

# *An Emergency* **FIRST AID** *Guide*



**Aetna**  
LIFE & CASUALTY

(C-1912-C)

CAT, 341916

CTD009841

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**Printed in U.S.A. — September, 1974**

No. 1-48

CTD009842

# **An Emergency First Aid Guide**

Published by  
ENGINEERING AND SAFETY SERVICE  
American Insurance Association  
85 John Street, New York, N. Y. 10038

CTD009843

*A Word to the Wise* — for it is the wise person who will read this booklet. The difference between a major and a minor injury is often the result of knowing what to do in an emergency. Herein described are first aid procedures to be followed *while waiting for the doctor* to attend an accident victim. If they are handy for reference when needed, or even better, if they are learned and remembered, their prompt and correct application may be vital to the victim. Injuries and ailments are arranged alphabetically so that they may be found quickly. This booklet does not cover all injury possibilities but does include essentials. Throughout the booklet, an effort has been made to be practical and present the procedures so that they can be quickly grasped when needed. It is hoped this has been achieved, but more important, it is hoped that you will never have occasion to apply these principles.

This publication has been reviewed for accuracy by the New York Section of the American Red Cross and the section on "Heart Attack" by the American Heart Association. For more detailed information on "First Aid" contact your American Red Cross.

*In General* — first aid can be summed up in the following steps:

1. Determine best way of rescue
2. Ensure an open airway
3. Control Severe Bleeding
4. Give first aid for poisoning
5. Call doctor where indicated

*Abrasions (See Wounds)*

*Apoplexy (See Unconsciousness)*

*Artificial Respiration  
(See Respiratory Failure)*

*Asphyxia (See Respiratory Failure)*

### ***Bites***

**Animal Bites** — The principal danger resulting from many animal bites is the possibility that the fatal disease rabies (hydrophobia) will develop.

*Do:* Wash the wound with *running* water using mild soap; go to a physician immediately so that he can start the preventive treatment; catch, if possible, the responsible animal so that it may be examined over a period of time for evidence of rabies. If it

is necessary to kill it to protect other people, protect the head from damage and have the head examined for rabies immediately.

**Insect Bites** — These often cause swelling and irritation, with infection from scratching frequently the result.

*Do:* If the “stinger” is still in the skin, remove it with a pair of tweezers. Make a paste of baking soda and water or cold cream or a compress moistened with household ammonia water. These applications will provide relief. Cold applications help to alleviate pain. Calamine lotion relieves the itching from mosquito and chigger bites.

**Snake Bites** — *Symptoms:* When a poisonous snake bites, there is usually immediate pain accompanied by a rapid and severe swelling with the skin becoming a dark purple around the bite area. Two small holes, caused by the fangs, may be noticeable in the skin. As the poison reacts there is noticed a feeling of weakness, shortness of breath, faintness, rapid and weak pulse, nausea and vomiting, and often dim vision and unconsciousness.

*A harmless snake has no fangs, so its bite leaves only a few surface scratches, generally in the shape of a double horseshoe. There*

*are no fang marks* and no general reaction, swelling or discoloration. These bites do not require the more rigorous measures specified for poisonous snake bites but should receive the first aid recommended for minor scratches. (Kill and keep the snake, if possible, so it can be identified and the proper medicine given by the doctor.)

*Do:* Act promptly, because it is impossible to remove the poison once it is absorbed. Keep the victim quiet—have him lie down. Tie a band around the limb just above the bite to stop the circulation of the poison, (handkerchief, belt, etc., may be used). It should be tight enough to prevent return flow of blood (make the veins stand out) but not so tight that it constricts the arteries. This is, therefore, not the full constricting effect of a tourniquet and it is not necessary or desirable to twist the band. A cut should be made along the long axis of the limb and only deep enough to penetrate the skin. If swelling makes the band too tight, loosen it. As swelling progresses to the band, place another band a few inches above the first band but leave the first band in place. Promptly after applying the band, apply cold, wet towel. A doctor should be called as promptly as possible, but if one is unavailable it may be necessary to go beyond the

first aid care. Release the band for a few seconds every 30 minutes. The cuts are kept covered with cold compresses. Keep the injured area lower.

Give sips of water to drink and first aid for shock, if necessary. Keep the victim warm, quiet and his head lowered. Excitement increases blood circulation and spreads the poison. Treatment described is to be continued until a physician is available. If the bite is on a part of the body where a constricting band application is impossible, merely use cold compresses. The limb should be kept in position so that the infected part is lower than the heart. Never give whisky or other alcoholic drinks.

**Spider Bites** — The most-common poisonous spider in this country is the *black widow*, although tarantulas may be found in some areas or in a bunch of bananas.

*Symptoms:* Often there is little to be seen of the bite. Sometimes there is a local slight swelling and redness as well as two tiny red spots. There is almost immediate pain, usually beginning in the bite region and in severe cases spreading to the back, chest, shoulders, abdomen and limbs. The stomach is hard. There is some fever and much perspiration. Death is infrequent for adults.

However, results to small children, especially in the crawling stage, can be serious.

*Do:* Keep the victim quiet. Use ice locally, immediately. Keep the victim warm if he has chills. Call a doctor promptly. Antitoxin is available in some areas. Black widow spider or tarantula bites should be treated the same as snake bites when the victim is a child.

*Other spider bites* can be treated as any insect bite, with cold applications and the application of calamine lotion.

### ***Bleeding***

**External Bleeding** — May be due to cut arteries or veins.

*Bleeding from veins* is recognized by a steady flow and this or any other bleeding that is not too severe can be stopped by applying pressure.

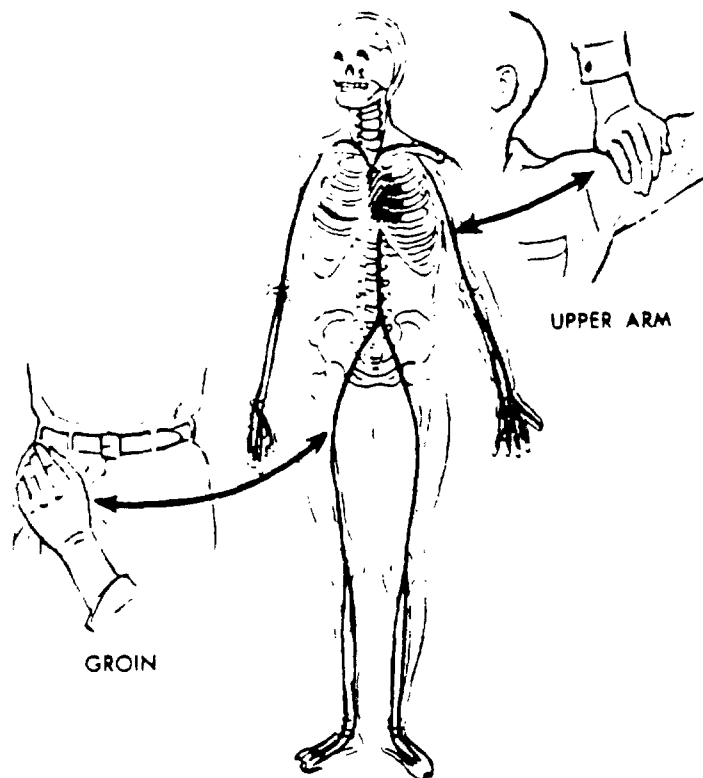
*Do:* Put pressure over the wound. Place a thick compress (pad) on the cut and hold or bandage snugly in place. If bleeding oozes through the compress, add another compress to the injury directly over the other, and bandage in place. If bleeding is from a limb, elevate it above the heart level.

*Arterial bleeding* or any bleeding that does not stop within five minutes after a pressure bandage is applied is severe.

*Do:* Put pressure over the wound. Place a thick compress (pad) on the cut and hold or bandage snugly in place. If bleeding oozes through the compress add another compress to the injury directly over the other, and bandage in place. If bleeding is from a limb, elevate it above the heart level.

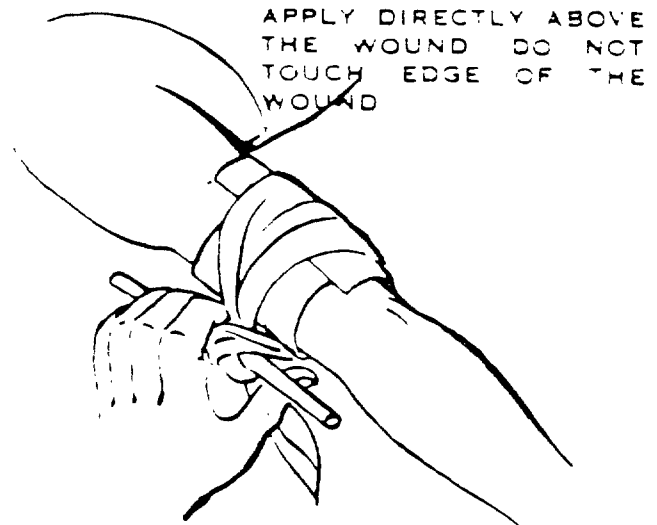
*For quick action* — Apply pressure over the appropriate pressure point (see page 9) to lessen the bleeding. Meanwhile, you or an assistant can apply direct pressure on the wound as described above.

*Use a tourniquet* when bleeding from a limb cannot be controlled otherwise. However, use it only as a last resort. When you do, tell the doctor you have as soon as he arrives. Many serious results, even amputations, have followed the improper use of a tourniquet. Never use cord, rope or wire — a triangular bandage folded flat, a necktie, stocking or any fairly wide 2" flat band long enough to go twice around the limb will do. Wrap the tourniquet around the limb over a firm pad, just above the wound (several thicknesses of gauze or a folded handkerchief placed on the inside of the limb (see page 10)). Tie the tourniquet with a half knot, then place a small stick over the half knot and secure it with a square knot. Twist the stick to tighten



**POINTS FOR CONTROL OF SEVERE BLEEDING  
BY APPLYING PRESSURE TO THE  
SUPPLYING VESSEL**

the tourniquet — not too hard — just enough to stop the bleeding. *Never cover the tourniquet* — particularly if tightened — with blankets, clothing, etc. Once the tourniquet has been applied, it should be released only by a physician or by medical personnel prepared to control hemorrhage and replace blood volume adequately. **REMEMBER:**



CORRECT APPLICATION OF TOURNIQUET TO ARM

THE TOURNIQUET SHOULD BE USED ONLY FOR SEVERE, LIFE THREATENING HEMORRHAGE THAT CANNOT BE CONTROLLED BY OTHER MEANS. It is only rarely required.

**Internal Bleeding** — Results from wounds or disease internally. Most often the lungs, stomach, bowels or bleeding from the chest are the source.

*Symptoms:* The hemorrhage generally is preceded by anxiety, thirst, restlessness, weakness, pallor and a faint, rapid pulse. Blood from the stomach is usually vomited (has the appearance of coffee grounds); blood from

the bowel is found in the stool (has a tarry black appearance) ; blood from the lungs is coughed up and is easily recognized, being bright and frothing.

*Do:* Secure a physician as soon as possible. Meanwhile treat for shock. Place patient on back with knees elevated with a pillow or pillows to relieve pressure on abdomen (see page 34). Never give stimulants. *Do not give a person with an abdominal injury anything to eat or drink.*

### ***Blisters***

Remove the cause of irritation. Do not open a blister.

*Do:* If blister has opened, wash the area thoroughly with soap and water and apply a sterile bandage.

### ***Boils***

Never squeeze a boil, it may spread the infection. If a boil breaks, do not let the discharge spread to surrounding skin. Wipe it off with a sterile pad. Cover the boil with sterile gauze, after it has broken.

*Do:* Hasten the formation of pus with hot salt compresses prepared as directed under "Infections" (page 26). Consult physician as soon as pus forms.

***Bones, Broken (See Fractures)***

***Brain (See Concussion)***

***Breathing, Stopped (See Respiratory Failure)***

***Burns***

Are classified according to degree, (the depth to which body tissues are injured).

First Degree — skin reddened.

Second Degree — skin blistered.

Third Degree — deeper tissue destruction, such as charring.

First aid treatment of burns is to relieve pain, prevent infection if the skin is broken, prevent loss of body fluids if extensive skin area is burned.

**First Degree Burns**

*Do:* Apply cold water (not ice).

**Second Degree Heat Burns**

*Do:* Immerse in cold water for 1 to 2 hours, then apply a sterile dry dressing.

### Third Degree Burns

*Do:* Call a physician immediately. Keep victim quiet and comfortably warm until doctor arrives. *Shock is always present.* See "Shock" page 34 for first aid procedure. Cover burns with thick dry sterile dressing. Do not use water and keep the limbs above the heart level. If on the face, have the person sit up.

### Chemical Burns

*Do:* Wash with copious amounts of water *i.e.* shower or faucet for five minutes. If directions for burns caused by specific chemicals are available follow those directions. After the flushing apply a dressing and get medical aid.

### Chemical Burns of the Eye

*Do:* Wash with large amounts of water or milk. A drinking fountain may be used or cupfuls may be poured gently into the eye. Do not allow the water to run from one eye to the other, cover the eyes with a protective dressing.

Sunburn — The burn is usually first or second degree.

*Do:* The best treatment of sunburn is to

prevent it. Cover the body surfaces when exposure is eminent. If burnt treat as a burn. If the burn covers the body extensively or if the victim develops a fever, a physician should be called immediately.

***Choking (Object Stuck in Throat  
— See Foreign Bodies)***

***Cold***

*Symptoms:* A person exposed to severe cold becomes numb, drowsy. Movement is difficult and he may become unconscious.

*Do:* Provide extra clothing and blankets. Bring the victim indoors as soon as possible. Rewarm the area by immersing it in water that is warm but not hot between 102 and 105 degrees. Observe the individual for the stoppage of breathing. If breathing stops start artificial respiration. (see "Respiratory Failure," page 30). As victim reacts, give him warm tea, coffee or cocoa. If victim is only chilled and he is conscious, keep him warm and give him warm drinks. Do not bend a frost bitten part of the body. Never rub with snow or ice. Call physician for any person exposed for a long time to cold along with dampness.

***Colds***

*Do:* Eat lightly of easily digested foods;

drink plenty of fluids, a glassful at least every hour; avoid being chilled; rest in bed; consult a doctor.

### *Concussion*

*Symptoms:* Vary greatly; victims may appear unaffected at first and later become unconscious or develop serious symptoms (eye pupils may be unequal in size or there may be bleeding from ears or nose) caused by skull fracture.

*Do:* If pulse is rapid and weak or if victim is unconscious more than a few minutes following a head injury, consult a doctor immediately. Keep patient lying down, with head and shoulders slightly raised. Keep a record of time that the patient is unconscious. Move him only in horizontal position — carefully. Keep victim warm, but if unconscious, do not apply heated objects. If there is strangling from blood or mucous, lower the head and turn slightly to one side to allow mucous to drain from air passages. If there is bleeding from head wounds, follow procedure for "Wounds", see page 38.

Do not give stimulants.

### *Convulsions*

*Symptoms:* Face is pale, later it becomes

blue, particularly around lips. Convulsive twitching may begin in the eye muscles, face or extremities and later spread to all of the body. The body may become stiff and bowed backward. All manner of spasms and every degree of severity may be experienced. The convulsions may gradually lessen after varying periods of time, but may recur after a short time.

*Do:* Loosen constricting clothing. Prevent victim from hurting themselves and give artificial respiration if they stop breathing. Do NOT place a blunt object between the victims teeth. Do NOT restrain Him. Do NOT pour any liquid into his mouth nor place a child in a tub of water. If convulsion does not stop spontaneously, keep victim warm, — moving him as little as possible. Apply a cold cloth to the head. At end of convulsion, breathing may stop temporarily and victim becomes blue — this is normal — but if breathing does not begin within a minute, apply artificial respiration (see "Respiratory Failure", page 30). Unless victim is known to be epileptic, call doctor at once. A convulsion may be the beginning of a serious illness.

### *Dislocations*

Bones out of place at the joint.

*Symptoms:* A dislocated joint looks out of shape when compared with a similar, uninjured joint, and its motion is restricted. There is usually a great deal of pain and marked swelling is frequent.

*Do:* Send for a doctor. Splint the injured member in a comfortable position. Treat for shock if necessary (see page 33). Dislocations are often as serious as fractures. Do not attempt to reduce a dislocation. If it is necessary to transport the injured person to a doctor, apply a splint before moving him. Treat the same as fractures.

### *Drowning (See Respiratory Failure)*

### *Drugs*

Due to the complexity of the nature of the commonly used drugs (alcohol, marihuana, depressants-sedatives, hypnotics, hallucinogens, inhalants, narcotics, stimulants, and tranquilizers) contact should be made with the federal, state, local or voluntary organizations, which are involved in drug treatment and control for specific information covering symptoms and treatment.

### *Ear. Foreign Object In (See Foreign Bodies)*

### ***Earache***

*Do:* While awaiting doctor, application of either an ice bag or hot-water bottle will tend to relieve pain.

### ***Electric Shock (See Respiratory Failure)***

No attempt should be made to aid a victim until he is free of live electrical equipment or it has definitely been determined that the power has been shut off.

### ***Eye, Chemicals In (See Burns)***

### ***Eye, Foreign Object In (See Foreign Bodies)***

### ***Eye Wounds (See Wounds)***

### ***Fainting***

Generally due to emotional shock; may follow slight injuries, the sight of blood, startling news, fatigue, exposure to overheated rooms, extreme hunger.

*Symptoms:* Victim becomes dizzy, weak and turns pale and slumps or falls unconscious. There may be some twitching or thrashing.

*Do:* A person about to faint can frequently be revived by bending his head down between his knees. If there is no improvement, place him on his back, elevating the hips with a folded blanket or coat or raising his feet and legs. Loosen the clothing around his waist and neck, and see that he gets an ample amount of fresh cool air. Bathe his face gently with cool water. Generally the victim regains consciousness in a short time. When he does, keep him lying down. If the fainting is prolonged, keep the victim warm and call a doctor.

### *Fits (See Convulsions)*

### *Foreign Bodies*

**The Ear:** Objects, even wax, in the ear should be removed by a doctor. An insect which enters the ear can be killed by putting a drop or two of warm castor oil into the ear. Never insert sharp instruments such as matches, toothpicks, hair pins etc., into the ear.

**The Eye:** Foreign bodies imbedded in the eyeball should be removed by a physician. *First aid should only be used to remove "floating" particles on the inside of the eyelids or in the eye.* When first aid is indicated:

*Do:* Instruct victim not to rub the eye. Pull the lower lid down gently and look for the particle. If it is seen, remove it with the tip of a clean handkerchief or a twist of cotton moistened at the tip. Never use dry cotton. For a speck on the upper lid — pull the eyelid forward, gently, then downward over the lower lid. This may dislodge the particle. If this is not successful, apply a dry protective dressing and take to doctor immediately. If the object is not removed, consult a physician.

#### **The Nose:**

*Do:* Place a few drops of olive oil or mineral oil in the nose to relieve irritation. The nose may be blown gently — but not with one nostril closed. If not dislodged, consult a physician.

#### **The Throat:**

*Do:* Quickly slap the victim on the back, between the shoulder blades, while he assists by bending forward or by lying on his abdomen across a bed with head and shoulders hanging over the side. If the victim is a child, he may be held upside down by the heels while his back is slapped. Obstructions may sometimes be removed with fingers. If, breathing stops, or if breathing is dif-

ficult, give artificial respiration (see "Respiratory Failure"). If the object cannot be dislodged, rush the victim to a hospital while another person telephones ahead to give notice of the emergency. It may be necessary to give artificial respiration while traveling to the hospital.

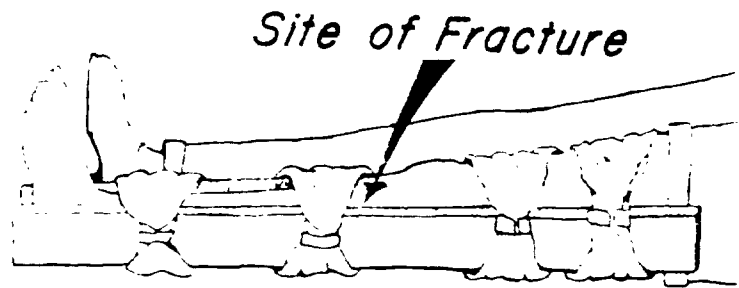
### ***Fractures***

When there is no break in the skin, a broken bone is said to be a closed (simple) fracture. When there is a wound at the fracture site the injury is an open (compound) fracture. Careless handling of a closed fracture may cause the fracture to become open. Open fractures are the more serious because of the danger of infection.

### **Arm and Leg Fractures**

*Symptoms:* There is pain and there may be deformity of the limb at the point of the break. Swelling usually appears quickly and is marked. However, decision as to whether a fracture exists depends on a physician's examination.

*Do:* Always handle injury as though it were a fracture. Secure a doctor's services. Keep the victim lying down and warm. If there is severe bleeding, stop it as described under



SPLINT FOR FRACTURED LIMB  
USE FOUR BANDAGES—TWO ABOVE  
AND TWO BELOW FRACTURE

“Bleeding”. If the victim must be moved, the limb should be splinted, to prevent further injury due to the movement of the broken bones (see figure). *Shock is common* in fractures and must be treated (see “Shock”).

#### Collar Bone Fracture

*Symptoms*: The shoulder on the injured side will hang lower when the victim sits or stands.

*Do*: Make a triangular sling bandage using cloth 3 feet square and place the arm in the sling. Bind the arm to the chest. Do not tie the corner that goes across the chest too tightly. Take the person to a physician.

#### Spinal Fracture

Wrong handling may damage the spinal cord and cause permanent paralysis.

*Symptoms:* The only symptom may be pain in the back or neck. However, ask the victim to move his fingers. If he cannot, his neck may be broken. If he cannot move his feet and toes, his back may be broken.

*Do:* Get a doctor promptly. *Avoid moving the victim unless absolutely necessary.* Do not let him move, even to sip water. Keep him warm.

If he must be moved, carry him on a rigid support (such as a door, shutter or wide board). Carry him face upward. Placing him on the litter requires great care. Three but preferably more persons will be needed. His body must be moved as a unit, with no tilting of the head (for a neck fracture) or movement of the spine (for a back fracture). He should be carried without jolting or jarring and should be kept warm. If the neck is injured, place sand bag or other items about head and neck so as to prevent any motion of the head or neck.

*Skull Fracture (See Concussion)*

*Freezing (See Cold)*

*Frostbite (See Cold)*

## *Heart Attack*

Victims may seem to be fainting. The face is pale, pulse weak, and victim may or may not be conscious. There may be pain in the chest region. If there is no pain, the case may be distinguished from ordinary fainting by the failure to recover rapidly.

In the case of a heart attack, the pain often is intense in the center of the chest, behind the breastbone, and may spread to the shoulder, arm, neck or jaw. Pain or discomfort is often accompanied by sweating. Nausea, vomiting and shortness of breath may also occur.

If the victim is unconscious, lying down is probably the best position. However, if there are signs of difficulty in breathing, the victim may be helped by raising his head to open the airway. If vomiting occurs, turn the head to one side to expel vomitus and avoid ingestion.

If there is an absence of breathing, mouth-to-mouth resuscitation may be given. If the victim is pulseless and the rescuer is trained in cardiopulmonary resuscitation, cardiac compression may be administered.

If the victim is conscious, put him in the position of greatest comfort to him.

Call a doctor or get to a hospital emergency room as quickly as possible. Keep the victim warm and reassure him. Fear is often intense and may aggravate the condition.

If you have a cardiac at home, contact your local Heart Association for more information.

### *Heat Exhaustion*

*Symptoms:* Usually begin with muscular weakness, dizziness, nausea and a staggering gait. Vomiting is frequent. The bowels may move involuntarily. The victim is very pale, his skin is clammy and he may perspire profusely. The pulse is weak and fast, his breathing is shallow. He may faint unless he lies down. This may pass but sometimes it remains and death may follow.

*Do:* Call a physician. Remove the victim to circulating air and treat him for shock. (Make him lie down, raise feet 8 to 12 inches, keep warm but loosen his clothes.) It may also be helpful to give him sips of salt water (1 teaspoonful of salt to 1 glass of water), if he is conscious.

### *Heat Stroke (Sun Stroke)*

Heat stroke is caused by excessive heat indoors, or by direct exposure to the sun.

*Symptoms:* First, there often is pain in the head, dizziness, nausea, oppression and a dryness of the skin and mouth. The body temperature is high, often between 107°—110°; pulse is rapid. The symptoms develop with increasing exposure. Unconsciousness follows rapidly and death may result. Attack usually comes on suddenly.

*Do:* Move the victim to a shady, cool place. Remove his clothing. Lay him on his back with head and shoulders somewhat elevated. As quickly as possible, apply cold wet cloths, ice bags, etc., to his head. Using towel repeatedly sponge off his bare skin with cool water or rubbing alcohol or place him in a tub of cool water. The main objective is to cool him without chilling him. Give no stimulants. Call a physician.

### ***Hemorrhage (See Bleeding)***

### ***Infection***

*Symptoms:* Pain often throbbing, several hours to days after the injury, swelling, increasing redness, heat and tenderness around the wound, fever as the infection becomes more severe.

*Do:* If doctor cannot come immediately,

immoblize entire infected area, keep victim lying down. Elevate the body parts if possible, elevation is important for infected wounds of head, hands, legs, and feet. Apply heat to the area by using hot water bottle or put warm moist towel or cloth over the wound dressing. Change these packs often enough to keep them warm. Cover them with a dry towel wrapped in plastic or aluminum foil or wax paper to hold in warmth and to protect bedding. Continue to apply warm packs for thirty minutes, then remove them, cover with a sterile dressing for thirty minutes and then apply warm packs again. It is important to get medical care.

### ***Lockjaw (See Tetanus)***

### ***Poisoning***

When poisons of any kind are swallowed, it is important to give first aid promptly and call for the doctor just as quickly. Most labels have the antidotes printed thereon. Contact the nearest Poison Control Center as listed in your phone book under poisons. It is not nessary to remember a lengthy list of procedures for most poisoning cases. There are, however, *two exceptions*:

**Corossive Poisons:** Do Not induce vomit-

ing. Give milk or water—1 glass for a child, 2 glasses for an adult; then egg white in water or cooking oil. In case of strong alkalies. water, vinegar, or lemon juice may be given, after the initial fluids have been given.

**Petroleum Products:** Do Not induce vomiting. Give victim 4 oz. of mineral oil—if available, otherwise give milk and water—1 glass for a child and 2 glasses for an adult.

**Other Poisons Swallowed:** Dilute poison by having victim take large amount of luke-warm water (2—4 glassfuls). Then induce vomiting by sticking finger down the throat. The proper antidote for the poison (often stated on label of the poison bottle) can be given if known at the dosage recommended. If syrup of ipecac is available, it should be given in the dosage recommended on the label. A heaping tablespoonful of Epson Salts in a glass of hot water can also be given after the stomach is emptied. Keep victim warm and if breathing stops, apply artificial respiration. (See "Respiratory Failure".) If you are unsuccessful making a person vomit within five minutes take him immediately to a doctor or hospital. Do not wait for an ambulance if other transportation will take less time.

**Food Poisoning:** Often mistakenly called "ptomaine poisoning".

*Symptoms:* Abdominal cramps, pain or uncomfortable feeling in the upper abdomen, nausea, vomiting and purging of the bowel. Diarrhea is the most common symptom.

*Do:* Call a doctor. Some symptoms of acute appendicitis are apt to be mistaken for food poisoning. A laxative, therefore, should not be given without a doctor's advice.

**Poison Gases:** If required to go into a room to rescue a victim, a protective mask should be worn. (The mask should be suitable for the particular gas involved or it should be either an all purpose or air supplied mask.) Be sure to tie a rope around the rescuer's waist and have someone on the outside hold the other end so the rescuer can be saved, if necessary. *Wet cloths tied over the nose and face are useless.*

Get victim to fresh air at once. If breathing has stopped, begin artificial respiration (see "Respiratory Failure"). Call a doctor and keep victim warm.

**Poison Plants:** Include the three plants of the same family: poison oak, poison ivy and poison sumac.

*Symptoms:* The skin is red and swollen, itching intensely one to nine days after exposure. Small blisters appear and may join to form large blisters. Infections may result from scratching.

*Do:* Wash with strong laundry soap and warm water, then with rubbing alcohol, if available. Apply calamine lotion. In severe cases, consult a physician. If pesticide is on plant, send for an ambulance immediately.

• *Punctures (See Wounds)*

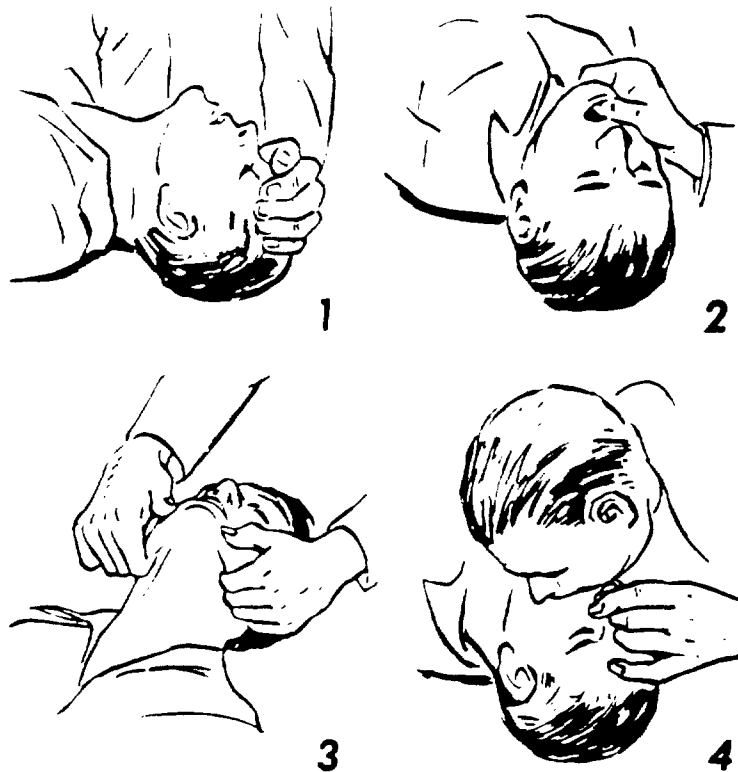
*Rabies (See Bites, Animal)*

*Radiation*

*Do:* If exposed to radiation, consult a physician immediately.

*Respiratory Failure*

Means victim is not breathing. However, even after breathing has stopped, the heart usually continues to beat for a short time. With quick action, therefore, a person's life may be saved. To restore natural breathing, *artificial* respiration must be used *immediately after rescue*. The newest procedure for artificial respiration is known as the Mouth-to-Mouth (or Mouth-to-Nose) Method



**MOUTH-TO-MOUTH METHOD  
OF ARTIFICIAL RESPIRATION**

and is recommended by the American Red Cross and other authoritative agencies.

**Mouth-to-Mouth (or Mouth-to-Nose) Method of Artificial Respiration:** Before administering the mouth - to - mouth or (mouth-to-nose) method of artificial respiration, the operator should wipe out quickly with his fingers, or with a cloth wrapped

around his fingers, any foreign matter visible in the mouth of the victim.

The victim's head should be tilted back so that the chin is pointing upward (Figure 1). The operator then pulls or pushes the jaw into a jutting-out position (Figure 2 and Figure 3). These movements will help to relieve obstruction of the airway by moving the base of the tongue away from the back of the throat. The operator opens his mouth wide and places it tightly over the victim's mouth, while at the same time pinching the victim's nostrils shut or closing the nostrils with his cheek (Figure 4). Or, the operator may close the victim's mouth and place his own mouth over the victim's nose. The operator then blows into the victim's mouth or nose. Even though the victim's teeth may be clenched, air may be blown through them. It should be possible, after the first blowing efforts, to determine whether or not an obstruction exists. Following the blowing effort, the operator should remove his mouth, turn his head to the side, and listen for the return rush of air that indicates air exchange. The blowing effort should then be repeated, blowing vigorously at the rate of about 12 breaths per minute if the victim is an adult. If the victim is a child, relatively shallow breaths appropriate for the child's size should be

taken, at the rate of about 20 per minute. If the operator determines that he is not getting air exchange, he should recheck the head and jaw position. If he still does not get air exchange, he should quickly turn the victim on his side and administer several sharp blows between the shoulder blades to dislodge foreign matter. He should also sweep his fingers through the victim's mouth again to remove foreign matter.

Persons who do not wish to come in contact with the victim may hold a cloth over the person's mouth or nose and breathe through it as the cloth does not greatly affect the exchange of air.

**Manual Methods of Artificial Respiration:** There are several manual methods of artificial respiration that can be used by persons who cannot, or will not, use mouth-to-mouth or mouth-to-nose techniques. The alternate method most recommended is the Sylvester (chest—pressure-armlift) Method. Each of these methods has its advantages and disadvantages, and the nature of injury in any given case may prevent the use of one method while favoring another.

It is highly desirable to practice artificial respiration under an instructor before the necessity for use arises.

Cardiopulmonary Resuscitation (CPR) is suggested (See Heart Attack section, p. 24).

*Scalding (See Burns)*

### *Shock*

Generally occurs with burns of any extent, wounds that bleed, broken bones and any other injuries of magnitude. The severity of shock may vary from a moments' weakness to death.

It is necessary to remember that shock will follow any injury, in some degree, and it is therefore important to know the symptoms and methods of preventive treatment.

The most common symptoms of shock are:

1. Skin cold and clammy
2. Face pale
3. Pulse weak and rapid
4. Cold perspiration profuse on forehead and hands
5. Breathing is shallow and sighing is frequent

The same methods that overcome shock will prevent it. These are:

1. Give immediate first aid

2. Keep victim lying down
3. Cover him only enough to keep him from losing body heat
4. Get medical help as soon as possible

*Treat every severely wounded person for shock even before it has a chance to develop.*

*Stop Breathing* — Loss of blood alone may produce shock. See "Bleeding", page 7. However, it is well to emphasize here that a tourniquet should be used only when all other methods of stopping bleeding have failed. Shock may increase in severity following the removal of a tourniquet. Lay victim on his back, with his head lower than his feet, to increase the flow of blood to the brain.

*Keep Victim Warm*—Prevent chilling. When in shock, the victim's extremities are often cold. Also, exposure to cold will increase the severity of shock. First wrap blanket or coats around the victim (underneath as well as on top, to protect him from the cold ground) moving him with great care. He should be comfortable, but not too hot. Persons may lie close to the victim to supply body heat. If a tourniquet is being used, the extremity below it should never be warmed by artificial means.

*Control Pain* — Pain increases the severity of shock and should be relieved as much as possible. The splinting or immobilization of injured extremities frequently will reduce pain, as will placing the victim in a comfortable position. In the case of burns, prompt correct treatment (see “Burns”, page 12) helps to relieve pain.

*Snake Bite* (See *Bites*)

*Splinters* (See *Wounds*)

*Sting* (See *Bites, Insects*)

*Sunburn* (See *Burns*)

*Sunstroke* (See *Heat Stroke*)

*Tetanus* (See *Wounds, Puncture*)

*Unconsciousness*

May be due to any one of many causes such as **Bleeding** (see page 7), **Heat Exhaustion** (see page 25), **Heart Attack** (see page 24), **Convulsions** (see page 15), **Skull Fracture** and

**Concussion** (see page 15), **Shock** (see page 34), **Sun Stroke** (see page 25), **Poison Swallowed or Inhaled** (see page 27), **Prolonged Exposure to Cold** (see page 14), **Fainting** (see page 18), and **Respiratory Failure** (see page 30), **Drugs** (see page 17).

The procedures recommended in each of the foregoing cases should be consulted.

*Do:* When an unconscious person cannot be aroused by gentle shaking or shouting — call a doctor. Examine the victim for bleeding, breath stoppage. Look for a head injury (inequality to size of pupils of the eye common in head injury and apoplexy), evidence of burns around the lips; smell the breath for characteristic odors (alcohol). Look carefully for electrical contact, escaping gas, evidence of a fall or attack, opened poison, narcotic or whiskey bottle, etc., while waiting for the doctor — *If victim is flushed* and has a strong pulse, keep him lying down, with head and shoulders elevated. Give no stimulants and apply cold to the head; loosen constricting clothing. If vomiting occurs, turn his head to avoid choking. *If victim is pale* and pulse is weak, keep him warm and lying down, with head level low.

## *Varicose Veins*

Sometimes become so enlarged they rupture. If they do so, bleeding is profuse and first aid must be prompt.

*Do:* Elevate the limb, apply direct pressure and compress (see "Bleeding", page 7) followed by bandage. Call a doctor promptly.

## *Wounds*

The control of hemorrhage from wounds is discussed under "Bleeding", (see page 7). However, some kinds of wounds demand special attention.

*Puncture wounds* are a particular hazard because they do not bleed easily (to flush out the wound with blood) and are difficult to cleanse. Further, the puncturing instrument will drive down deep into the tissue, whatever contamination it has on its tip. In addition, air cannot readily reach the bottom of the puncture and lockjaw (tetanus), therefore, may follow.

*Do:* At the time the wound occurs, try to encourage bleeding by gentle squeezing of the surrounding tissues. Secure the services of a doctor. He will decide on whether tetanus antitoxin should be given.

*Powder burns* are in effect small puncture

wounds due to the driving into the skin of small powder particles from the exploding powder (fire cracker, blank or cap pistol, etc.).

*Do:* It is advisable to consult a physician, especially if small puncture wounds are evident, so that he can determine whether tetanus preventive is required.

*Splinters*, if near the surface, may be picked out.

*Do:* Cleanse the skin with soap and water. Sterilize, with a flame—a knife point, needle or tweezers. After the splinter is removed, gently squeeze the tissue on either side of the wound to encourage bleeding. Apply a sterile dressing. If the splinter is buried deeply or if the wound is of considerable size, consult a physician.

*Avulsed wounds* are in effect tissue, limbs, etc. which are forcibly torn or separated from the body.

*Do:* Send the avulsed body along with the victim to the hospital. An avulsed body may be successfully reattached to the victim under most circumstances.

## FIRST AID MATERIALS

IN GENERAL the first aid supplies will be purchased according to the emergencies

expected. Thus, in areas where poisonous snakes are known, it will be necessary to include appropriate supplies of clean bandages to use as cold compresses; in industrial foundries, a more than usual supply of clean dry bandages may be needed. A satisfactory kit may be made from the following supplies:

Triangular bandages, folded from 1 sq. yd. piece

Sterile gauze in sealed packages

Sterile petrolatum gauze dressings in sealed packages

Sterile absorbent cotton in sealed packages

Roll of 1 inch wide adhesive tape

One inch compresses on adhesive in individual packages

Sterile gauze squares (3" x 3") in individual packages

Splinter tweezers

Sunburn ointment

Clinical thermometer

Petrolatum, one tube

Sterile castor or mineral oil for use in the eyes or ears

Antiseptic

Assorted splints of thin boards

Scissors

Aromatic spirits of ammonia

Applicator sticks with cotton tips

The kit should be kept in a dust and weather proof container.

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