



| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

SEAFARERS TRAINING CENTER INC



Elementary First Aid

In compliance with the 1978 International Agreement on Standards of Training, Certification and Watch keeping for Seafarers (STCW as amended).

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

SCOPE:

This course aims to provide the training for candidates to provide elementary first aid aboard ship, in accordance with Section A-VI/1 of the 1978 STCW Code as amended.

OBJECTIVE:

This syllabus covers the requirements of the 1978 STCW Convention as amended Chapter VI, Section A-VI/1, Table A-VI/1-3. On meeting the minimum standard of competence in elementary first aid, a trainee will be competent to take immediate action upon encountering an accident or medical emergency until the arrival of a person with medical first aid skills or the person in charge of medical care board.

ENTRY STANDARDS:

The course is open to all seafarers who care to serve on board sea-going merchant ships. There are no particular educational requirements.

COURSE CERTIFICATE OR DOCUMENT:

Completion of the course and demonstration of competence, a document be issued certifying that the holder has met the standards of competence specified in Table A-VI/1-3 of STCW 1978 as amended.

COURSE INTAKE LIMITATIONS

The maximum number of trainees attending each session will be 25 persons.

STAFF REQUIREMENT

The course should preferably be under the control of a qualified first aider.

TRAINING FACILITIES AND EQUIPMENT

Ordinary classroom facilities and an overhead projector are required for the lectures. When making use of audiovisual material such as videos or slides, make sure the appropriate equipment is available.

Smaller rooms for practical instruction, demonstration and application should be available.

The following equipment should be available:

- Ship's medical chest with contents (no drugs)
- Various splints, braces, etc
- Dressings, bandages
- Life-size dummy for practical resuscitation training
- Stretcher



SEAFARERS TRAINING CENTER

M-BFA(I)-03

ELEMENTARY FIRST AID

REV. 5 - 2015

TEACHING AIDS

Instructor Manual.

Videos

First Aid Series.

V1 A matter of Life and Death (Code No. 564)

V2 Dealing with shock (Code No. 565)

V3 Bone and Muscle Injuries (Code No. 566)

V4 Dealing with the Unexpected (Code No. 567)

V5 Well Travelled? – Staying Healthy on Working Trips (Code No. 599)

V6 Entering into Enclosed spaces.

TEXTBOOKS

A seafarers training manual.



SEAFARERS TRAINING CENTER

M-BFA(I)-03

ELEMENTARY FIRST AID

REV. 5 - 2015

TIMETABLE

COURSE OUTLINE

Competence: Take immediate action upon encountering and accident or other medical emergency

| COURSE | APROXIMATE TIME (HOURS) |
|--|---|
| Knowledge, understanding and proficiency | Lecture, demonstration and practical work |
| 1. General principles | 1.0 |
| 2. Body structure and functions | 2.0 |
| 3. Positioning of casualty | 1.5 |
| 4. The unconscious casualty | 1.0 |
| 5. Resuscitation | 2.0 |
| 6. Bleeding | 1.5 |
| 7. Management of shock | 1.5 |
| 8. Burns and scalds, and accidents caused by electricity | 1.0 |
| 9. Rescue and transport of casualty | 1.5 |
| 10. Other topics | 2.25 |
| TOTAL | 15.0 |
| 11. Review and Assessment | |



SEAFARERS TRAINING CENTER


M-BFA(I)-03

ELEMENTARY FIRST AID

REV. 5 - 2015

COURSE TIMETABLE

| PERIOD DAY | DAY 1 | DAY 2 | DAY 3 |
|----------------------------------|---|--|--|
| 1st PERIOD (1.5 hours) | 1. General Principles 2. Body structures and functions | 5. Resuscitation (continued) | 9. Rescue and transport of casualty (continued) 10. Other Topic |
| 2nd PERIOD (1.5 Hours) | 2. Body structures and functions (continued) | 6. Bleeding | 10. Other Topic (continued) |
| BREAK | BREAK | BREAK | BREAK |
| 3rd PERIOD (1.5 hours) | 3. Positioning of casualty | 7. Management of Shock 8. Burns and scalds | 11. Review and Assessment |
| 4th PERIOD (1.5 hours) | 4. The Unconscious casualty. 5. Resuscitation | 8. Burns and scalds (continued) 9. Rescue and transport of casualty | |

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

MANUAL

CHAPTER 1: INTRODUCTION

1. General:


The International Agreement on Standards of Training, Certification and Watchkeeping for Seafarers was adopted in 1978. This Agreement did not enter into effect until 1984 due to a show acceptance process by member states at the Convention. By 1992, the Agreement had been ratified by many governments (Administrations). The member states at the convention quickly realized that a complete revision was necessary, and this was quickly accomplished. The Agreement was revised and signed on April 1995; this revision was called STCW-95.

The STCW Agreement revision was needed due to a great number of accidents that could be attributed to human factors, there was and still existed a vacuum as far as competency was concerned, partly because of the changes in crewmember supplies and the variable quality of education and training systems. Even though the latter included some good principles, it was not specific enough to be appropriately implemented. Mainly, it did not provide enough help for the implementation and control on the part of authorities. The STCW95 Code establishes certain minimum requirements for all seafarers. The new requirements entered into effect on February 1st, 1997. The basic training requirements apply, specifically, to those who start after August 1st, 1998.

2. STCW Requisites:

Basic training applies to those crewmembers of vessels engaged in any function of that vessel as a fundamental part of the operations and with specifically assigned security and contamination prevention obligations. There are four basic training elements that include:

- a. Personal survival techniques**
- b. Fire prevention and firefighting**
- c. Basic first aid**
- d. Personal security and social responsibility**

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

3. Course objective:

The purpose of the Basic First Aid Course is to train the participant with that which is established in the STCW 95 Code. At the end of the course, the participant must:

- ✓ Place a victim in the proper posture.
- ✓ Apply artificial respiration techniques.
- ✓ Control hemorrhages.
- ✓ Adopt appropriate measures to treat states of shock.
- ✓ Take correct measures in case of burns, fractures and other injuries, including electric discharges.
- ✓ Rescue and transport a victim.
- ✓ Apply bandages and use first aid kit material.


CHAPTER 2: FIRST AID

1. General Principles:

The sheer act of navigating and defying the nature of the seas may mean, in more than one instance, that we may have to solve different health-related problems, either our own or of the crew members quickly and effectively.

Due to the probability of cuts and wounds, it is advisable that crew members be vaccinated against tetanus. Furthermore, it is prudent for the Captain to have at hand a very brief medical history of the crew that shows the name, age, blood type, Rh factor, height, allergy precedents, heart problems or traumas, high or low blood pressure, epilepsy, diabetes and medication being taken.

The main causes for diseases and accidents can be prevented taking appropriate measures, reminding the crew to keep from solar over exposure, unnecessary cold, dress adequately, avoid damp clothing, think of upcoming maneuvers so reducing the risk of injuries and traumatisms. Likewise, avoid using rings, chains and watches during maneuvers because these can get caught somewhere, causing personal harm.

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

First aid aboard a ship has the disadvantage of not being administered by specialists at least physically and the care given is limited to the extent of the crew's training and the equipment available onboard.

Note for remember: before you provide First Aid to a victim, you must evaluate the area in order to prevent becoming a victim yourself; the evaluation of the scene of an accident can give us a hint about the type of injury or accident the victim has suffered.

2. Definition of first aid:

These are the immediate, adequate and provisional caring given to injured or sick people before being cared for by an aid center.

3. First aid objectives:

- ✓ Preserve life
- ✓ A void physical or psychological complication.
- ✓ Assist recovery.
- ✓ Ensure the transfer of those injured to an aid center

4. General norms for providing first aid:

In face of an accident that requires first aid attention, as a helper you must remember the following norms:

- ✓ If you are sure about what you are going to do, act accordingly but if in doubt, it is better to do nothing because it is likely that the aid you provide will not be adequate and may contribute to worsen the injured.
- ✓ Stay calm to act with serenity and speed; this gives confidence to the injured and his companions. Furthermore, it contributes with the correct and timely execution of the techniques and procedures needed to provide a first aid. The life of the wounded depends on yow: attitude; avoid panic.
- ✓ Stay beside the victim; if alone, ask for the necessary help.



- ✓ Search the victim for injuries other than that which motivated the attention and that cannot be manifested by the victim or his companions.

Examples:

"A burnt person who simultaneously presents fractures which do not receive enough attention because the burn is more visible."

- ✓ Completely identify the victim, his companions and register the time when the injury occurred. .
Give clear and precise orders during first aid procedures.
- ✓ Inspect the scene of the accident and organize first aid efforts according to physical capacities and personal judgment
- ✓ Do not fight the impossible

5. Procedure to provide first aid:


To provide first aid you must do the following:

- ✓ Organize a human chain with uninjured people; this not only eases your action but also allows for better breathing space for the injured.
- ✓ Ask among the people present to identify those who know first aid so they may help you. Pay immediate attention to the following, and in the order described, those who:
 - Bleed profusely
 - Do not present vital signs (apparent death)
 - Present severe burns
 - Present fracture symptoms
 - Have slight wounds
- ✓ Upon providing first aid you may need to transfer the injured to a nearby health center or hospital, if necessary.

6. General precautions to provide first aid:

In all first aid procedures you, as a helper, must do the following:

- ✓ Determine possible dangers at the scene of the accident and place the victim in a safe place.

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

- ✓ Communicate continually with the victim.
- ✓ Loosen the injurer's clothing and check whether respiratory tracks are obstructed or not.
- ✓ Avoid unnecessary movements; do not try to dress him.
- ✓ If the victim is conscious, ask him to move each extremity in his body in order to determine the sensibility and movement.
- ✓ Place the victim in a lateral position to avoid secretion accumulation that may obstruct respiratory tracks (vomit and mucus).
- ✓ Cover the injured to maintain body temperature.
- ✓ Provide emotional and physical security.
- ✓ Do not force the injured to stand up or move if you suspect fractures; instead, it is necessary to immobilize him.
- ✓ Do not administer medicaments except analgesics, if necessary.
- ✓ Do not give liquids orally to people with altered states of conscience.
- ✓ Do not give liquor.
- ✓ Do not make comments about the injured health condition, especially if conscious.

CHAPTER 3: EVALUATION OF THE INJURED

1. Important aspects:

Investigate the state of consciousness through a complete examination of the victim in order to explore all physical signs and any changes in behavior that may occur. Usually, this is done after the helper has heard the case history and the person's symptoms.

The exam ought to be complete and careful, avoiding excessive and unnecessary manipulation that may worsen already-existing wounds or produce new ones. The examination method will depend on the circumstance in which it is undertaken.

The wounded should remain in the open the least possible amount of time; in fact, the examination can be done in such a way that most of the body remains covered during the process. It is dangerous to move a person without knowing the nature of his injuries.

When examining an injured person, one must be methodical and orderly.



The first step when examining any part of the body is the inspection. It consists of cautiously and carefully checking the part that is going to be examined before touching it. The initial inspection frequently uncovers alterations that would go unnoticed otherwise.

After the inspection the helper must carefully touch the affected part, paying special attention on bones. When the injured person is conscious the examination's main purpose is to discover sensitive parts; but for someone who is unconscious, the method is still useful since some bone irregularities can be discovered. We consider it pertinent to distinguish between the meanings of sign and symptom:

SIGN: What the helper observes on the injured person.

SYMPTOM: Those manifested by the injured person.




2. An approved way to turn an injured person:

2.1. Examination method:

After taking the vital signs (breathing, pulse, and pupil dilation) it is necessary to make a series of observations about the general aspect of the injured person.



| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

2.1.1. Observing the Injured includes a series of elements amongst which we mention:


- ✓ **Posture:** immobile or restless, comfortable or uncomfortable, backwards or straight, injured legs, restless or tremulous hands.
- ✓ **Expression:** happy, anxious, gloomy, irritated, excited or indifferent, facial symmetry, swelling.
- ✓ **Mood:** extroverted, friendly, hostile, impatient, nervous, worried.
- ✓ **Consciousness:** a wake, answers questions or unconscious.

2.1.2. Loosen tight clothing:

If it is necessary to open or remove the injured person's clothing for a better evaluation; do it, be careful to cut or open at the seams.

2.1.3. Observation of skin color:

- ✓ **Cyanosis (bluish or violet coloration):** observed in severe hemorrhages, intoxications, breathing obstructions.
- ✓ **Paleness:** in anemia, hemorrhages, emotions, cold.
- ✓ **Reddish:** (intense red color) in acute intoxications by atropine or barbiturates, intense corporal efforts, feverish diseases, chronic alcoholism, anger.
- ✓ **Note:** In case an injured person has dark skin, change in color can be observed on the lips', mouth's or eyelids' internal surface.
- ✓ Some mucus coloration can give us an idea of the problems the injured person may have, thus:
 - **Black or dark brown:** sulfuric acid intoxication.
 - **Yellow:** citric or nitric acid intoxication.
 - **Soapy white:** intoxication with caustic soda.
 - **Gray:** lead or mercury intoxication.

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

2.1.4. Individual exam of each body part:

Careful evaluation includes the individual examination of each part of the body. It is usual to start at the head and proceed downwards. If there is some sign of probable wound localization, attention may be fixed on the suspicious part. Thus, torn clothing, bloody pants and other similar clues may show probable wounds. Anyway, we recommend methodically examining the injured person, top-down, in the following order:


✓ **Face:**

- **Eyes:** raise and carefully inspect the eyelids. The size of the pupils, their reaction to light and the state of the reflexes must be taken into account.
- **Nose:** Bleeding or the exit of a clear liquid through each one of the nasal passages can be a grave sign which suggests a cranial base fracture
- **Ears:** The emission of blood or a clear liquid (cephalo-rachidean liquid) can be discovered analogously.
- **Mouth:** Coloration, spots or burns could suggest intoxications. It is necessary to completely open the mouth and examine it carefully. The breath's odor can sometimes indicate the cause:
 - **Gasoline:** Intoxication with hydrocarbons
 - **Alcohol:** Liquor ingestion.
 - **Bitter almonds:** Cyanide poisoning.
 - **Garlic or onion:** Intoxication with organic phosphates or gunpowder.

When a hemorrhage is observed it is necessary to find its source, e.g., a torn cheek or gum. When examining the mouth, false teeth must be removed to avoid breathing obstructions if these move around the mouth.

The aspect and characteristics of vomit can lead us to a diagnostic:

- **Abundant:** Intoxication with arsenic.
- **With hemorrhage:** Intoxication with caustics, anticoagulants, aspirin, and alcohol or serpent venom.
- **In cotton balls:** Acute lead poisoning.

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

- **Phosphorescent:** Intoxication with white phosphorus.

- ✓ **Head:** After inspection, cranial bones must be gently touched, looking for traumas.
- ✓ **Thorax:** While examining the Thorax, direct your attention towards the bones, their symmetry, and their deformity. When touching the ribs, the First aid must start examination as close as possible to the vertebrae and continue gradually exploring towards the front until reaching the sternum. A voiding moving the injured person, a careful revision of the vertebrae should be done, touching it along its length.
- ✓ **Abdomen:** Adequately inspect this zone, edemas, masses, wounds or exposure of guts, while locating painful places which will specifically tell us of compromised organs.
- ✓ **Pelvis:** Pelvis examination should be performed in a similar manner to that of the ribs. It is easy to see whether clothing is humid, which can be due to involuntary urination.
- ✓ **Extremities:** each bone in these zones must be examined, making existing wounds evident. If there are no signs of fracture, it is convenient to check joints for dislocations.


2.1.5. Unconscious injured person:

We always have to think of the possibility of several injuries from one accident, which is why we have stressed on a complete routine exam, for both conscious and unconscious persons. Due to the pain's intensity and the shock's graveness, an injured person may not know he has other injuries which are less painful.

"Omitting a complete exam could lead to undetected injuries"

2.1.6. Written Record:

In any event, a clear and complete written record must be made of the wounded who have been cared for. Data such as: complete name and family name. Day, month, year and time of the event. Injured person's or relatives' address and phone number, if

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

possible. Type of emergency. Place of occurrence. Place where he has been transferred to. Record of vital signs. First aid procedures performed.

2.1.7. Interview the injured person:

The interview should mainly focus on signs and symptoms that, at that time, cause the most discomfort to the injured person, for example:

- ✓ Pain is described indicating the place, irradiation, intensity, duration. The relationship between the pain and the relief, worsening or unleashing with bodily functions, exercise and rest must be accounted for. Consciousness must be evaluated and are better noted in a descriptive manner instead of using terms with different meanings.
- ✓ **Verbal response:** Does not speak, sounds are not understandable; language is confused or is normal.
- ✓ **Opening of the eyes:** Does not open the eyes, only opens them when feeling pain or when spoken to, or opens them spontaneously.
- ✓ **Motor response:** There are no movements, there are abnormal flexions or extension movements, movements are oriented, obeys orders.

The three previous parameters allow us to check, at a given time, is supposedly all right or are deteriorating with time. Emotional reactions must be dealt with most care, trying to make the conscious injured person understand the nature of his injuries, what procedures will be performed, what is the status of his companions, what happened to his belongings, where will they be transferred to, how will his relatives be informed, etc.; with the purpose of getting greater cooperation on his part. Consequently, logic handling of the data obtained during the examination of an injured person is the base for proper treatment.

2.2. Vital Signs:

Vital signs are those signs and reactions that a live human being presents which reveal his organism's basic functioning. The vital signs are: breathing, pulse, pupil reflex, temperature, blood

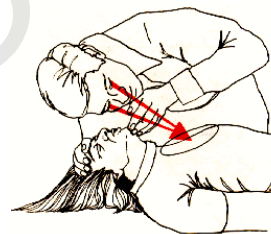


pressure. When providing first aid, it is important to evaluate the organisms functioning and detect those alterations that are frequent in case of accidents; therefore, it is necessary to control breathing and pulse. The evaluation of temperature and blood pressure is performed at a clinical level since almost never do we have the equipment to measure these two vital signs. The control of respiration and pulse, in addition to being necessary to determine changes that may occur as a consequence of the accident, orient health personnel to start definitive treatment.

2.2.1. Respiration:

It is the gaseous exchange between the organism and the atmosphere. Respiration has two phases: inhalation and exhalation. During inhalation oxygen from the atmosphere is introduced into the lungs and during exhalation carbon dioxide is eliminated. In addition to the respiratory apparatus' organs, during respiration thorax muscle contractions and rib movements also intervene. Therefore, in case of injuries at this level, it is indispensable to control this vital sign.

- ✓ Normal respiration values



| | |
|-------------------------------|-------------------------------------|
| Babies | 30 to 40 respiration per minute |
| Toddlers up to 6 years of age | 26 to 30 respiration per minute |
| Adults | 16 to 20 respiration per minute |
| Elderly | Less than 16 respiration per minute |

- ✓ Procedure to control respiration In order to control respiration, you must count respiratory movements, taking inhalation and exhalation as a single respiration. Lay the injured person down; in case of vomit, with the head sideways. Loosen clothing. Start respiratory control observing the thorax and the abdomen after taking the pulse,



so the injured person does not notice, thus avoiding changes in the respiratory rhythm. Count respirations per minute. Write down the number to verify changes.

2.2.2. Pulse:

It is the rhythmic expansion of an artery, produced by the passing of blood pumped by the heart. Pulse is controlled to determine the heart's functioning. Pulse changes when the heart-pumped blood volume reduces or when artery elasticity changes; taking the pulse is a quick and easy way to evaluate the status of an injured person.

✓ **Normal pulse values:** Normal pulse varies according to different factors, age being the most important.

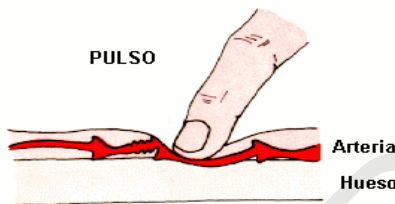
| | |
|----------|-----------------------------------|
| Babies | 130 to 140 respiration per minute |
| children | 80 to 100 respiration per minute |
| Adults | 72 to 80 respiration per minute |
| Elderly | 60 or less pulses per minute |

✓ **Places to take the pulse:** The pulse can be taken at any superficial artery that can be compressed against a bone.





- ✓ **Places to take the pulse:** The places where the pulse may be taken are: at the temple (temporal), the neck (carotid), the internal part of the arm (humeral), the wrist (radial), internal part of the elbow (cubital), the groin (femoral), the top of the feet (pedio), the baby's left nipple (apical). In first aid, the most frequent spots are the radial and the carotid.



- ✓ **Recommendations to take the pulse:** Feel the artery with your index, middle and ring fingers. Do not feel with your thumb because this finger's pulse is more perceptible and may be confused with the patient's pulse. Do not apply excessive pressure because you will not be able to feel it properly. Control pulse in a minute using a watch with second band. Write down the value to check for changes.
- ✓ **How to take carotid pulse:** It is the easiest to locate and the one with most intensity. To locate it, do the following: locate the Adam's apple, slide your fingers towards the side of the trachea; gently press to feel the pulse, count the pulse per minute.

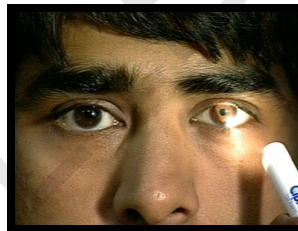




- ✓ **How to take the radial pulse:** This pulse is the most accessible, but sometimes during accidents it becomes imperceptible. Feel the radial artery, which is located at the wrist, immediately above the thumb's base. Place your fingers over the artery and press gently. Count the pulses in a minute.

2.2.3. Pupil Reflex:


Normally, pupils contract when stimulated by light. If both pupils are greater than normal (dilated), the injury or illness can indicate shock, severe hemorrhage, heat exhaustion, or drugs. If both pupils are smaller than normal (contracted), the cause can be sunstroke or drug use. If both pupils do not have the same size, suspect head injury or paralysis.



- ✓ **How to take pupil reflex:** If you have a small lantern, light the eye and observe how the pupil contracts. If you do not have one, quickly open the upper eyelid and look for the same reaction. If one or both pupils do not contract, suspect grave neurological damage.

2.3. State of Shock:

We define shock as the set of signs and symptoms resulting from the lack or diminishing of blood in tissues originated by the loss of blood volume or the rise of the capacity of the vessels (loss of blood pressure). This implies the lack of tissue oxygenation whereby, if not acted upon quickly, can cause death to the injured person. There are several types of shock, depending on the greater or lesser blood volume.

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

2.3.1. Normovolemic shock:

Is produced by a detention of blood circulation or by the increase of blood vessel capacity, which originates a pressure loss or reduction needed irrigate tissues with oxygen.

Examples:

- ✓ **Septic shock**, produced by an infection due to wounds.
- ✓ **Anaphylactic shock**, produced by allergies (medications, bites...)
- ✓ **Neurogenic shock**, produced by pain (traumatism in general)
- ✓ **Toxic shock**, produced by intoxications (alcohol)

2.3.2. Accidental shock:

Any injury, if not treated accordingly, can derive into a state of accidental shock.

2.3.3. Hipovolemic shock:

(Lesser blood volume) the one produced by the loss of fluid. Its cause may be hemorrhages, burns, dehydration (vomit and diarrhea).

2.3.4. First aid in case of shock:

Action regarding a shock ought to be oriented to treat, primarily, the cause for which it has occurred, evidently whenever possible. Nevertheless, you will always act in the following way:

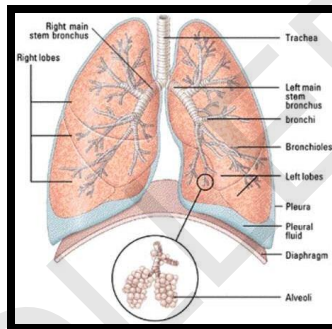
- ✓ **Control vital signs.** In case of cardio-respiratory arrest, one must start the basic vital support protocol.
- ✓ Treat injuries, if possible.
- ✓ Loosen everything that impedes normal blood circulation.
- ✓ Place the injured person so his feet are higher than his head, whenever possible.
- ✓ Avoid corporal heat loss.
- ✓ Urgently evacuate the victim, always controlling vital signs, since there is a tendency for shock to worsen and produce entry into a state of coma.



CHAPTER 4: CARDIO-RESPIRATORY ARREST

1. Definition general:

It is the sudden and simultaneous interruption of respiration and heart functioning due to the existing relationship between respiratory and circulatory systems. Respiratory arrest can occur while the heart continues functioning, but cardiac arrest overcome in few minutes, when immediate first aid is not provided. Also, a cardiac arrest can initiate, in which case, respiratory arrest occurs simultaneously. In first aid, it is important to determine whether a respiratory arrest or cardio respiratory arrest has taken place in order to execute the appropriate resuscitation maneuver.



2. Causes for respiratory arrest and its manifestations:

2.1. Causes:

- ✓ Drowning
- ✓ Foreign bodies in respiratory tracks. (food, vomit, mucus, blood)
- ✓ Sunstroke or freezing
- ✓ Burns
- ✓ Inhalation of irritant vapors or gases.
- ✓ Throat inflammation
- ✓ Throat obstruction due to fallen tongue.
- ✓ Choking
- ✓ Lack of oxygen (mines, wells, wardrobes)
- ✓ Alcohol intoxication
- ✓ Excessive doses of medicines
- ✓ Electric shock



- ✓ Traumatism
- ✓ Shock
- ✓ Cardiac arrest

2.2. Manifestations:

- ✓ Lack of respiration
- ✓ Cyanosis on lips and nails
- ✓ Loss of consciousness
- ✓ Fast and weak pulse

3. Causes of cardio-respiratory arrest and its manifestations:**3.1. Causes:**

- ✓ Cardiac arrest
- ✓ Profound hypothermia
- ✓ Shock
- ✓ Cranio-encephalic traumatism
- ✓ Electrocution
- ✓ Severe hemorrhages
- ✓ Dehydration
- ✓ Respiratory arrest

3.2. Manifestations:

- ✓ Lack of pulse and respiration
- ✓ Pale skin and sometimes cyanotic, especially lips and nails.
- ✓ Loss of consciousness
- ✓ Partially dilated pupil; within 2 or 3 minutes dilation is total and there is no reaction to light.

4. Cardio-pulmonary resuscitation C.P.R.:



SEAFARERS TRAINING CENTER

M-BFA(I)-03

ELEMENTARY FIRST AID

REV. 5 - 2015

Upon finding and unconscious person, you must immediately proceed as follows:

- ✓ Try awakening the person with soft movements or calling. Are you O.K?
- ✓ If the person does not wake up, lay the victim on his back and ask for help.
- ✓ If you do not know resuscitation procedures remain with the victim until someone how does comes, watching that the victim's respiratory tracks are clear.



- Medical Assistance is available via 2182khz or on VHF Channel 16.

CPR - CARDIO PULMONARY RESUSCITATION

This information is published for those who have had training in cpr and should not be used by an untrained person except in the gravest emergency where no skilled help is available

- CHECK FOR DANGER
- STAY WITH THE PERSON
- CALL FOR HELP AND START RESUSCITATION

1 AIRWAY

- Quickly turn person on side
- Remove foreign material from mouth
- Place neck and jaw in correct positions
- Listen for breathing
- Watch for chest movement



2 BREATHING


- If not breathing
- Quickly turn person on back
 - Open Airway
 - Start mouth to mouth or mouth to nose
 - 5 full ventilations in ten seconds
 - Check neck pulse
 - If pulse is present, resuscitation at a rate of 15 per minute (one every 4 seconds)
- check the circulation after 1 minute and then every 2 minutes
 - If breathing returns - place the person on side - keep the airway clear



3 AIRWAY

- Check neck pulse
- If absent
- Begin external cardiac compression
 - Place the heel of one hand on the lower half of the sternum
 - Lock the other hand to the first by grasping wrist or interlocking fingers



| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

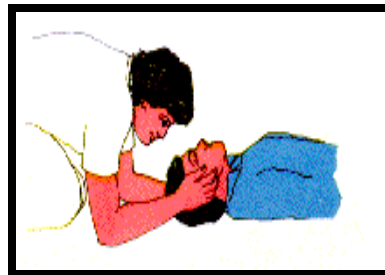
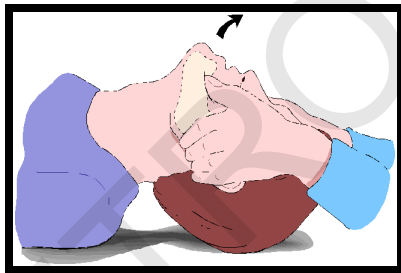
4.1. Hyperextension - procedure to open respiratory tracks or hyperextension:

To avoid irreparable brain damage it is necessary for the helper to know the basic principles of life support, which are the ABCs of resuscitation:

- ✓ Open respiratory tracks.
- ✓ Restore respiration.
- ✓ Restore blood circulation.

If the victim does not breath, the helper must follow these steps:

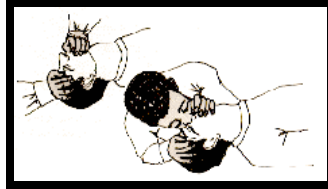
- ✓ Confirm that the victim is lying down on his back and open the respiratory track by extending the head towards the back (Hyperextension).
- ✓ Clean his mouth.
- ✓ Extract secretions, vomit and foreign bodies; frequently this method is enough for the victim to recover respiration.
- ✓ Listen and observe during 5seconds whether the victim breathes. If he does not, incline the head backwards and give him two complete blows, one after the other.



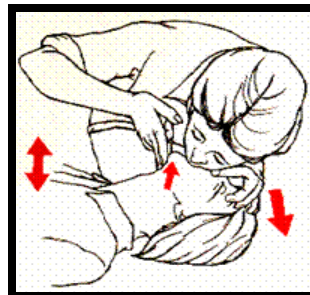
4.2. Lifesaving Respiration:

After the procedure described above, direct your attention to the thorax and observe if it rises slightly or near your cheek to the patient's mouth to feel if warm air comes out, which corresponds to his respiration.

- ✓ If he does not respond, incline the head again and give two more blows.
- ✓ If respiration cannot be achieved, you can deduce that the victim may have a foreign body in the throat, and then solve this problem.



- ✓ Check for respiration again.
- ✓ Keeping the head inclined backwards and the respiratory track clear give a complete blow. After a minute, take the pulse again. Continue giving complete blows every five seconds if it is an adult and every three seconds if it is a child or baby.
- ✓ With an average of 12 respirations for adults, 20 for children and 30 to 40 for babies.
- ✓ These steps keep air flowing into the victim's lungs.
- ✓ If there is pulse and no respiration, continue giving lifesaving respiration until it is re-established or medical assistance is obtained and do not start chest compressions because it is unnecessary and dangerous if the victim's heart is beating.
- ✓ If respiration is re-established and the victim has pulse, keep aerial tracks clear and permanently observe the respiration.
- ✓ If the victim has neither pulse nor respiration start resuscitation maneuvers.
- ✓ See the following figures.





4.3. Resuscitation with Cardiac Massage:

It is a combination of respirations with external cardiac massage. When the heart does not function normally blood does not circulate, the supply of oxygen to all the cells of the body diminishes. This frequently happens during a heart attack or a cardio-respiratory arrest.

A simple way to determine whether the Heart is functioning is by evaluating the pulse. If the person has no pulse it is necessary to restart circulation by chest compression practicing cardio-pulmonary resuscitation, which has two purposes.

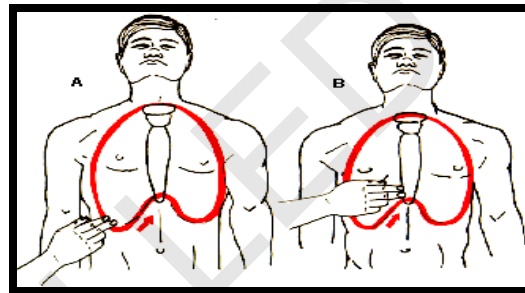
- ✓ Keep lungs full of oxygen when respiration has stopped.
- ✓ Keep blood circulating in order to carry oxygen to the brain, heart and other parts of the body.

4.3.1. Procedure:

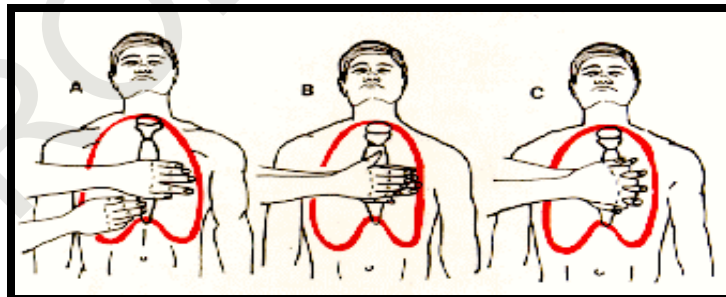
- ✓ Observe if the victim breathes during five seconds.
- ✓ Check carotid pulse on adults or those older than one year. For babies, locate brachial pulse.
- ✓ Observe the victim top to bottom to find possible hemorrhages.
- ✓ If the victim does not breath and has no pulse, execute the following procedure taking into account that before you start massaging you must make sure there actually is a lack of pulse for it is dangerous to do compressions when the victim still has circulation.



- ✓ To avoid this, evaluate the pulse during 10 seconds before determining that the victim is under cardiac arrest.
- ✓ Locate the rib cage and then find the lower point of the sternum, measure two fingers above. External Cardiac Compression. On the adult, place one hand with the heel of the palm and the fingers pointing upwards at the located spot and interlace the fingers of both hands. For a child, use only one hand. For a baby, only use your index and middle fingers in the middle of the chest, between the nipples.



- ✓ Compress the chest and with softness, repeat the procedure as explained later on.

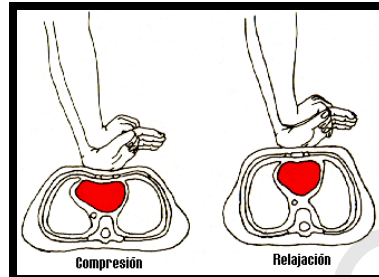


- ✓ Do not remove your hands from the victim's chest.





- ✓ This procedure ejects blood from the heart.




4.4. Cardio-pulmonary resuscitation with one helper:

- ✓ 15 thoracic compressions are performed for 2 ventilations and proceed at this rhythm to repeat the cycle. (The massage's speed is from 80 to 100 compressions per minute).
- ✓ For babies and children older than one year 5 compressions and a blow are performed and you continue like that successively until the victim recovers blood circulation and respiration and or until medical assistance arrives.
- ✓ In case pulse is re-established spontaneously suspend the cardiac massage maneuvers and continue with those for respiration and repeat the procedure until you deliver the victim to an aid center.
- ✓ If, during transfer, the victim recovers the pulse and the respiration place him in a secure lateral position and remain alert to vital signs.

4.5. Cardio-pulmonary resuscitation with two helpers:

- ✓ The one in charge of the blows places himself by the victims head and the other places himself or herself on the opposite side, near the thorax, with the purpose of changing positions in ease of fatigue.
- ✓ The one in charge of the blows starts with two respirations, checks the respiration and pulse; if not present, the other helper starts with 5 chest compressions, while this procedure is performed the other helper counts aloud "and one, and two, and three, and four, and five" keeping the rhythm. Upon completing the five compressions the

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

other helper gives a blow and the maneuver continues in cycles of five compressions and one blow.

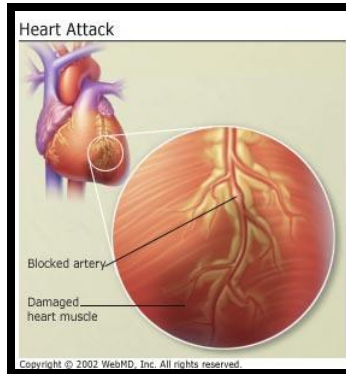
- ✓ The helper that gives the blows periodically checks the effectiveness of the chest compressions and checks the pulse while the other helper is doing the compressions. If the person has pulse, he verifies the respiration, if the person does not breath lifesaving respiration is continued controlling the pulse every minute.
- ✓ If the helpers want to change positions due to fatigue, keep in mind the following procedure:
 - **From compressions to blows:** The helper that gives the compressions says: "and change, and two, and three, and four, and five". When completing the compression cycle both helpers change positions quickly.
 - **From blows to compressions:** The helper that gives the blows when done says change and quickly moves placing the hands waiting to give the compressions.

4.6. Important Aspects:

Frequently in unconscious patients, the tongue obstructs the superior air passages, which easily leads to cardio-respiratory arrest. In most cases the mere act of clearing the air passages allows resuming ventilation and prevents cardiac arrest. Do not give cardiac massage not artificial respiration if the person is not totally lacking these vital Signs.

5. Cardiac Attack – Infarct:

A cardiac attack is an injury to one of the parts of the heart where one or more blood vessels fuat supply blood to the heart is blocked. When this happens, blood does not circulate and cells begin to die. Then the heart can stop pumping blood altogether, producing a cardiac arrest. A cardiac arrest victim whose heart still beats has greater opportunities of survival fan one who is under cardiac arrest, if first aid is quickly provided.



5.1. Infarct risk factors:

- ✓ Hereditary
- ✓ Gender
- ✓ The risk increases with age
- ✓ Stress due to nervous tension
- ✓ Smoking cigarettes
- ✓ Hypertension
- ✓ Obesity
- ✓ High cholesterol
- ✓ Diabetes
- ✓ Lack of exercise
- ✓ High uric acid

5.2. Signals:

- ✓ Byte-type pain
- ✓ Uncomfortable pressure
- ✓ Strong oppressive sensation, suddenly appearing in the center of the chest or the mouth of the stomach.
- ✓ Pain irradiated to the arms, shoulders, neck and jaw on the left side.
- ✓ General discomfort, sweating weakness.
- ✓ Fast and weak pulse.




- ✓ Paleness or cyanosis
- ✓ Nausea
- ✓ Difficulty breathing

5.3. First Aid:

- ✓ Absolute rest, no movements should be allowed, not even to walk, since this effort would produce more work for the heart.
- ✓ Ask the patient to sit or lean in a comfortable position, generally semi seated. Loosen tight clothing.
- ✓ Calm the victim and act swiftly, transfer the patient as soon as possible to an aid center where adequate attention will be dispensed.
- ✓ Control vital signs during transfer and, if they fail, initiate C.P.R. maneuvers.



| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

CHAPTER 5: OSTEOARTICULAR TISSUE INJURIES

1. General:

Bone, articulations and muscle injuries occur frequently. These are painful but seldom mortal; yet, if inadequately attended, can cause serious problems and can even leave the victim incapacitated. The main injuries that affect bones, tendons, ligaments, muscles and articulations are:

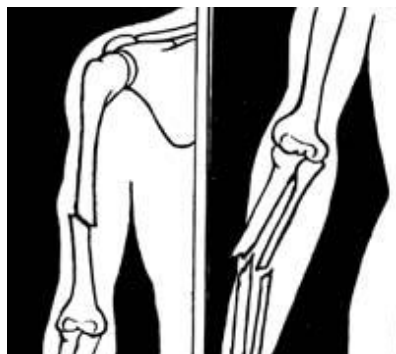
- ✓ Fractures
- ✓ Sprains
- ✓ Luxations
- ✓ Cramps and tears

Sometimes it is difficult to tell whether an injury is a fracture, luxation, sprain or a tear. Whenever you are not sure about what the injury is, treat it as you would a fracture.

1.1. Fractures:

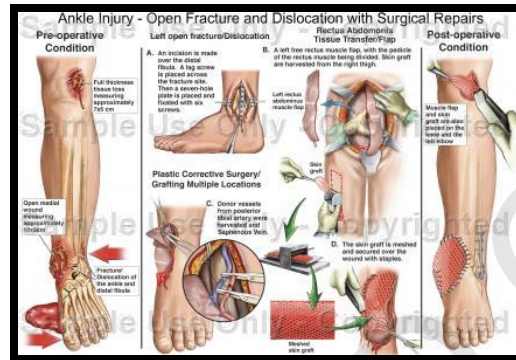
Fractures occur when a bone breaks totally or partially. Its cause may be a fall, a strong blow and, sometimes, a torsion movement (violent muscle contraction). Most of the times, a considerable amount of strength is needed to break a bone, bones are much more fragile in elders and children, being the reason why fractures are more common with those age groups. These injuries can only put life in danger if accompanied by arterial hemorrhages or if they compromise the nervous system, producing paralysis, such as backbone fractures. Fractures can be:

- ✓ **Closed Fracture:** Whereby the bone breaks and the skin remains intact.





- ✓ **Open Fracture:** Implies the presence of an open wound and the emergence of the broken bone to the exterior.

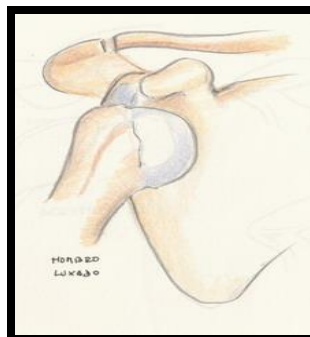


- ✓ **Multiple:** When the bone breaks in several fractions called sprains.
- ✓ **Incomplete or Fissure:** When the bone rupture is not total.

1.2. Luxations:

Generally, they are more obvious than fractures. A luxation is observed when a bone has been displaced from its articulation. This dislocation is generally caused by a violent force that tears the ligaments which hold the bones in place. The articulations most affected are: shoulder, elbow, hip, knee, ankle, thumb, big toe and jaw.

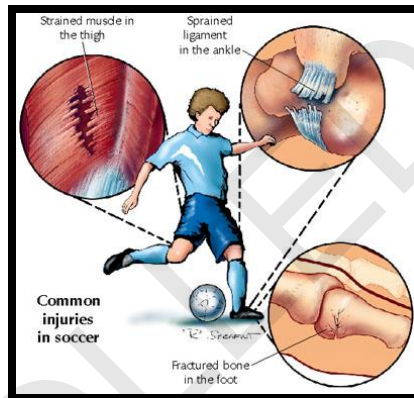
When a bone gets off from its place the articulation stops functioning. The displaced bone usually swells up, forms a prominent or a depression that normally is not present.





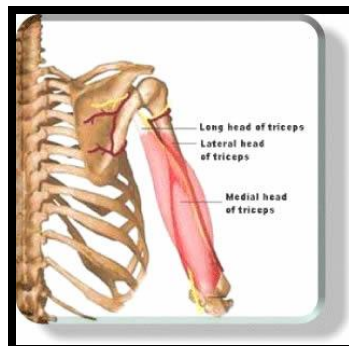
1.3. Sprains:

When a person twists an articulation, those tissues (muscle and tendons) that are underneath the skin, are injured. Blood and fluids filter through the tom blood vessels and cause inflammation and pain in the injured area. A serious sprain can include an articulation bone fracture or luxation. The articulations which are most easily injured are those located at the ankle, elbow, knee, wrist and fingers. It is possible that the victim may not feel much pain and carry on with normal activities. Thus, articulation recovery delays and a greater injury can be produced.



1.4. Torn Muscles:

Muscular tearing occurs when muscles are stretched and tom. Distensions are usually caused when lifting something heavy or when forcing a muscle too much. These generally affect muscles in the neck, back, thighs or the posterior part of the leg (calf). Distensions can recur, especially those that occur on the neck or back.



**1.5. General Care:**

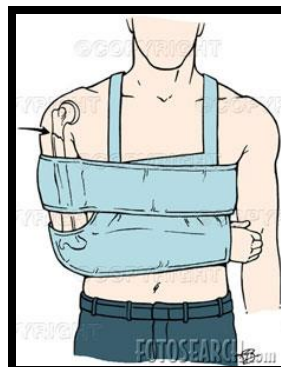
Frequently, it is not possible to determine if we are dealing with an injured muscle, bone or articulation; nonetheless, some signs can give you clues. Determination of the type and graveness of the injury is generally done through x-rays.

1.5.1. General Attention:

If you suspect a grave muscle, bone or articulation injury **IMMOBILIZE** (splint) the injured part while the victim is transferred to an aid center. To perform the immobilization of the injured area, you will need the following: rigid splints: boards, cardboard; soft splints: folded blanket, pillow; triangular bandages, or tying or supporting elements such as: strips of cloth, ties, handkerchiefs, scarf.

1.5.2. Sling:

Fundamental element for the immobilization of the upper members when fractures, luxation or sprains exist. In addition to immobilizing, they are very useful to raise the injured zone, thus reducing inflammation and pain. They are generally made of cloth or interwoven cotton. If no triangular bandages are available, different slings can be improvised to hold an extremity.

**1.5.3. Treatment Recommendations:**

When immobilizing any type of injury that compromises bone, articulation or muscle, keep in mind the following suggestions:



- ✓ Remove the victim from the scene of the accident, if it is dangerous.
- ✓ Make a primary evaluation of the victim, identifying whether he is conscious or not, if he is breathing and has pulse or if he is bleeding a lot. These injuries generally cause shock, as a consequence of the pain and the hemorrhage which ensues.
- ✓ Make a secondary evaluation and identify the type of injury to make the immobilization.

1.5.4. Sensitivity:

- ✓ Check whether there is sensitivity in the injured member, temperature and skin color. If footwear impedes you from checking the temperature and skin color, limit yourself to checking for sensibility.
- ✓ A void taking the shoes off, trying to do so can produce unnecessary movements that can cause more damage.
- ✓ If there is an open fracture, control the hemorrhage, cover the wound without pressing on it, and then immobilize and raise the injured area. If the previous methods do not control the hemorrhage, press the brachial artery, located in the inner face of the half-arm or the femoral artery, in the groin, whether there is hemorrhage on the arm, forearm, hand or hemorrhage on the thigh, leg or foot.
- ✓ Control the hemorrhage pressuring throughout the bone.
- ✓ Carefully place a piece of gauze over the bone and hold it with a small circular made of bandage.
- ✓ Fix the gauze with a bandage without making pressure.
- ✓ Immobilize and raise the injured area.





- ✓ If the hemorrhage continues press on the femoral artery.
- ✓ If there is other grave injuries, such as respiratory injuries or burns, attend them before immobilizing.
- ✓ Cover the rigid material, using towels, cotton or foam, to avoid injuries in articulations. Likewise, bone protrusions in knees, ankles, elbows and areas exposed to pressure such as underarms, elbow fold and the genital area must be protected.
- ✓ When immobilizing, hold the injured area on both sides of the injury. Do not try to place the bone in its original position, avoid removing shoes; trying to do so produces unnecessary movements that can produce more harm.



1.6. Attention for specific injuries:

1.6.1. Clavicle fracture:

- ✓ Place the arm over the chest, with the hand towards the shoulder opposite the injury.
- ✓ Place a compound sling using whatever is at hand (scarf, belt, tie, and shirt).

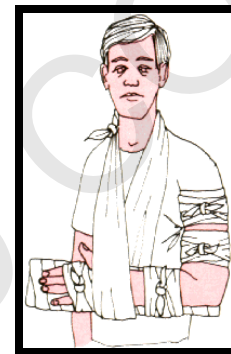
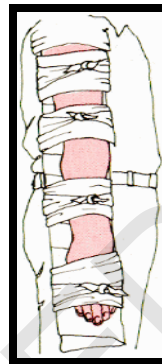
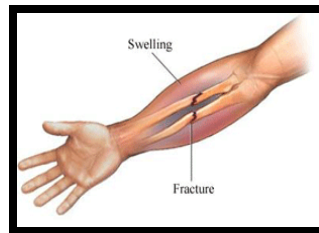


1.6.2. Arm fracture:

- ✓ Place the forearm flexed over the chest.
- ✓ Protect the underarm placing a piece of cotton or folded cloth under it.

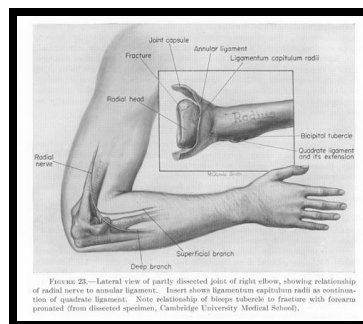


- ✓ Place a splint on the external part of the arm.
- ✓ Hold the forearm with a sling.
- ✓ Tie on the upper and lower part of the fracture.
- ✓ Transfer the patient to an aid center.



1.6.3. Elbow or forearm fracture:

- ✓ Immobilize the fracture in the position you found it.
- ✓ If the arm is extended, place a splint and tie with triangular bandages or secure it to the body.
- ✓ If the arm is loose, immobilize it with rigid, L-shaped splints.
- ✓ This type of immobilizer can be used for the arm, hand or foot.
- ✓ Make an L-shaped splint and place two splints, one on the exterior part, from the elbow to the fingers and the other splint on the internal part from the elbow fold to the fingers and tie them with triangular bandages.

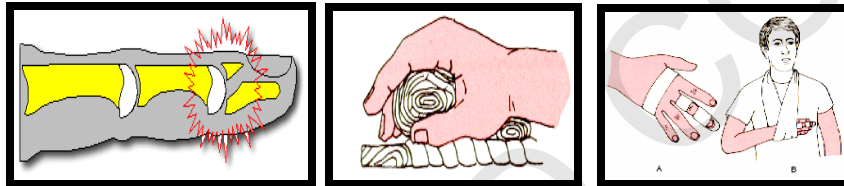


- ✓ You can also use a pneumatic splint.
- ✓ Place the sling in such a way that the hand is higher than the elbow.



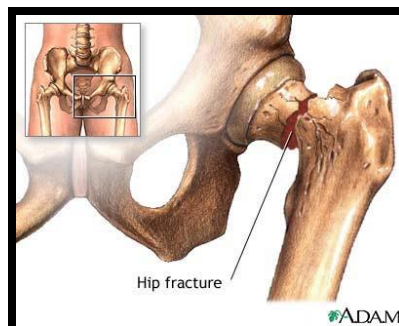
1.6.4. Hand and finger fracture:

- ✓ Place a small cushion on the palm of the hand and wrist.
- ✓ Place a splint from the elbow to the fingertips and tie it.
- ✓ In case of a fracture of a finger phalanx we can use a cushioned swab stick as a splint, from the fingertip to the hand articulation. We fix it with adhesive tape.



1.6.5. Hip fracture:

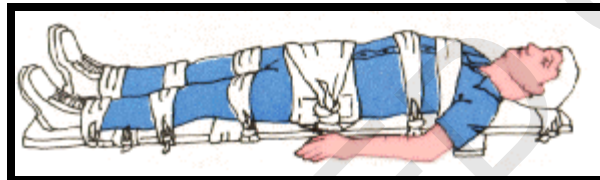
- ✓ The big and heavy hip bones are known as the pelvis. A pelvic bone injury can even be mortal. Because these big bones protect important inner organs, a strong blow can cause an internal hemorrhage.
- ✓ Although a grave injury may appear immediately, some take longer to develop.
- ✓ Because a pelvic injury can also affect the lower part of the backbone, it is better not to move the victim unnecessarily and immobilize him as you would someone with an injured backbone, looking for signs of internal bleeding.
- ✓ Take the necessary measures to reduce the possibility that the victim enter a state of shock. . If the injury is light, handle it as you would someone with an injured femur, placing a wide triangular bandage on the hip, making the knot at the opposite side of the injury.





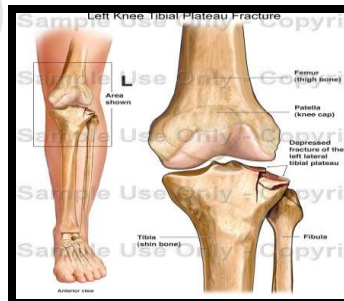
1.6.6. Fracture of the upper leg:

- ✓ Rest the patient on his back.
- ✓ Place two splints as follows: one from the underarm to the ankle and another on the interior part of the thigh to the ankle and tie it.
- ✓ If no splints are available, tie both legs (anatomic splint) placing a small cushion between them to protect bone prominence (knee and ankle).
- ✓ Tie an 8-shaped bandage around the feet.



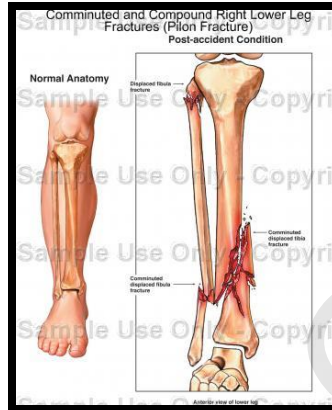
1.6.7. Knee fracture:

- ✓ Lay or sit the victim down.
- ✓ Place a splint underneath the leg, from the interior part of the gluteus region to the ankle.
- ✓ Tie it. Apply an 8-shaped bandage around the ankle, foot and splint.



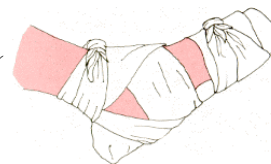
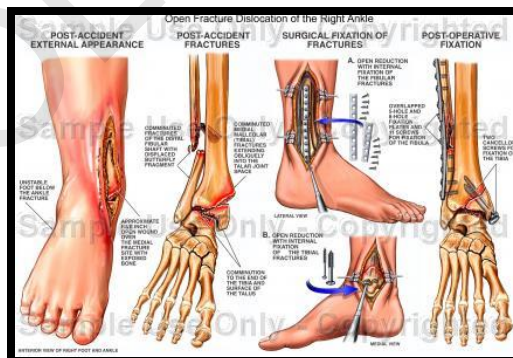
1.6.8. Fracture of the inferior part of the leg:

- ✓ Place the splint, one in the inner part and the other on the outer part, from the top of the thigh to the ankle, protecting the bone prominence (knee, ankle) and tie them.
- ✓ If cardboard is available, make an L-shaped splint and tie it. This has the advantage of keeping the foot in functional position.
- ✓ Pneumatic splints are very useful to immobilize this type of injury.



1.6.9. Ankle or foot fracture:

- ✓ Do not remove the shoe if it is flat, because it will work to immobilize the fracture.
- ✓ Make an L-shaped splint that covers the foot and the lower part of the leg and tie.
- ✓ If a splint is not available, immobilize using a pillow or overcoat (soft splint).

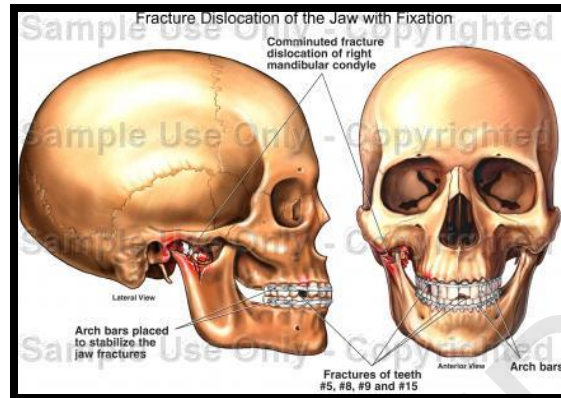


1.6.10. Jaw Fracture:

- ✓ Ask the victim to close his mouth, so upper and lower teeth touch each other.



- ✓ Place a bandage below the chin and tie on the upper part of the head, passing the bandage in front of the ears.



1.6.11. Cranial Fracture:

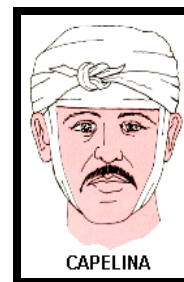
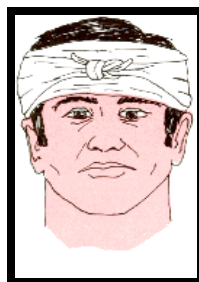
These generally cause brain damage or alterations which in turn cause loss or reduction of consciousness; therefore, any blow on the head must be carefully evaluated even though there may not seem to be any injuries at first glance.


✓ Signs of cranial fracture:

- Paleness
- Head ache, nausea, vomit
- Loss of consciousness
- Irritability
- Loss of balance
- Convulsions
- Bleeding or clear liquid coming out through the nose, mouth or ear
- Complete or partial loss of sensibility
- Fast and weak pulse
- Altered respiration
- The victim may feel somnolence or confusion or even lose consciousness
- Sight problems



- Lack of sphincter control
- Numbness or incapacity to move the body or extremities.
- ✓ **Cranial fracture treatment**
 - Immobilize the head, placing sandbags, bricks or a folded blanket on both sides to keep movement from causing major injuries to nervous tissues. If unconscious, immobilize the neck.
 - If there is a wound on the face or scalp, cover it without making pressure on it.
 - If the victim is conscious, place him in a semi seated position, with head and shoulders raised.
 - If some secretion comes out of the ear, incline the head towards the wounded side; cover the ear with a sterile dressing or similar small cushion and apply a soft bandage. Do not plug the ear.
 - If there is no neck injury, place him in the secure lateral position or with the head to one side to avoid suffocation with vomit.
 - If clear liquid or blood is coming out of the ear, cover it without introducing the curing material into the ear.
 - Control pulse and respiration; if these are missing, start cardio-pulmonary resuscitation.
 - Keep the victim warm.
 - Transfer to an aid center, being careful to move him as if you were dealing with a backbone injury.



| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

1.6.12. Signs of a backbone fracture:

- ✓ Changes in the state of consciousness.
- ✓ Pain and inflammation in the area of the fracture.
- ✓ Unable to move arms and legs.
- ✓ Tingling, reduction or loss of sensibility in hands or feet.
- ✓ Respiratory difficulties.

1.6.13. Care of a fractured backbone:

- ✓ Check the respiration, the state of consciousness and control hemorrhages.
- ✓ Advise the victim not to move. Do not stand him up. . Evaluate sensibility and mobility.
- ✓ If the victim is conscious ask him if he can move arms and legs or if he feels tingling; ask him to move his fingers, hand and feet, one by one.
- ✓ If the victim is unconscious, use a pin, hook or keys to touch the sole of the feet and the palm of the hands. If there is sensibility, the victim will react folding his fingers.
- ✓ Act calmly and securely. The speediness with which you act in these cases is not important.
- ✓ Place the victim facing upwards, avoiding brusque head and neck movements.
- ✓ One of the helpers carefully places the head aligned with the neck and applies traction (upwards and sustained) placing the hands around the jaw, while the other helper holds the feet. This measure keeps the neck from twisting and that the edges of the fractured bones do not break the medulla.
- ✓ Reduce to a minimum head and backbone movement; using surgical collar or wrapping a newspaper or magazine around the neck.
- ✓ Keep a moderate but firm traction while the other helper applies a neck immobilizer.



- ✓ After holding the feet, two helpers put the victim on his side while the helper at the head maintains traction on the neck; meanwhile, another helper places a small board and holds it.
- ✓ Now a hard stretcher or long board is placed on the victim's back and the victim is laid down.
- ✓ Secure the victim to the stretcher. The hands are placed under the pant's beltline or secured over the thorax.
- ✓ Transport the victim to an aid center.
- ✓ If you suspect a fractured backbone as a consequence of a car accident, immobilize the victim's neck before removing him from the vehicle. 4 helpers are needed.
- ✓ One of the helpers makes manual traction (upwards and sustained) of the neck vertebrae, placing the hands around the jaw, so the small fingers end up just below the jaw. Another helper places a short board behind the victim, from the hip to the head.
- ✓ Then the head is raised firmly and is kept stable. Thus, the head does not rest on the neck while at the same time it keeps the neck from twisting and that the edges of the fractured bones do not break the medulla. Keep the head firm while one or two helpers place a neck immobilizer. Ensure the victim to the short board. Once the victim is secure placed on the board, he can be moved without danger.
- ✓ With a helper in charge of the legs and two in charge of the shoulders, rotate the victim.
- ✓ One helper slides a long board until he reaches the victim's hip.
- ✓ The persons who are at the shoulders lay the victim down with much care over the long board. All together, they completely slide the victim over the board and secure him.



- ✓ To remove from the car, two people place themselves at the victim's head and slide him until the other end of the board leans on the car seat. The other two helpers place themselves at the victim's feet to remove him from the car and transfer him to the ambulance.
- ✓ Keep the victim from getting cold or heated.

1.6.14. Fractured rib:

Chest injuries can be slight, like in a simple broken rib, or they can also put a person's life in danger.

- ✓ **Signs of a broken rib:**

- Acute pain that increases with respiratory movements or coughing.
- Unable to breathe deeply.
- Thorax deformation.

- ✓ **Care of fractured ribs:**

- If you suspect the victim has a broken rib, make him rest in a comfortable position when breathing; the semi-seated position is the most recommended, you can support him with boxes, pillows or blanket. If you hold the victim's arm close to the chest with the injured side, it will help support the injured area and let him breathe better.
- Use a pillow or a folded blanket to hold and keep the fracture immobile.
- If there is a wound, cover it completely. . Transfer the victim to an aid center.

1.6.15. Cramps:

Cramps are a brusque, involuntary and painful muscle contraction caused by demanding a sudden effort, like athletes when they are not previously trained. They also occur on dehydrated persons, like in heat exhaustion.

- ✓ **Signs of cramps**

- Strong pain that impedes movement of the affected extremity.



- Presence of a mass that is none other than the contracted muscle in a sustained manner.
- ✓ **Care of cramps**
 - Provide oral serum
 - Straighten the affected part; it produces stretching of the muscle and relieves pain.
 - A void forcing flexion or extension movements because of the risk of rupturing or tearing.
 - Once the cramp has subsided, slowly and co-coordinately start displacement movements of the muscles involved. Apply a soft massage with the fingertips on the affected muscles from the bottom up.
 - Leave it resting.
 - Do not use hot pomades, make brusque movements or massage while there is muscular contraction.

1.6.16. Sprain and tearing:

- ✓ Cool the injured area. It is possible to control internal bleeding and reduce pain from a sprain or tear keeping the injured area cool!. Cold constrains blood vessels, limiting the amount of blood and liquids which filter outwards and also reduces muscular spasms and numbs nervous ends. Ice must be applied on the injury periodically during the first 24 hours or until the inflammation disappears.
- ✓ Then apply heat. Heat accelerates those chemical reactions needed to repair tissues. White blood cells mobilize to eliminate infections and other cells begin the healing process. All of this contributes to the adequate cicatrisation of the injury. Whenever in doubt whether you should apply heat or cold, apply cold until you see a doctor.
- ✓ Immobilize arm or leg injuries with elastic bandage.
- ✓ Refer the victim to an aid center even if the injury may seem slight.



CHAPTER 6: SOFT TISSUE INJURIES

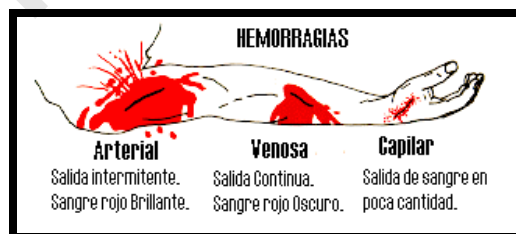
1. General:

These are the most common problems in first aid care. These injuries can cause grave damage, incapacity or death. In addition to bones and cartilages the organism is covered with soft tissues, muscles, fat, tendons, ligaments, membranes, mucosa, blood vessels and skin. Whenever these tissues are injured or torn there is danger of infection; microorganisms can enter the body through an excoriation, a cut, a burn or a puncture. An infection is the organism's response to bacterial growth within body tissues.

The manifestations of an infection at the place of an injury are: inflammation, reddening, pain, heat (to the touch) in the zone and pus drainage. Grave infections provoke fever, general malaise, despondency, somnolence, lack of appetite, nausea and, depending on the type of microorganism that causes the infection, other manifestations. There is a grave infection called tetanus which can be acquired through an injury in soft tissue. Infection manifestations can show up within hours or days after the injury occurs.

2. Hemorrhages:

Blood circulates through the interior of blood vessels (arteries, veins and capillaries), which transport it throughout the body. When one of these blood vessels breaks, blood comes from the interior, thus originating a hemorrhage.



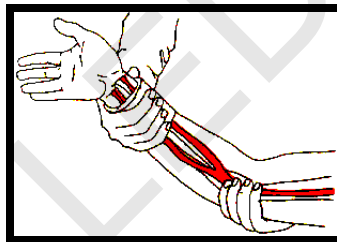
Any loss of blood must be controlled as soon as possible. In case of hemorrhages, the organism puts to work its mechanisms to control it, adding the blood platelets around the injured vessel and forming a clot which plugs the vessel, preventing blood exit. Attention must be immediate because, within minutes, blood loss can be total, causing shock and death.



2.1. External hemorrhage:

Occurs when blood exits through a wound. Divided in:

- ✓ **Capillary or superficial hemorrhage:** Only compromises superficial blood vessels that irrigate the skin; is scant and can be easily controlled.
- ✓ **Venous hemorrhage:** Veins carry blood from the organs to the heart; they are characterized by their dark red blood color and continuous exit, scant or abundant.
- ✓ **Arterial hemorrhage:** Arteries carry blood from the heart to other organs and the rest of the body; they are characterized by their bright red color, their abundant and intermittent exit, coinciding with each pulsation.



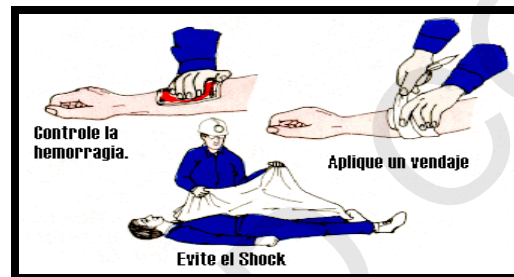
- ✓ **External hemorrhage control:** Lay the victim down. Put on disposable latex gloves. Uncover the place of the injury to evaluate the type of hemorrhage since this is not always visible; it may be hidden by the victim's clothes or position. To identify the type of hemorrhage, dry the wound with a clean cloth or gauze. If conscious, give the victim oral serum or water to drink. To control the hemorrhage, follow these steps (in this order, if possible):

- **Direct Pressure:** apply over the wound a compress or clean cloth putting on strong pressure. If a compress or cloth is not available, you can do it directly with your hands, as long as you do not have any wounds in your hands or are protected with gloves.

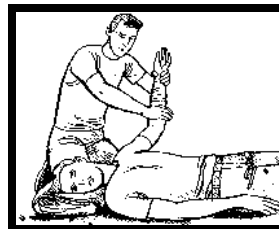
The majority of hemorrhages can be controlled with direct pressure. Direct pressure with the hand can be substituted with a pressure bandage, when wounds are too big or when you have to attend other victims.



This technique is generally used simultaneously with elevation of the affected part except when you suspect backbone injury or fractures, (you must immobilize before raising the extremity).



- **Elevation:** Elevation of the injured part diminishes blood pressure at the place of the injury and reduces the hemorrhage. If the wound is located in a lower or upper member, raise it above Heart level. Cover the dressings with a roll bandage. If bleeding continues place additional dressings without removing the initial bandage.



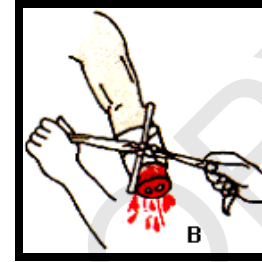
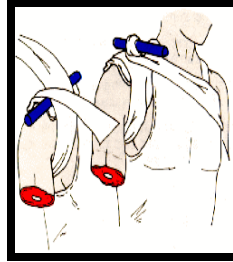
- **Direct pressure on the artery:** This consists of pressing the fingertips on an artery against an underlying bone. It is used when you have not been able to control a hemorrhage by direct pressure and elevating the extremity or in cases where the previous methods can't be used (open fractures). This technique reduces irrigation of the entire member not just the wound, as is the case with direct pressure. When using the pressure point one must simultaneously make direct pressure over the wound and elevation. To control hemorrhages on upper or lower members do the following:



- ✓ **On upper members:** Pressure is exerted on the brachial artery, internal face of the mid third of the arm. This pressure diminishes blood in the arm, forearm and hand. To apply pressure, place the palm of your hand below the victim's arm, feel the artery and press it against the bone.
- ✓ **On lower members:** Pressure is exerted on the groin over the femora artery. This pressure diminishes the hemorrhage on the thigh, leg and foot. Place the base of your hand's palm in the mid part of the groin's crease. If hemorrhaging stops after three minutes of pressure, slowly release the direct pressure point. If it continues, exert pressure on the artery again. Wash your hands after the attention.



- **Tourniquet:** It must be used as a last resort due to the grave consequences its usage brings and is reserved only for those cases where the hemorrhage is so severe that the three previous methods have failed, such as an amputation, where it must be the first step towards effective hemorrhage control (the patient's life is threatened). Use a folded triangular bandage or a cloth bandage, at least 4 cm wide. (Do not use thin bandages, cords or wires). Place the bandage four fingers above the wound. Make two turns around the arm or the leg. Make a simple knot at the bandage's end. Place a short and strong stick. Make two more knots over the stick. Slowly turn the stick until the hemorrhage is controlled. Loosen once every 7 minutes. Transfer the victim immediately to an aid center.



2.2. Internal Hemorrhage:

That whereby the blood does not flow to the body's exterior, but stays within, generally accumulating under the skin or within an organic cavity, being this the gravest case. Internal hemorrhages include grave injuries that can cause shock, cardiac arrest or pulmonary failure. They may be provoked by crushing, punctures, torn organs and blood vessels and fractures. Whatever type of hemorrhage produces reduction in circulating blood, which the organism tries to maintain, especially in the most vital organs such as: heart, brain and lungs.

- ✓ **Signs of internal hemorrhages:** Very sensitive or rigid abdomen, bruises on different body parts. Loss of blood through the rectum or vagina. Vomit with blood. Closed fractures. Shock manifestations.
- ✓ **Attention of internal hemorrhages:** If the victim presents symptoms of internal hemorrhage or you suspect the strength of what caused the injury has enough to provoke one, transfer the victim as soon as possible. Control respiration and pulse every 5 minutes. Cover the victim. Do not give anything to drink.

3. Hemorrhages in specific parts of the body:

3.1. Face and skull:

Cover with a clean gauze or cloth. If you do not suspect there is a fracture, exert direct pressure until the hemorrhage stops.

3.2. Nose:

- ✓ Sit the victim down.
- ✓ The sitting position reduces bleeding risk for head and nose.



- ✓ Incline the head forward to avoid swallowing blood and provoking vomit.
- ✓ Press on the nose's partition (above the nasal graves) with your index finger and thumb. This allows the obstruction of the main artery that irrigates the nose.
- ✓ If bleeding continues, plug with gauze wetted in distilled or steamed water.
- ✓ Apply compress cold water or ice on the forehead and (wrapped in a gauze towel or compress).
- ✓ Do not expose to the sun. Do not allow the patient to blow the nose because bleeding will increase. Remit to an aid center.




3.3. Dental:

- ✓ Plug the hole in the bleeding gum with gauze wetted in oxygenated water (diluted) and ask him to bite strongly.
- ✓ Do not allow the patient to make gargles with any type of solution, much less with warm water. Do not give alcoholic beverages to drink.
- ✓ Do not allow the introduction of elements on the alveolus such as ash, salt, coffee, etc. remit the patient to a dentist.

3.4. Female Genital Hemorrhage:

This type of hemorrhage is frequent in cases of menstrual irregularities, abortion or post labor. Place the patient in horizontal position and calm her; cover her to keep her from getting cold. If you do not have hygienic towels use dressings or gauze. Control vital signs continually. If conscious, give her oral serum. Do not give alcoholic beverages. Quickly send her to an aid center, keeping her in a horizontal position.

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

4. Burns:

Burns are a specific type of soft tissue injury produced by physical, chemical or electric agents or radiations. A severe burn can put life in danger and requires immediate medical attention. The severity of the burn depends on the temperature of the medium that caused it and the duration of the exposure of the victim to it. The severity of the burn is also determined by its location on the body, its size, as well as the victim's age and physical condition.

4.1. Causes of burns:

- ✓ **Physical agents:** Hot solids; boiling liquids; cold solids (exposure at very low temperatures).
- ✓ **Chemical agents:** Gasoline and, in general, petroleum byproducts. Acids (hydrochloric or sulfuric). Bases (caustic soda, lime or carbide).
- ✓ **Electric Agents:** Electric discharges at different voltages, radio active agents.

4.2. Severe Burns:

Burns that make respiration difficult, those that cover more than one part of the body; burns on the head, neck, hands, feet and genitals are considered severe. Burns on a child or elder. Extensive or deep burns. Burns caused by chemical substances, explosions or electricity. Severe burns can be deadly; therefore, they require the earliest possible medical attention.

4.3. Signs of burns:

Burns can be of: first, second or third degree, according to the injured skin layers and deep tissues (muscles, nerves and blood vessels).

4.4. First degree burns:

A burn that injures the superficial layer of the skin is considered as a first degree burn. This type of burn is generally caused by extended exposure to the sun or instant exposure to another form of heat (iron, hot liquids). Symptoms: skin reddening; dry skin, intense burning-type pain; moderate inflammation; great sensitivity at the injury's location.



4.5. Second degree burns:

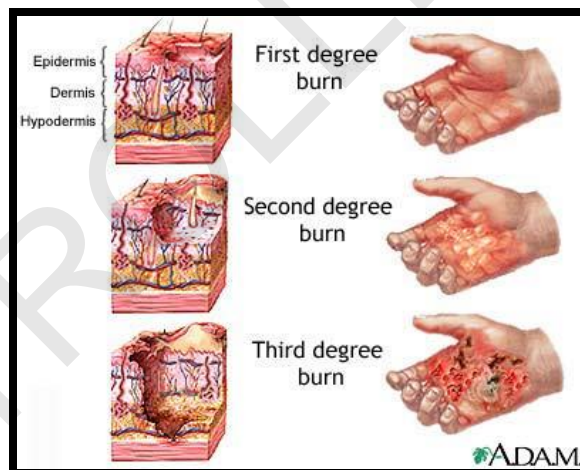
Burns where the superficial and intermediate skin layers are injured.

- ✓ **Symptoms:** blister formation, intense pain, inflammation of the affected area.

4.6. Third degree burns:

Burns where all skin layers are compromised; affect tissues which are located beneath the skin, such as blood vessels, tendons, nerves, muscles and can even injure the bone. This type of burn is produced by prolonged contact with hot elements, caustics or by electricity.

- ✓ **Symptoms:** characterized by dry skin. Stiff skin. There is no pain due to destruction of nervous terminations. Always require medical attention, even if the injury is not extensive.



4.7. General care of burns:

Calm the victim and relatives. Evaluate the burn's type and severity. Carefully remove rings, watch, bracelet, belt or tight clothing that press the injured zone before it begins to inflame.


- ✓ Do not break blisters, to avoid infections and greater traumatism.
- ✓ Cool down the burnt area for several minutes; apply saline solution or cold water (not freezing).



- ✓ Do not use ice, nor pomades or ointments; these may delay medical treatment.
- ✓ Cover the burnt area with a dressing or a cloth soaked in saline solution or clean coldwater and hold it with a bandage to avoid infection.
- ✓ Do not apply pressure against the burn.
- ✓ If the burn is on hands or feet place gauze between the fingers before placing the bandage.
- ✓ Administrate an analgesic, if necessary, to reduce the pain.
- ✓ Administrate abundant liquids orally, as long as the victim is conscious; whenever possible, give oral serum.
- ✓ If burns are on the face or neck place a pillow or cushion below the shoulders and control vital signs, cover burns on the face with sterile gauze or clean cloth, making openings for the eyes, nose and mouth.
- ✓ Take the victim to and aid center.

4.8. Specific burns:

- ✓ **Burns due to vapor inhalation:** When vapors are inhaled burns in respiratory tracks are generally produced. In this case:
 - Remove the victim from the scene of the accident.
 - Cover facial burns with clean gauze or cloth opening wholes for eyes, nose and mouth.
 - If there is no respiration, begin first aid respiration.
 - If the victim has no pulse, begin cardio pulmonary resuscitation.
 - Immediately transfer the victim to an aid center.
- ✓ **Burns due to fire:** If the person is running, stop him. Put out the fire on the victim. Cover him with a blanket or similar, being careful not to burn yourself. You can also extinguish the fire using water, sand or earth. Do not do it with a fire extinguisher; its content is highly toxic. If the hair has caught on the cover the face very quickly to suffocate the fire and remove the blanket immediately to prevent toxic gas inhalation. Once the fire is out, loosen

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

and remove the clothing that is not adhered to the injuries. Apply physiologic saline solution over the burn. Cover the burn with a cloth or a dressing, and then fix it loosely with a bandage.

- ✓ **How to rescue victims when a fire occurs:** If smoke and gases accumulate, do the following: Open the door with your foot, placing yourself to one side to avoid burns or asphyxiation by the flames or gases coming from the precinct. To enter the precinct crawl on the floor, previously covering your mouth and nose with a wet handkerchief and, whenever possible, carry another one to protect the victim. Withdraw the victim by dragging him to avoid further smoke and gases inhalation, since these accumulate at the upper part of the precinct. Place the victim in a safe place. Evaluate the condition and injuries and provide the appropriate first aid.
- ✓ **Burns with chemicals:** Wash with plenty of water the burnt area (eyes, skin or mucus) for no less than 30 minutes. Cover the burn with a clean cloth to avoid infections. Transfer the victim to an aid center.

4.9. Burns due to electricity:

Electric burns may occur anywhere. Contact with any electric source can make electricity travel through a person's body causing severe injuries, incapacity or death. Electric burns are almost always of third degree, with an entry point and one or more exit points, where carbonized or exploded areas can be observed. They generally do not bleed and are painless. Most importantly, take into account those internal injuries that may occur, such as respiratory arrest, cardio-respiratory arrest or shock produced by the passing of current between entry and exit points. Electricity in high tension cables can jump or form an arc of up to 18 meters and kill a person. Therefore, do not get near the victim unless you have been officially informed that electric current has been stopped. Electric devices and low tension cables produce injuries of lesser intensity. Before giving first aid, interrupt contact, cutting the current off from the main conduction in case it is



accessible. If you cannot interrupt electric flow, do the following: stand on a dry wooden or rubber surface. Remove the victim from the electric source with a wooden or plastic object because these do not conduct electricity. Do not touch the victim with your hands because you will receive the electric discharge. Evaluate respiration and pulse; if not present, give cardiopulmonary resuscitation. Cover the injured area or areas with a clean and dry dressing or cloth. Transfer to an aid center as quickly as possible.

4.10. Burns due to freezing:

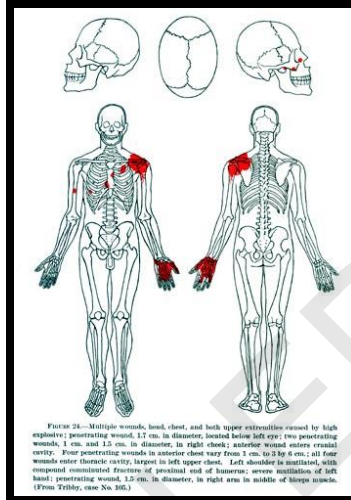
Low temperatures produce burns or injuries on the skin, very much like heat does, especially in places like: feet, hands, nose or ears. If there is freezing you should do the following:

- ✓ Remove the victim from the place.
- ✓ Loosen clothing to facilitate blood circulation.
- ✓ If feet are frozen, do not allow the victim to walk. Gradually raise the temperature at the injured parts using warm water (360 to 370°C), being careful not to apply direct heat over the frozen part.
- ✓ Keep the area humid until the area warms up again. To warm nose and ears, cover them with your hands.
- ✓ If the victim is conscious, have him drink warm sweet beverages. Do not give alcoholic beverages. Shelter them as good as possible. Do not use heaters.
- ✓ Raise the affected part to reduce inflammation and pain.
- ✓ Do not apply creams or other medicines. Do not massage the affected area.
- ✓ If there are blisters, do not burst them.
- ✓ After the victim has warmed up, bandage the area with sterile dressing; place gauze between the fingers before bandaging.

5. Wounds:

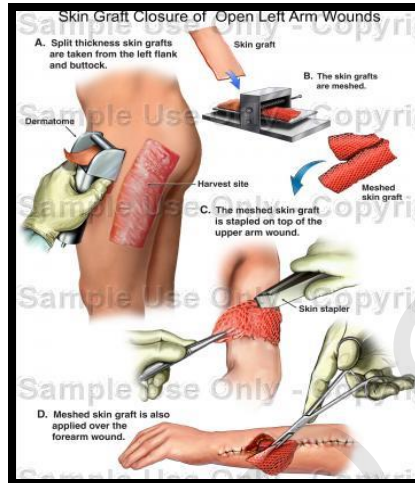


These are injuries that produce loss of integrity of soft tissues; caused by external agents such as a knife or internal agents such as a fractured bone. They can be open or closed, light or complex. The main are: pain, hemorrhage, damage or destruction of soft tissues.



5.1. Classification of wounds:

- ✓ **Open wounds:** In this type of wounds separation of soft tissues can be observed. These are the most susceptible to contamination.
- ✓ **Closed wounds:** Those where soft tissue separation cannot be observed, generally caused by blows; the hemorrhage accumulates under the skin (bruise), in cavities or viscera. Must be treated quickly because they can compromise an organ's function or blood circulation.
- ✓ **Simple wounds:** Wounds that affect the skin, without damaging important organs.
- ✓ **Complex wounds:** Long and deep wounds with abundant hemorrhage; generally there are injured muscles, tendons, nerves, blood vessels, internal organs and visceral perforation may or may not occur.

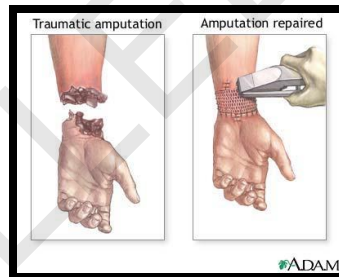


5.2. Classification according to the element that cause them:

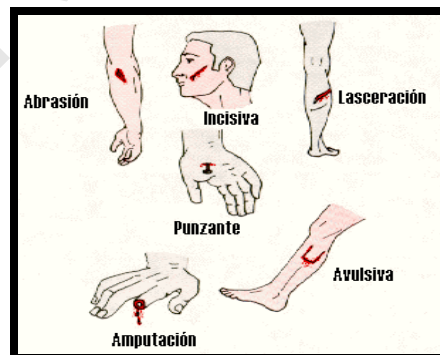
- ✓ **Cutting or incisive wounds:** Produced by sharp objects such as cans, glasses, knives, which may sever muscles, tendons and nerves. The wound's edges are clean and linear; hemorrhage may be scarce, moderate or abundant, depending on the location, number and caliber of the severed blood vessels.
- ✓ **Sharp wounds:** Produced by pointed objects such as nails, needles, fishing hooks or snake bites. The injury is painful, hemorrhage is scarce and the entry orifices are slightly noticeable; it is considered to be the most dangerous because it can be deep, it may have perforated viscera and provoke internal hemorrhage. The risk of infection is greater because there is no cleansing action by the blood that flows to the exterior. Tetanus is one of the complications of this type of wounds.
- ✓ **Sharpe wounds:** Produced by sharp pointed objects such as scissors, daggers, knives or fractured bones.
- ✓ **Partied wounds:** Produced by objects with serrated edges (saws or cans). There is tear tissue and the wound's edges are irregular.
- ✓ **Firearm wounds:** Produced by projectiles; generally the entry orifice is small, round, clean while the exit orifice is bigger; the hemorrhage depends on the injured blood vessel; there may be fractures or visceral perforation, depending on the injury' s location.



- ✓ **Scratches, excoriations or abrasions:** Produced by friction or scrape of the skin on hard surfaces. There is loss of the skin's most superficial layer, heat, and scarce hemorrhage. Frequently, they get infected.
- ✓ **Avulsivas wounds:** Those where tissues separate and tear off from the victim's body. A cutting or lacerated wound can become avulsivas. Bleeding is abundant. For example: dog bite.
- ✓ **Bruise wounds:** Produced by hard objects. There is pain and bruises; these wounds occur due to bone resistance to the blow, injuring soft tissues.
- ✓ **Bruises:** These are closed wounds caused by blows. They appear as bruises.
- ✓ **Amputation:** It is the total or partial extirpation of an extremity.



- ✓ **Crush:** When body parts are trapped by heavy objects. They can include bone fractures, external organ injuries and, at times, abundant internal and external hemorrhage.



5.3. Care of wounds:

- ✓ **Slight wounds:** place the victim in a comfortable position and ask him about the cause for the injury. Wash your hands and put on the latex gloves, avoid touching the wound with



your fingers. Remove clothing from the wound. Dry the wound touching it with gauze, inside and at the ends. Only use the gauze once. Never use cotton, handkerchiefs or paper napkins, these take off specks and may cause infections. Wash the wound with abundant water and iodized soap. Apply iodized antiseptic. Cover the injury with a bandage, gauze, dressing, cloths, hold it with sticking plaster or bandage if necessary. Do not apply salt, coffee, dung, spider webs, for these cause infection on the wound and tetanus may appear. Do not apply medicines (powdered or antibiotics cream) because allergies may appear. Wash your hands after providing the aid.

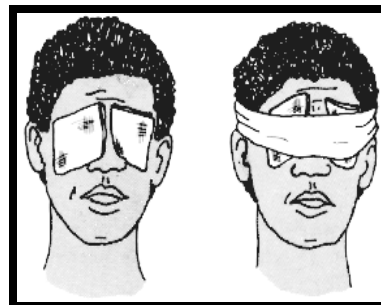
- ✓ **Bruise wounds and bruises:** raise the injured part. Apply cold cloth or an ice bag; wrap the affected area with a towel to reduce hemorrhaging and swelling.

- ✓ **Wounds produced by fishing hooks:** To remove the hook you must know its direction and curvature. If it bleeds, dry the wound with gauze. If the hook is nailed in an area of thin tissue (ear Pavilion, nasal wing, lip, skin between the fingers), do the following: Push the nail trough the skin following the hook's curvature, until the tip comes out at the other side. With pliers, cut the hook's tip and remove it in the direction opposite that at which it entered. You can also cut it at the posterior part of the tip, near the skin, and remove it where the tip came out. If you do not have instruments to cut the hook, it is best that a doctor remove the hook.

- ✓ **Lacerated or avulsivas wounds:** In many cases, tom tissue can be joined again at an aid center; therefore: irrigate the tissues with saline solution; do not try to wash the wound. If possible, rejoin tom tissues. Cover the wound with dressing or cloth. If bleeding, apply direct pressure on the wound with a bandage and raise the affected member. If the wound continues bleeding, do not remove the bandage and make direct pressure on the artery that irrigates the injured area. Apply cold locally (ice bag wrapped in a towel) over the area.



- ✓ **In case of crushing:** Ask for help and retire the weight as quick as possible. Write the hour of the rescue and the duration of the crushing. Control the serious hemorrhages and cover the wounds, immobilize the fractures if exists. Put cold cloths or ice bags involved in a towel. Of attention to shock.
- ✓ **Wounds in the face or crane:** Generally these wounds bleed a lot because of the irrigation of this area. Sometimes the sunken bones can be observed through the exit of liquid, hemorrhage trough the ears and nose. The injured can manifest double vision, present vomit or face paralysis. In front these kinds of wounds you must do the following: Lie down the victim and tranquilize her. Clean softly the wound with gauze or a humid fabric. Cover with dressing, cloth or clean fabric, without applying pressure because it can be a fracture with a depressed bone. Mobilize the victim as slowly as possible because the cranium wounds are frequently associated with neck and cranium fractures and that's why it is necessary to do the immobilization before the translocation. In eyes injuries, cover with a cardboard cone or with a plastic reject table glass the injures eye, Apply a bandage that cover both eyes. Take the victim to health organization fast.



- ✓ **Thorax wounds:** hemorrhages with bubbles, whistling sound trough whilst the victim is breathing, pain, coughing, expectoration and difficulties in breathing because there is to pulmonary injury. With these kinds of injuries it's necessary to sweep the wound with a clean fabric or gauze. If the wound is big and there is no whistle sound cover it with a gaze or clean fabric quickly at the moment of the respiration, tie with sticking plaster or with a



bandage. Try to do it as hermetically possible to avoid the entrance of air. If you don't have clean fabric or gauze uses the hand to cover the wound. Don't introduce any kind of material through the wound.

- If it's a small wound and presents suction in the thorax, cover the wound with a big sterilize dressing; tie the dressing with sticking plaster around the borders, less one that must stay untie to allow the exit of the air during the exhalation. Put the victim in a lateral position over the affected side to avoid a complication of the other lung. If the injured cant take being in that position or presents difficulties for breathing give him an almost sitting position helped with a support, pillow or other elements to make easier the respiration. Take the victim to the medical center.
- **Abdominal wounds:** can be intestine perforation with spill of the content, hemorrhages and the victim can enter in shock. In these cases do the following: Lay down the victim over himself with the legs flexed, putting pillows under his knees. Don't raise his head because the abdominal musc1es tensions and increases the pain. Don't give anything to eat or drink. If there are visceral spilling, don't try to put them in because the abdominal cavity can be contaminated producing an infection. Cover the wound with clean fabric, cloth or humid gauze with salad solution or fresh water. Tie it with a bandage in the shape of a tie, avoid make pressure. Don't use small gauzes because they can stay inside the cavity.
- **Wounds with stuck elements:** Put the victim in a comfortable position. Don't retire the element that causes the wound because an abundant hemorrhage can be produced. Immobilize the element with a bandage for avoiding the movement causing another injures.



5.4. Recommendation for the transport of the amputated members:

Watch the amputated part with salt solution and wrap it in gauze or in a clean fabric humid with salt solution. Place the amputated parts in a plastic bag. Then put them in another bag with ice. Be careful that the amputated member is protected in a plastic bag to avoid contamination.

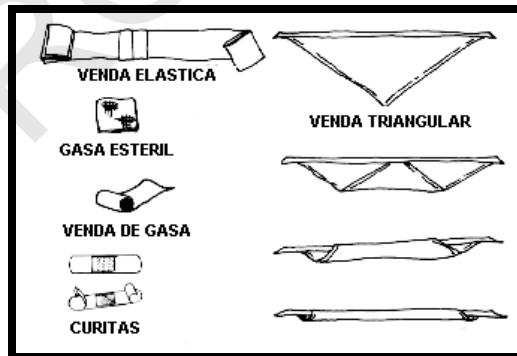
CHAPTER 7: BANDAGES

1. General:

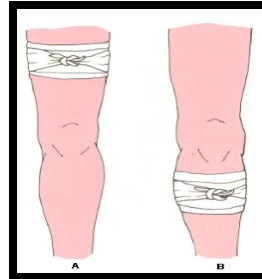
The bandages are the ties made with strips of linen cloth or other materials with the purpose of wrap an extremity or another injured part of the human body. The bandages are use to support dressings, to fix splints and articulations.

2. The bandages:

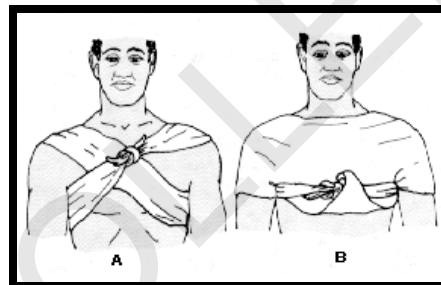
Are the tires; they have differences in size and in the material quality. The most used are the followings: bandage with border of gauze, bandage of skin gauze, muslin gauze bandage, and elastic bandage. Some kinds of bandages are:



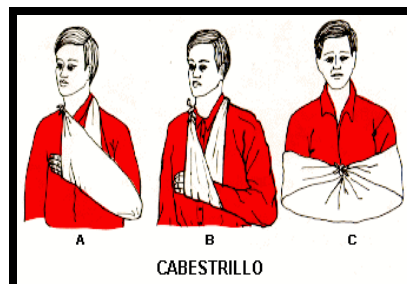
- ✓ **Bandage roll:** they exist in different materials like cotton, elastic, semi elastic and other ones like the plaster bandage. A narrow bandage is used for wrap a hand or the wrist, medium for an arm or ankle, and a wide one for a leg.




- ✓ **Bandage Triangular:** triangular bandage: Its shape is of triangle generally is made of resistant fabric and its side can be varied in concordance to the place were going to be used. The triangular bandage has multiple uses, with it can be made bandages in different parts of the body, using it as a sling, folded or extended.

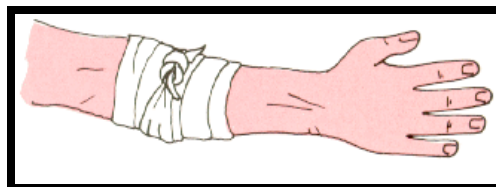


- ✓ **Slings:** Can be used to hold the hand or the arm in cases of injuries, bumps, fractures, sprains and luxation.
 - **Procedure:** Put the forearm of the victim slightly oblique, the arm must stay higher than the elbow of the victim. Go behind the victim and put him the extended triangular bandage. Take the inferior part of the bandage to the shoulder of the injured arm. Tie both extremes of the bandage with a knot to a side of the neck (the injured side) never over the spine. Let the finger uncovered to control the color and the temperature.



| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

- ✓ **The rubber bandages:** are small adhesive bandages.
- ✓ **The dressings:** are small pillows usually full of gauze and absorbent cotton putted directly over the wound. They are different ways of applying the bandages the most common are:
- ✓ **Circular bandage:** it is used to fix the initial and the final extremes of an immobilization or to entirely fix a dressing, also to initiate or end a bandage, to hold dressings in the front, superior and inferior members and to control hemorrhages.
- ✓ **Spiral bandage:** their use generally in extremity, in this case the bandage covers the 2/3 of the previous turn and its situated oblique to the edge of the extremity. Employ an elastic or semi-elastic bandage because it can be adapted to the area which is going to be bandaged its use is to hold gauzes, dressings or rods in the arm, forearm , hand , thigh and leg. Begin the bandage always at the most distant part away from the heart and in direction of the vein circulation. A void bandaging the articulations in extension because it is difficult to get movement when it is completed. If it's possible avoid covering the fingers of the hands and toes on the feet as an articulation.
- ✓ **Spiral bandage or with folds:** its use for the forearm or leg. Begin with two circular turns to fix the bandage. Direct the bandage upward like a spiral. Put the thumb over the bandage, fold it and direct it down and behind. Round the limb and repeat the maneuver, finish the bandage with two circular turns.

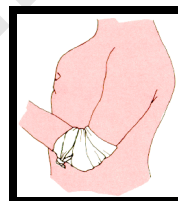
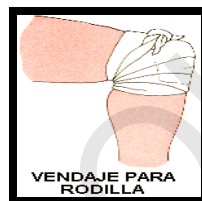


- ✓ **Figure eight bandage or turtle:** it's used in the articulations (ankle, knee, shoulder, elbow and wrist) because it allows the victim to have some mobility. Put the articulation slightly flexed and

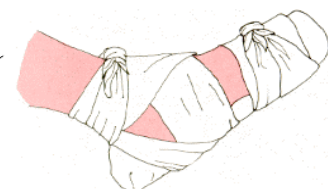


make a circular round with the bandage between the articulations. Direct the bandage in an alternative way to the up side and then down side in a way that the bandage always passes and crosses over at the center of the articulation.

- ✓ **Recurrent turn:** It is used for finger tops, hands or amputation stumps. After fixing the bandage with a circular turn the roll is taken to the extreme part of the finger or stump and its folded back. The fold is made and turned to the distal part. Finally it is fixed with a circular turn.
- ✓ **Bandage for elbow or knee:** With the semi flexed articulation make two circ1e turns in the center of the articulation, then continue crossing in a figure of eight , alternating over the arm and forearm or the leg and the thigh. In this kind of bandage you must be careful not to totally immobilize the articulation.

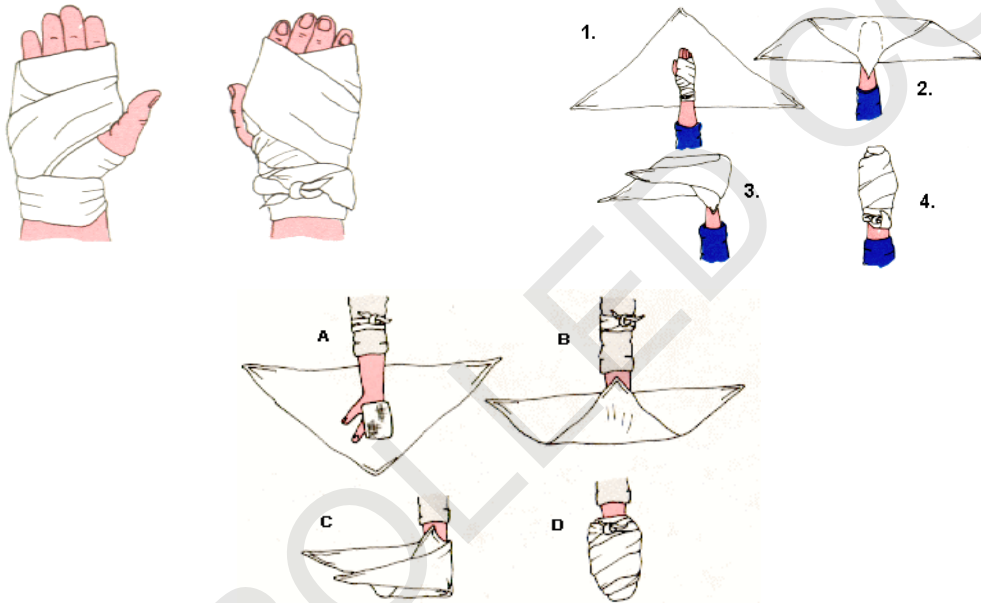


- ✓ **Bandage for the ankle or toe:** begin with two circular in the ankle level. Proceed to effectuate several rounds to alternatively cover the foot and ankle, remounting the distal to the proximal part and finish with two circular turns at the uppermost part of the ankle and the tie the bandage.

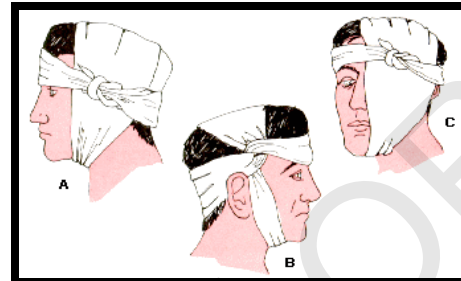




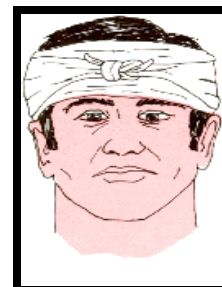
- ✓ **Bandage for hand and fingers:** Begin making the bandage with two circle turns at the level of the wrist. Take the bandage to the finger and make two recurrent turns that are fixed with two turns at the level of the fingers. To complete the dressing follow with several spirals in a figure of eight between the finger and the wrist and finally finish with two turns and tie at the level of the wrist.



- ✓ **Bandage for the foot:** it's known as slipper. It must not be applied too tightly because if the toes are covered it's impossible to control the blood circulation. Begin with the heel giving two turns following the shape of the foot, when you reach the toes, direct the bandage down under the toes so that the bandage is at the level of the instep. From this point the bandage is taken to the heel where it is wrapped around before going again to the toes. In this way the bandage ascends through the foot in figure 8 turns. Finish with two circle turns at the level of the ankle.
- ✓ **Eye bandage:** give two turns at the level of the forehead holding the superior border of the dressing. Descend the bandage down to the injured eye, covering the ear on the same side as it is applied. Repeat this maneuver as many times as is needed to cover at all the injured eye.



- ✓ **Head bandage or capelin:** to make the dressing, it is best to have two bandages. Begin with a turn around the head in a horizontal plane. Put the proximal side of the other bandage level with the forehead and direct the bandage back following the centre line of the cranium until finding the level of the other bandage, make a circular turn again with the other bandage. Do this in a way so that the first end of the bandage stays trapped the same as the bandage that was previously slid back. In this way the recurrent turns with the bandage are fixed with circular turns with the second bandage.




- ✓ **Tie shape bandage:** fold the top to the base of the bandage; go for the half in the same direction according to the required width. Is used to bandage the wrist, hand, knee and foot.

CHAPTER 8: ADEQUATE TRANSPORTATION OF THE INJURED

1. General:

The unnecessary transfer of the victims of an accident or the serious patients is very dangerous. "Transport them safely ". When transferring a victim or a serious patient, you must try and guarantee that any injuries will not increase, nor new injuries will be caused to the patient or that unnecessary movement

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

or inadequate transport can complicate the recovery. It is better to administer attention at the site of the accident, unless there exists an imminent danger to the life of the victim or the helper such as a fire, explosion danger or collapses of a building. Once a decision has been made to transfer the victim, consider the security of the victim like your own. Also consider your own capabilities, as well as the presence of other people who can help you.

2. Methods to lift a person:

2.1. Pull:

This method is used when it is necessary to remove a victim from the area of the danger, to a distance of no more than 10 meters and the helper is alone. This method should not be used when the land is unequal or irregular (stones, glasses, and stairs). Place the arms of the victim in a crossed position on his/her thorax. Put yourself behind the head and put your arms below the shoulders thus sustaining the neck and the head. Drag the injured person along the floor. If the victim has a coat or jacket, undo and pull backwards so that the head rests on the clothing. Drag along the floor by holding the ends of the clothing (coat, jacket or shirt).

If in an enclosed space and there is gas accumulation or smoke, do the following: If the injured is conscious and cannot mobilize himself, kneel down and tell him you are to pass your arms around his neck, interlacing the hands. If he is unconscious, fasten his hands with a bandage up to the wrists then carry out the same procedure. If the victim is very big you can use the drag method by the feet, but make sure that the victim does not have a head injury or that you are pulling across unequal or irregular land.

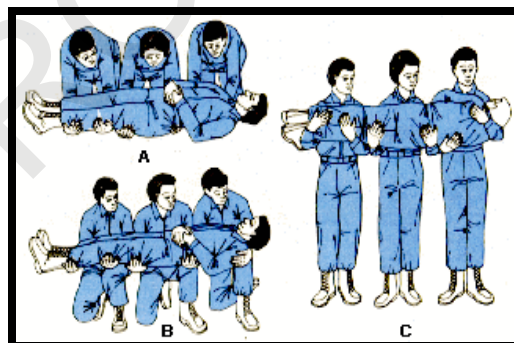
2.2. Loading of arms:

When the victim is of low weight. Pass an arm below the thighs of the victim. Put the other arm around the trunk, over the waist and lift the victim.



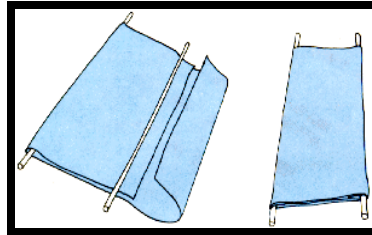
2.3. With the help of a quilt or blanket:

In order to raise an injured person with the help of a quilt or blanket you will need 3 to 5 helpers. This method is used when there is no stretcher available and the distance to cross is short. However, this must not be used if injured person is suspected to have spinal injuries. To place the quilt or the blanket doubled in accordance to the size of the victim. Two helpers are kneel next to the victim and they hold him each side (one of the helpers maintains the hips and the legs, the other the back and the head); the third one approaches the blanket or quilt and pushes it in such a way that it is near the back. Place the victim laid down on his back and prepare to lift him.

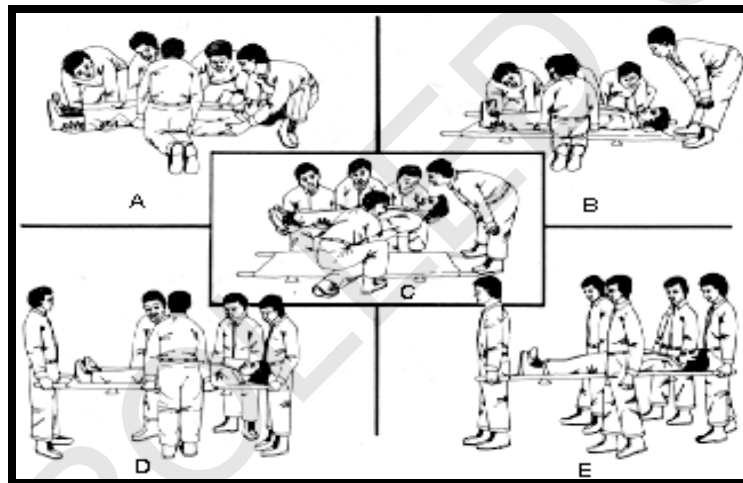


2.4. The correct method to lift an injured person onto a stretcher:

Four helpers are placed kneeling each side: Two in the superior part, they take the cover or blanket or to the height of the shoulders and the waist and the legs, and fifth behind the head. Haul the ends of the blanket to avoid it from coiling underneath the body.



Coil the edges of the blanket or cover surrounding the body of the victim. Then to a verbal order, lift up and walk slowly of each side, initiating the march with the foot that is closest to the feet of the injured.




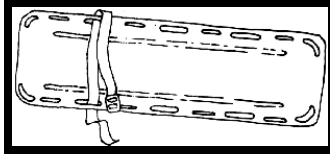
3. How to transport an injured with the help of elements:

The injured can be transported using different elements like: chairs, stretcher and a vehicle; the choice depends on the injuries and the distance to carry and the availability of the elements.

3.1. Transport in chair:

The chair can be used when the person is conscious and does not have severe injuries, especially if it is necessary to lower or to climb stairs. Be sure, the way is free of obstacles, in order to avoid the helpers from slipping. To use this method of transport, 2 helpers are needed. Verify that the chair is strong. Sit the victim in the chair. If he cannot sit without aid, do the following:

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |



Cross the legs of the victim, a helper kneels to the side of the injurer's head. Put a hand under the nape of the neck, the other hand under the scapulas. In a single movement pull the injured person, against him and maintain him by a leg. Place an arm below the armpit of the victim taking the hand near the wrist. With the other hand take similarly the other arm and cross them, supporting the head against the helper, maintain the trunk of the victim between your arms. Lift up with the back straight, taking the strain with the legs, while the other helper maintains the legs of the victim. And, to a verbal order, lift up simultaneously and place the victim in the chair. Assure him when in the chair; incline the chair backwards, so that the back of the victim stays against back of the chair. To a verbal order, lift the chair simultaneously and walk slowly.

3.2. Kinds of stretchers:

The types of stretchers:

- ✓ **Canvas:** stretchers to transport victims who do not present/ display serious injury
- ✓ Rigid Stretchers to transport injures of the column; these are of wood, metallic or acrylic.
- ✓ Stretchers with strap holes to transport injured of the column.
- ✓ Stretcher for the transport of injured in operations in helicopters.


**CHAPTER 9: FIRST AID KITS SOME TIPS TO HELP CREATE AN IDEAL KIT FOR YOU****1. Rule #1 "The Context Equals the Content."**

There are many excellent first aid kits on the market today. Manufacturers have done their best to take into consideration many factors, from cost to the actual contents. That is why there are so many choices in style and content. For many people, they just want a "good first aid kit in their pack, because they need one." A good comparison is to look in someone's car. Some people are comfortable adding oil and jumping a dead battery, so they carry extra oil and jumper cables, some people do not. It usually is the person who has had experience and training that carries the appropriate amount with them, either in their car, or their backpacks. How do you know what to carry? Besides your experience in the environment in which you're traveling, you are now getting training to help you handle emergency situations. These are by far the most important components.

Now, to put together the "tools" that you will need. As superb as manufactured kits are, you will probably want to customize one, or build your own kit, using the context of its use as the major criteria.

Other factors include:

- ✓ The environment in which you travel will help you choose what is needed for potential problems that may arise, and how to handle an evacuation, if needed.
- ✓ The activity itself will help you, due to its remoteness, and potential problems in that environment.
- ✓ What do you have for other available resources, such as people, gear, and communications?

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

- ✓ Who is participating - how many, what is their medical history, knowledge and skill level.
- ✓ What can you improvise for splinting materials, litters, etc?
- ✓ What can not be improvised?

Remember the Three Mechanisms of Injury:


- Trauma
- Medical
- Environmental

2. The First Aid Kit

The kit itself needs to fit the environment and group's needs. Carrying a dry box on a backpacking trip can really be a memorable experience. Or the "biology experiment", that greets you when you open up a wet kit in an emergency. The kit needs to be organized and waterproof, accessible in an emergency and user friendly. Some groups, such as commercial raft companies, carry "minor med kits" on individual boats, and a "major med kit" in the sweep boat. In smaller groups, usually the person with the most medical training or the trip leader will carry the kit. In these situations, it is always good to know whom you have with you (medical history), and where their medications are, if necessary.

3. Let's get to the kit:

- ✓ **Carrying Device:** one that works best for you, and the environment in which you travel. Dry Bag/Box, fanny pack, compartmentalized pouch, Ziploc bags, etc.
- ✓ **Personal Protection:** it is generally a good idea to have these at easy access. Gloves can be placed in various places in your pack, or on yourself, such as a lifejacket in a film canister, etc.
- ✓ **Vinyl or Latex Gloves:** 2 to 4 pairs per person*
- ✓ **CPR Mask:** or at the very least, a CPR Shield
- ✓ **Airways:** dependent on level of training
- ✓ **Wound Care:** this is probably the most used portion of the kit:

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

- ✓ Bandages - 3" and/or 4" roller gauze that stretches and possibly self-adhering such as Kling, Curlex, and Coban. Like ace bandages, care should be given to checking CSM at regular intervals and taking care not to wrap too tight. They are usually reusable for the same injury, so 1-2 per person should work.
- ✓ **Dressings:** it is a personal preference to carry multiple sizes of sterile gauze bandages. But it is always easier to cut a 4" x 4" smaller than it is to make a 2" x 2" bigger. Although not necessary, different dressings will help make wound care much more manageable. 2 to 4 per person are minimal.
- ✓ **Non-Stick Gauze Pads:** is a great dressing to use directly on the wound. Wounds tend to "weep", and in long term care, dressings must be changed. If you have ever removed a regular gauze pad that has "wept" to the wound, then you will want some non-stick gauze, such as Telfa. 2 to 4 per person.
- ✓ **General Purpose Gauze Pads:** like the name, they have many uses for wound care, from padding to absorbency. Generally, these are used more than any other gauze, because of its versatility. Since these have so many uses, 4-6 per person.
- ✓ **Combine and Trauma Dressing:** used where high absorbency and/or padding are necessary. Larger sizes in these are usually recommended. Surgipad is the most common. 1-2 per person*
- ✓ **Occlusive Dressings:** an excellent dressing when you want to keep a wound dry in a wet environment. Care must be taken to remove these dressings during rest periods to help promote healing in a prolonged context. Examples include Bioclusive and Tegaderm. 1-2 per person*
- ✓ **Bandage Strips:** better known as Band-Aids, is really a bandage with an attached dressing. Strips when used on hands, etc. in a remote setting will need some help from duct or cloth tape. It is again important to change these regularly, so bring enough. Usually 6-8 per person*.




- ✓ **Tape:** a real necessity. 1" cloth tape is usually all that is needed in a basic first aid kit. From securing bandages to closing wounds, cloth tape can do it all. 1 roll. Duct, packaging and other



tapes make great securing tools for bandages, splints, clothing, etc. Be careful to watch for constriction and other circulation problems. Instead of carrying duct tape on a huge roll, great options such as water bottles, ski poles and lighters have been adorned with it in case of its inevitable use. 20-30 ft.*

- ✓ **Wound Cleansing:** a must in any remote setting needs to be done well and often. What is needed now is Povidine Iodine (PI) used in a solution with water, to adequately irrigate the wound and surrounding area. In many kits, PI is in the form of pre-soak pads that pack well, but you need quite a few to make the proper solution with water (looks like weak iced tea). Be careful of carrying it in bottles, it will leak. And, in cold environments it will freeze. There are some people who are allergic to iodine, so check your medical history first. Alternatives that have an alcohol base usually have a tendency to "sting" or "burn" if applied directly to a wound. There are some good biodegradable camping soaps, as well as medical "scrubs" that can be used for cleansing around wounds. The most important factor here is copious amounts of water for washing off residue. A irrigation syringe, 12cc to 60cc, works great for washing out wounds, as well as, a corner cut off a ziplock, which is squeezed like a cake decorator. Wound closing is an option when the person needs to be able to walk or paddle with a minor injury. The risk of infection is greater when the wound is close, so prior wound cleansing is vital. Butterfly bandages, Steri-strips, or even cloth tape can be used.
- ✓ **Splinting:** is probably the most improvised skill there is. Ensolite pads, lifejackets, packs, paddles, ski poles, etc. all make great splints. The key here is to make sure you use the injured's equipment first! There is nothing worse then watching the helicopter fly away, after a successful rescue, with your sleeping pad wrapped around a person's unstable leg injury. The two best commercial splints going for extremity splinting, is the 36" Sam Splint (foam covered aluminum), and the aluminum wire splint. You will also need a way of securing the splint to the injured. Ace wraps, Coban, Kling, and triangular bandages all work well. And, don't forget the duct tape. Remember to watch for constriction, comfort, and compatibility.
- ✓ **Blister Care:** the key here is prevention. At the first sign of a hot spot, care should be taken. Personal preferences include, moleskin, molefoam, first aid tape, and duct tape to prevent blisters

| | | |
|---|----------------------------------|----------------------|
|  | SEAFARERS TRAINING CENTER | M-BFA(I)-03 |
| | ELEMENTARY FIRST AID | REV. 5 - 2015 |

from forming. Once a blister forms, the care changes to open wound care, with wound cleansing and proper bandaging.

- ✓ **Hardware:** This stuff that can make someone a hero for being able to pull out a splinter, or make an emergency shelter.
- ✓ **Tweezers:** The "Splinter Grabber" is the best for compatibility, followed by splinter (really) tweezers.
- ✓ **Pins:** both safety and blanket pins have multiple uses. Mostly, they can be used wherever material needs to be secured such as using a sleeve as a improvised sling, or securing a tarp as a shelter.
- ✓ **Plastic bags:** somewhere in your pack, an extra plastic bag is a good idea. Large zip locks make great irrigators, improvised glove, or occlusive layer. Big trash bags are perfect for vapor barriers when wrapping up a patient, emergency shelter, and to put trash in.
- ✓ **Thermometer:** in a cold environment, a hypothermia thermometer covers most needs, and a normal thermometer makes sense elsewhere. There are many good disposable thermometers on the market, such as Tempa-Dot, that are also unbreakable. A digital indoor/outdoor thermometer with a probe is a good resource to tell temp. Variations of a patient who is either immobilized during or waiting for evac, although not as accurate as a medical version.
- ✓ **Trauma shears:** is a good resource for removing clothing, cutting improvised splints to size, and just about anything else.
- ✓ **BP Cuff and Stethoscope:** although they are added weight and bulk, they give the first responder vital signs that may help tell a big deal from not. Generally, expedition or large groups have these as part of their major med kits. Some first responders carry only a stethoscope to help them hear lung, heart, and digestive sounds.
- ✓ **Heat/Cold Packs:** again usually carried in major med kits, these will help in short term context. Water bottles with warm water, cooled wet towels, filled zip locks, can be improvised heat/cold packs.
- ✓ **Survival Gear:** like an ensolite pad, they are not generally thought of as part of the first aid kit, but are very useful in handling an emergency situation.



- ✓ **Mirror/signal device:** a compass with a mirror could save you a scary and painful trip out of the woods because of a spruce speck in the eye, or help you locate an adventuresome tick or leech. It can also be used to signal aircraft or other groups, too.
- ✓ **Whistle:** long after a human voice gives out from yelling, a whistle can still be blown. Some groups even have pre-planned signals, such as river guides.
- ✓ **Flashlight/headlamp:** the majority of overdue hikers are caused from not having a light, or spare batteries and bulbs. Select a light appropriate to your activity, and that either has a foolproof switch that won't turn on in the pack, or that the batteries can be turned around in.
- ✓ **Lighter/ waterproof matches:** if you are traveling in wet, cold environments it is also good to carry a fire catalyst, such as fire ribbon, or fire gel.
- ✓ **Flagging tape:** can be used to give wind direction to helicopters, making out a bushwhack trail, signaling. Blaze orange and neon blue seem to show up best on land.
- ✓ **Parachute cord:** strong and light, 100' of p-cord could secure an improvised shelter, build a litter, and even mend a broken paddle. 10 to 15' of mechanic's wire make a good addition for stronger repairs.
- ✓ **Survival blanket :** there are 2 good alternatives here that both accomplish the same job of vapor barrier, heat reflector, emergency shelter. The fiberglass reinforced Sportman's Space Blanket holds up to high winds and multiple uses. It makes an excellent shelter, and when put behind you is an excellent heat reflector from a fire. The original Space Blanket is a great lightweight alternative that is compact and light, but impossible to ever repack to original size. This blanket is reported to be a good emergency replacement if sunglasses are lost, as you can see through the blanket. The actual UV protection is the only question. The silver reflective surface also makes a space blanket a great signaling device.
- ✓ **Medications:** the legalities of using medications should not be taken lightly. Adequate training, written policies and procedures and medical control should all be considered. The big problem is that it is much easier to put the medicine in, then it is to take it out.
- ✓ **Topical antibiotic cream** - such as Neosporin, has been proven to promote healing in shallow wounds and help maintain a good barrier.



SEAFARERS TRAINING CENTER

M-BFA(I)-03

ELEMENTARY FIRST AID

REV. 5 - 2015

- ✓ **Analgesic, Antipyretic and Anti-inflammatory:** such as Tylenol, Ibuprofen, and aspirin. It is personal preference to what has worked best for you.
- ✓ **Antihistamine:** such as Benadryl and Sudafed
- ✓ **Antacid:** Mylanta, Gelusil, Pepto Bismol, Malos
- ✓ **Antidiarrheal:** Pepto, Keopectate, Immodium, Lomotil
- ✓ **Anticonspitation:** Metmucil, glycerine suppositories
- ✓ **Antifungal/yeast:** Tinactin, Mystatin
- ✓ **Dental Problems:** pain relief from clove oil, Orabase. Temporary dental filing material such as dental wax or Cavit
- ✓ **Special Needs and Medications:** such as prescription antibiotics, asthma inhalers, altitude meds, epineherine, etc.
- ✓ **Glucose** - liquid glucose in a single use tube. Oral Electrolyte Replacement Solution - such as Gookinaid, Gatorade, etc.
- ✓ **Tincture of Benzoin** - helps keep bandages attached