into the recovery position.
- 2 Ask someone to alert the emergency services. Go and get help yourself if you are alone.
- 3 Check the casualty's breathing regularly.

**Technique:
Recovery Position**

If a casualty is unconscious and breathing normally turn him in the recovery position. Make sure his head is tilted back and his mouth is angled to the ground. This will keep his airway open. It will also prevent vomit from entering his lungs.

- > Remove the casualty's spectacles if necessary.
- > Kneel down beside the casualty. Make sure that both his legs are outstretched.
- > Place the casualty's arm (on your side) at right angles to his body. Bend the forearm upwards with the palm facing up.



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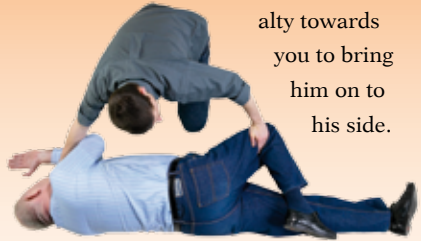
- > Lay the other arm across his chest. Hold the back of the casualty's hand against his cheek (on your side). Keep this hand in place.



- > With your free hand grasp the leg on the other side of his body by the knee. Raise his leg, but leave his foot on the ground.



- > Pull the raised leg towards you. In the meantime, keep holding the back of his hand against his cheek. Roll the casualty towards you to bring him on to his side.



- > Position the upper leg in such a way that hip and knee are at right angles.



- > Tilt the head back to keep the airway open.



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>>> Recovery Position

>>>

- ▶ Make sure his mouth is angled to the ground. This will prevent him choking on blood or vomit.



- ▶ Adjust his hand under the cheek if needs be, to keep the head tilted.
- ▶ Keep checking his breathing.

The same technique can be used to put an infant or child in the recovery position. If needs be you can place a small pillow or rolled up blanket behind the infant's back. This will keep the infant more stable.

It is better to turn a pregnant casualty onto her left side when placing her in the recovery position.

INFANTS AND CHILDREN

The basic life support guidelines make the following distinction:

- ▶ infant: less than 1 year old
- ▶ child: between the age of 1 and the onset of puberty

You can use exactly the same sequence for resuscitating infants and children as you would for adults.

For infants and children, you do not need to apply as much pressure when performing chest compressions. Press the breastbone in to about one third of the chest depth.



Use two fingers to perform chest compressions on infants.



Use one or two hands to perform chest compressions on children. It is best to use both hands for large children or if you are not particularly strong.

Obviously, it takes less air to achieve adequate ventilation in infants and children. You will know that you have blown enough air in when you see the casualty's chest rise.

Resuscitation of infants and children with an AED

Standard AEDs can be used for children over the age of 8. For children between 1 and 8 it is best to use special electrodes for children. If these special electrodes are not available, use the AED as it is.

For infants under the age of 1, an AED should only be used if specifically labelled by the manufacturers as suitable for use in this age group.

>>> Choking

CHOKING

Most adult cases of choking occur while eating. Infants and children often choke on swallowing foreign objects such as coins and small toys.

Since choking often occurs while eating there are usually people present. This means there is a good chance that someone will be able to give help quickly.



Ask the casualty,
“Are you choking?”

1**What do you observe?**

- > The casualty answers your question (e.g. by saying ‘yes’).
- > The casualty can still speak, cough and breathe.

**What do you do?**

- 1 Encourage the casualty to keep coughing.
- 2 Do nothing more beyond this.
- 3 Stay with the casualty until he breathes normally again.

2



What do you observe?

- > The casualty cannot answer (perhaps nods his head) and is conscious.
- > The casualty cannot speak, breathe or cough. He may in some cases wheeze or make silent attempts to cough. This is a life-threatening situation.



What do you do?

- 1 Give up to 5 back blows. After each blow, check to see if the problem has gone.
- 2 If back blows do not help, perform up to 5 abdominal thrusts.
- 3 If this doesn't solve the problem, alternate between 5 back blows and 5 abdominal thrusts.
- 4 If the casualty loses consciousness, put him carefully on the ground. Alert emergency services immediately. Then begin resuscitation. Start with 30 chest compressions.
- 5 Deliver 2 rescue breaths. If the casualty's chest does not rise during the first rescue breath do the following before attempting the second rescue breath:
 - > Check the casualty's mouth. Remove anything that obstructs the airway.
 - > Check that his head is tilted far enough back and that his chin is properly lifted.

Do not attempt more than two breaths each time before returning to the chest compressions.
- 6 Continue resuscitating until:
 - > qualified help arrives and takes over the resuscitation;
 - > the casualty starts breathing normally;
 - > you become exhausted.

>>> Choking

Technique: Back Blows

- ▶ Stand to the side of and a little behind the casualty.
- ▶ Support the casualty's chest with one hand and bend him well forward. In this way the object will come out if dislodged and not move deeper down the windpipe.
- ▶ Give up to 5 firm blows between the casualty's shoulder blades. Use the heel of your free hand. Each blow should be intended to dislodge the object.



- ▶ After each blow, check to see if the airway obstruction is relieved. If the object comes free there is no need to slap his back again.

**Technique:
Abdominal Thrusts**

- ▶ Stand behind the casualty and wrap both arms around the top of the upper part of the abdomen.
- ▶ Bend the casualty forward.
- ▶ Make a fist and place it between the navel and the lower tip of the breastbone.



- ▶ Hold onto this fist with your other hand. Pull your fist strongly towards you and upwards. Do this up to 5 times.



Referral to a doctor or hospital:

Abdominal thrusts can cause serious internal damage. Casualties who have been given abdominal thrusts should be referred to a doctor for examination.

Once choking stops a part of the object may still remain in the windpipe. Casualties who continue coughing, have difficulty swallowing, or feel that something is still lodged in their windpipe should be referred to a doctor.

Choking in infants and children

These techniques can also be used for children over the age of 1.

For infants, replace the abdominal thrusts with chest thrusts. To do this, use the same technique as chest compressions for infants. These chest thrust should be administered more sharply, but at a slower rate.





BLEEDING



What do you observe?

The casualty has an open wound which is bleeding severely. The blood spurts or continues to flow from the wound.



What do you do?

Stem the bleeding by applying pressure directly to the wound.

- 1 Avoid contact with the casualty's blood. Ask the casualty to apply pressure to the wound himself. Carefully place the casualty in the prone position.



- 2 Ask a bystander to alert the emergency services. Do this yourself if you are alone.
- 3 Press down directly on the wound with your hands. Wear disposable gloves if possible. You can lay a clean cloth (such as a towel) over the wound.



- 4 If the wound keeps bleeding, press down on the wound more firmly.
- 5 Apply pressure on the wound until the emergency services arrive.
- 6 Wash your hands after administering first aid.

You can also apply a compression bandage to stem the bleeding. (technique next page)

>>> Bleeding

Technique: Compression Bandage

- Remove the emergency bandage from the packaging.
- Lay the compress on the wound.



- Tie the ends of the bandage together.



- Roll the bandage firmly around the compress to exert pressure on the wound.



- If the wound continues to bleed wrap a second bandage around the first. Do not remove the first bandage.

Make sure the bandage is tight enough to stop the bleeding, without cutting off all the blood flow. If the lower tissue area turns blue or becomes numb, you can slacken off the bandage a bit but do not take it off completely.

You can use other bandages or a piece of cloth to apply pressure too.

SKIN WOUNDS



What do you observe?

The casualty has an open skin wound, such as an abrasion or cut.



What do you do?

- 1 Avoid contact with the casualty's blood or other bodily fluids. If there is no severe bleeding, wash your hands with liquid soap and water before administering first aid. Wear disposable gloves if possible.
- 2 If the wound has not stopped bleeding already, stem the bleeding by applying direct pressure.
- 3 Rinse the wound under the tap with clean, cold water. If there is no tap water in the vicinity use another source of drinking water.



- 4 Allow the water to flow directly on the wound to rinse the dirt out. Continue rinsing until there is no dirt left in the wound. Do not rub the wound to get the dirt out.

- 5 After rinsing dry the area around the wound if necessary, but do not touch the wound itself.



- 6 Cover the wound with a sterile compress. If you do not have a compress use a clean, dry cloth.



- 7 Advise the casualty to consult a doctor. The doctor will check if the casualty is protected against tetanus.
- 8 Wash your hands after administering first aid.

>>> Skin Wounds

If there is an object embedded in the wound do not remove it.

Try to immobilise the object.



Technique: Immobilisation Embedded Object

- Place sterile compresses against the object. If you do not have a compress, use a clean, dry cloth.



- Use something to fill the difference in height between the object and the wound, such as compresses or two bandages.



- Carefully wrap a bandage around this. The bandage must not press on the object.



Refer the casualty to a doctor or hospital if:

- > you are unable to stem the bleeding;
- > you are unable to clean the wound properly;
- > the abrasion is larger than half the casualty's palm size;



- > the wound was caused by a human or animal bite.



If you have to refer the casualty, stem the bleeding and cover the wound. Leave the further care of the wound to the professional healthcare provider.

- > bones, muscles or other tissues under the skin are exposed;



- > the face, eyes or genitals are injured;
- > there is an object embedded in the wound;

BURNS



What do you observe?

The casualty has a burn.

With superficial burns the skin is red, slightly swollen and painful. If the burn is deeper you will also see blisters. These burns are extremely painful.



If the deepest layer of the skin is burned there is usually no pain in the wound itself, because the nerves in this area have also been destroyed. The burn can look black, parchment-like or white and is dry. However the skin around the wound, which is often less deeply burned, is painful.



What do you do?

- 1 Cool the burn as quickly as possible with cool or lukewarm water from the tap or shower, for example.



- 2 Cool with water for 15 to 20 minutes or until the pain subsides.
- 3 Remove clothing and jewellery if they are not stuck to the skin.
- 4 Apply a wet wound dressing (e. g. a compress or a clean cloth) after cooling the burn.



- 5 If there are blisters, do not prick them.
- 6 Do not apply (antibiotic) creams when administering first aid.
- 7 Advise the casualty to consult a doctor. The doctor will check if the casualty is protected against tetanus.

After administering first aid refer the casualty to a doctor or hospital in the case of burns:

- on children under the age of 5 or adults over the age of 60;
- to the face, ears, hands, feet, joints or genitals;
- to the airways (e.g. through inhalation of smoke or hot gasses);
- running entirely around the neck, torso or limbs;
- affecting the deepest layer of the skin;
- caused by electricity, chemical products, ionising radiation or high pressure steam;



- larger than 5% of the total body area in children under the age of 16 or larger than 10% in adults over the age of 16.



To estimate the size of a burn use the size of the casualty's hand: the palm and fingers together represent about 1% of the casualty's total body area.

If necessary, ask a bystander to alert the emergency services. Do this yourself if you are alone. Start cooling the burn with water until qualified help takes over.

Prevent the casualty from becoming hypothermic. Avoid using very cold water to cool the burn. After cooling protect the casualty from the wind and use blankets to keep him warm.

INJURY TO HEAD, NECK OR BACK



What do you observe?

Suspect a head, neck or back injury if the casualty:

- ▶ was in an accident involving a sudden impact on the body, such as a traffic accident or fall;



- ▶ is or becomes drowsy, sleepy, agitated or unconscious;
- ▶ cannot remember exactly what happened;
- ▶ has a severe and persistent headache, is nauseous or begins to vomit, is irritable, behaves strangely, or has convulsions;
- ▶ has serious injuries to his head;
- ▶ complains of a lack of sensation or tingling;
- ▶ feels pain in his neck or back, or his neck or back are tender.



What do you do?

- 1 Calm the casualty and try to convince him not to move.



- 2 Ask a bystander to alert the emergency services. Do this yourself if you are alone with the casualty.
- 3 Immobilise the casualty only if he agrees to cooperate.

Technique: Immobilisation

- ▶ Kneel behind his head.
- ▶ Slide both hands carefully under his neck without moving his head.



- ▶ Support his neck and stabilise his head until the emergency services arrive.

- 4 If the casualty is restless or agitated, do not hold the head and neck still against his will.

If the casualty does not respond normally, or is under the influence, or in a lot of pain, your first assessment will not be particularly reliable. Alert the emergency services if you are not sure about the nature of the injury.

Establishing a clear airway takes priority over concerns about a potential spinal injury. Unless you can clearly establish that the casualty is breathing normally, an unconscious casualty must be turned onto his back to open the airway and to check breathing. When a casualty needs to be put in the recovery position, maintaining a clear airway also takes priority over potential spinal injury. The further steps to be taken are described in the chapter entitled 'Basic Life Support and Automated External Defibrillation'.

>>> Injury to Bones, Muscles or Joints

INJURY TO BONES, MUSCLES OR JOINTS**What do you observe?**

The casualty has injured his hand, arm, foot or leg (through sports, a blow or a fall...). The casualty is often unable to move the injured member normally or put his weight on it. The injury is painful and can look swollen. In some cases the limb or joint has an abnormal appearance.

**What do you do?**

If you are in doubt as to the severity of the injury, assume that the limb is broken and refer the casualty to professional healthcare providers.

If there is a major bleeding at the location of a break use direct pressure or a compression bandage to stem the bleeding.

- 1 Do not attempt to reset limbs which appear abnormal or dislocated.
- 2 Cool the injury using ice. Do not hold the ice directly against the skin when cooling. Wrap something around the ice first (such as a towel). If there is no ice you can also use a Cold Pack.

- 3 Do not cool for too long. Never cool for more than 20 minutes each time.



- 4 Do not immobilise the injured limb if medical help is due to arrive shortly. Advise the casualty not to put his weight on an injured leg or painful foot. If the injury is to the hand, arm or shoulder, ask the casualty to hold his arm still against his chest. This is usually sufficient and less painful than applying a bandage or fitting a sling.



POISONING



What do you observe?

The casualty has ingested a toxic substance or taken an overdose (alcohol, drugs, medication).



What do you do?

Contact the Poison Control Centre or other professional healthcare providers and follow their instructions. Describe what has happened. Provide information on the toxin and the casualty.

Without advice of professional healthcare providers you should not let the casualty vomit, and should not give him water, milk or other remedies.



>>> Chest Pain

CHEST PAIN

**What do you observe?**

The casualty is complaining of chest pain. The pain can radiate to other parts of the upper body (e.g. to the arm, shoulder, neck, lower jaw or stomach). This usually goes hand in hand with shortness of breath, sweating, dizziness or fainting. Some casualties feel nauseous and have a tendency to vomit.

**What do you do?**

Do not underestimate the situation even if the casualty denies that there is anything seriously wrong. The casualty is urgently in need of help.

- 1 Ask a bystander to alert the emergency services immediately. If you are alone with the casualty do this yourself.
- 2 Get the casualty to rest and not to exert himself. Get the casualty into a comfortable position (e.g. sitting or half sitting).
- 3 Regularly check that the casualty is



conscious and breathing properly.

STROKE



What do you observe?

The signs of a stroke are often subtle. For example, the casualty suddenly finds that his face, arm or leg is limp or numb, often on the same side of the body. Sometimes the casualty can suddenly become confused or find it difficult to speak and follow a conversation. Other casualties have trouble seeing, are unable to walk, feel dizzy or are unable to keep their balance. Other signs are a sudden headache.



What do you do?

If you suspect a person is having a stroke you should systematically check whether he is able to perform the following actions without problem.

- 1 Ask the casualty to laugh or show you his teeth. Look to see if his mouth is crooked or the corner of his mouth has dropped.



- 2 Ask the casualty to close his eyes, lift both arms to horizontal at the same time, and turn the palms of his hand upwards. Look to see if an arm drops or drifts.



>>> **Stroke**

- 3 Ask the casualty to repeat a simple sentence. See if he is not speaking clearly or is fumbling for words.

If the person is unable to perform one or more of these actions he has probably had a stroke.

Do not underestimate the situation even if the casualty denies that there is anything seriously wrong. The casualty is urgently in need of help.

- 1 Ask a bystander to alert the emergency services immediately. If you are alone with the casualty do this yourself.
- 2 Get the casualty to rest and not to exert himself. Get the casualty into a comfortable position (e.g. sitting or half sitting).
- 3 Regularly check that the casualty is conscious and breathing properly.

Acknowledgements

The results of the EFAM project are the product of many people's work. We thank all contributors for their efforts, advice and support.

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The European Resuscitation Council was represented by Koenraad Monsieurs.

The World Health Organisation was represented by Enrico Davoli.

The International Federation of Red Cross and Red Crescent Societies was represented by Grace Lo.

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Chailles Ballali, Gilbert Banura, Sofie Belmans, Matthieu Clarysse, Jos Coenen, Marcel De Bolle, Steve De Roock, Fried'l De Winter, Annabel Delbrassine, Ronny Dreesen, Chris Dupont, Koen Engelen, Luc Geers, Mia Ghoos, Bart Ghysels, Erik Greunlinx, Lambert Greunlinx, Veerle Henderix, Narda Hermans, Kathleen Jacobs, Sabine Janssens, Beate Kalteier, Jacqueline Lathouwers, Bea Lenaerts, Laure Lievens, An Martens, Walther Moerdyck, Koshan Mohammadismail, Roel Nollet, Lars Nyskens, Kjell Olieslagers, Bram Peeters, Edin Pehadzic, Sally Roelandt, Fred Roussard, Linda Rydant, Ahmed Saidali, Sascha Peeters, Ingrid Schoutenden, Leen Sents, Islam Shariful, Joris Smeyers, Kristien Thijs, Marc Vanbouvewelen, Bart Van de Vel, Hans Van der Krieken, Jo Vanginderhuysen, Victoria van Vliet, Carry Verbruggen, Will Verdonck, Daniëlle Verlinden, Marijke Verrezen, Geert Verstraete, Diego Willemaers.

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Graphic Design And Layout:

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Web Applications:

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FIRST AID DOESN'T STAND STILL

There are new guidelines for first aid and resuscitation. Because of this a lot has changed in first aid. Some guidelines are in the direct opposite of what has been taught previously.

These guidelines:

- consist of the best universal techniques known today.
- have been set up on the basis of scientific research, specialist advice and experience.
- are valid across the whole of Europe.
- guarantee better first aid practices.

This manual is substantiated according to these latest guidelines and is accepted as a reference across the whole of Europe.

Further information
www.efam.be