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EC1015 Safety in the Home

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Safety in the Home

SAFETY IS NOT A LUXURY

Economizing on Safety is not Economy
Home Accidents Cause the Death of 28,000
People a Year. How Safe is Your Home?

Accidents do not Happen. They are
Committed.

Good Housekeeping, with reference to Safety,
is a Place for Everything and Everything
in its Place
Acknowledgment is given to Miss Lulu Abbott, teacher of Adult Homemaking Classes, in First Aid and Home Nursing, Lincoln, Nebraska, for assistance in preparing this circular. The explanation of First Aid and Treatments are taken from The American Red Cross Text Book on First Aid.
Safety in the Home

BY GENEVIEVE WOODMAN

The National Safety Council reports that the annual automobile slaughter kills only five per cent more people than home accidents, of which we hear little or nothing. In 1932, 15,000 people were accidentally killed in the entire industrial field. There were 28,000 killed at home.

During the same year 4,230,000 people paid out $630,000,000 for domestic injuries which did not result in death. The above figure covers lost wages, medical care, and related expenses—a very conservative estimate. It is an estimate of mishaps which require the attention of a physician or incapacitate the unfortunate for at least one-half day. Nothing has been said of the suffering, inconvenience, and worry to the members of the household.

It is the purpose of this circular, first, to point out some of the ways in which accidents can be prevented and, second, to give a few of the temporary treatments that may be given in case of some accidents and before the doctor can be secured.

Most injuries at home result from falls, burns, cuts, scratches, suffocation, fires, and poisons. Observing precautions will help to prevent these various types of accidents in the home.

One-third of all home accidents are caused by falls. Most falls can be prevented. Falls caused the death of 21,000 people last year. One-fourth of them resulted from falls on stairs. Stairs may be a death trap. It is estimated that 700,000 people who fall down stairs each year pay an average of $132.00 for the privilege. A lot of money for such a short trip!

PREVENTION OF FALLS

What are the causes of so many such falls? What can we do about it? We have classified causes for falls roughly as stairs, ladders, slippery surfaces, and misplaced objects. In prevention of falls we might observe the following:

1. Wooden gates at the top and bottom of stairs will keep the small child from a tumble.
2. Let no object be placed or carelessly left on the stairs.
3. Keep stairs well lighted, if possible a light at the top and bottom. Have a light switch at a convenient height for a little child to reach without standing on tiptoe and losing balance.
4. A handy sturdy rail along stairs will help to prevent falls. If one has a chance to build stairs, plan them neither too narrow, steep, nor winding.
5. Keep basement doors locked, Light gray paint is recommended for basement stairs. A sill at the bottom of the door prevents a kiddie car and child from a headlong fall.
6. Loose and worn carpets on stairs cause falls. A small rug at the bottom of stairs is a hazard.
7. Carrying a bunglesome load down stairs may cause a fall.
8. Running up or down stairs is a poor policy.
9. Every porch needs a railing to keep people from stepping off unexpectedly, and to keep roller skates and baby buggies from taking their precious load over the edge.
10. Slippery porches, icy steps and walks take their toll. Ashes or sand will help to make them safer.
11. Mop up spilled grease at once.
12. Falls are caused by slipping on polished or wet floors, by stumbling on curling pieces of linoleum, skidding on small rugs. All small rugs are lying in wait to throw you. Abrasive lining on rugs is a good investment.

13. It pays for each home to have a good stepladder. There is no safe substitute for a good ladder. Avoid using chairs, especially rockers, frail boxes, crates, and barrels in place of ladders. Destroy or properly repair all insecure ladders. A good ladder has rungs spaced ten to twelve inches apart. The uprights are at least fifteen inches apart. A stepladder should be provided with self-locking device to keep it from collapsing. Avoid cleats nailed to walls. A safe position for a ladder is about fifteen degrees from vertical and continuing upward about three feet beyond platform or landing. The lower end should be placed evenly on something firm. A good handhold and foothold is necessary. Keep both hands free.

14. The Agricultural Extension Service, Lincoln, Nebr., can supply you with a blueprint for a kitchen stool ladder.

15. Accidents occurring from persons slipping in bath tubs number 120,000 per year. Use rubber mats in bath tubs and place handholds on wall over tub.

16. Wet soap carelessly left in bathtub or on bathroom floor is the cause of many falls.

17. Objects left lying on the floor, porch, or sidewalk are dangerous to children and adults. Do not leave a chair in the normal paths of travel in a room.

18. Open windows where children play need to have securely fastened screens.

ACCIDENTS FROM FIRE

Fires take about 10,000 lives each year. First, there are the children and aged people who are trapped in a burning building; secondly, folks killed by the ignition of inflammable liquids and vapors, and explosions in mines. The yearly property loss is about $500,000,000. Matches and smoking are listed as the cause of the greatest property loss, or about $28,000,000. Defective chimney flues are in second place; stoves, furnaces, and boilers, third place. Defective wiring takes fourth place.

1. Every fire starts from a spark or a small beginning. The careless practice of dumping litter and rubbish in the basement, unused rooms, or around buildings, not only invites a fire but marks one as a careless housekeeper. It is an unsanitary habit; it is unsightly.

2. Make an inspection of the home with the purpose of discovering and eliminating all possible causes of fire. This is our best insurance against fire.

3. Keep home and yards clean. It reflects credit upon the owner, increases the value of property, and eliminates a serious fire hazard.

4. Have several hand fire extinguishers in convenient places and be sure you know how to use them.
SAFETY IN THE HOME

5. Keep matches away from little children. Use safety matches, keep them in tins. Strike matches away from you.
6. Cleaning with inflammable fluids such as naphtha or gasoline is dangerous even under the best of conditions and must never be done indoors or near a flame. The National Safety Council urges that all dry cleaning with naphtha, gasoline, benzine, commercial cleaners, or other highly inflammable liquids be stopped in the home. The best substitute for these combustible cleaners is carbon tetrachloride, which, tho more expensive, is safer.
7. Do not hang clothes near stove or stovepipe to dry. This caution applies especially to clothing freshly cleaned with inflammable cleaning fluids.
8. Keep open flame lights away from curtains or draperies. Use un­lighted candles on Christmas trees.
9. Protect the floor underneath stove with a sheet of metal. Keep all pipes in good condition and all connections tight. An open grate or fireplace should be protected by a metal screen.
10. Care must be taken in disposing of partially smoked cigars and cigarettes. Smoking in bed causes many serious burns and fires.
11. Keep the attic tidy, free from rubbish, tissue paper, excelsior, etc.
12. Beware of ashes. Have a good fire-proof container in which to dump ashes.
13. Keep oil mops and oily cleaning cloths in tin containers.
15. Never pour kerosene (coal oil) into a coal or wood stove, even if the fire is believed to be out.
16. Never pour water on flaming grease; use salt, flour, soda, or cover with a metal lid.
17. Never fill the oil or gasoline stove when a burner is lighted.
18. Do not fill lamps when lighted.
19. Melt paraffins, lubricating oils, and such petroleum products over hot water.
20. Adequate flat-iron stands are a safe measure.

BURNS AND SCALDS

Burns and scalds cause the death of more children than any other kind of accident, and most of these could be prevented.
1. Place kettles of hot liquids back from the edge of stove, sink, or table. Always watch closely any liquid boiling on the stove.
2. It is unsafe to use a kettle, stew pan, or skillet with a handle that turns or is not secure. Keep all pot handles turned away from front and edge of stove.
3. If tubs or bottles of hot liquid must be placed on floor, keep small children at a distance. It is safest to keep pails, scrub buckets, and tubs covered.
4. Do not pass cup of hot liquid over someone sitting at the table.
5. Do not attach a percolator or electric iron cord where someone may trip over it, pulling over the apparatus.
6. Do not try to go down stairs with a baby in one arm and a pail of hot water in the other hand.

CUTS AND SCRATCHES

Cuts and scratches rank third in home accidents. Every scratch, no matter how small, is always large enough for thousands of germs to enter and these germs may cause infection resulting in blood poisoning.
1. The only safe thing to do is to care for each wound, no matter how small, as soon as it occurs. Most of the serious infections and cases of blood poisoning start from very small wounds.
2. Keep the yard as free as possible from tin cans, broken glass, and rusty nails. Always put broken glass in a box or strong paper bag—don’t throw away loose in a trash bucket.
3. Guns must always be regarded as loaded; be handled with extreme caution; and kept out of the reach of little children.
4. Can openers which cut a smooth edge are best.
5. Even a pairing knife has an element of danger. Keep knives in a knife rack, not in a jumble in a kitchen drawer. Wield a knife away from you.
6. Keep scissors in a sheath. Small children must not be allowed to play with razors, knives, and sharp instruments.

**ELECTRICAL EQUIPMENT**

1. Purchase all electrical equipment from a reliable dealer.
2. Portable electric heaters are a hazard in the bathroom unless placed away from the tub. Place electric switch where it cannot be turned by a person in the tub.
3. Electric irons should be disconnected whenever one is called from the task of ironing.
4. One must be careful of electrical switches, especially those around washing machines. Teach children proper respect for all mechanical things.
5. One family invested a penny by putting it behind a defective electric fuse to save an electrician’s repair bill. The penny cost them $1000 fire damages—rather a bad investment!
6. Do not handle electrical equipment with wet hands.
7. Have all electric light wires in the bathroom well protected and the switches where they cannot be reached from the bath tub.
8. The best place for an electric fan is on a shelf out of reach.

**POISON**

Children are particularly likely to take poison accidentally. Among children under fourteen years of age, poisoning ranks third as a cause of fatal accidents in the home.

1. To prevent such accidents, keep all bottles labeled and never take medicine from an unlabeled bottle.
2. Never take medicine in the dark when you cannot see the label. Read the label three times, once as you take bottle from cabinet, once before it is opened, and a third time before you give or apply medicine to the patient.
3. Keep all poison drugs away from all other medicine. Stick pins in the cork and keep locked up.
4. Keep all medicines and poisons out of the reach of small children.
5. Some prefer to keep medicine cupboard locked with the key handy.
6. Teach safety to children.
7. Automobile batteries, cleaning preparations for straw hats and clothes, caustic sticks, permanent wave solution, silver polishes, chemical solutions for cleaning clothes, iodine, carbolic acid, virulent disinfectants, insecticide, drain cleaner, lye, and numerous other household or farm preparations are all valuable for certain uses, but must be kept out of the reach of children and used with caution by all. Lye should be labeled as a poison.
GAS POISONING

1. Do not run an automobile engine in a closed garage. Do not sit in a closed parked car with the engine running. The hot exhaust gas tends to rise and may leak thru the floor.
2. Never burn a gas or oil stove in a closed room.
3. It is possible to get safety pilot lights for stoves. If the pilot light goes out, the gas is automatically shut off. Open all doors of the oven (to ventilate it) before lighting.
4. Know the location of the gas meter in the house and how to turn it off in case of an emergency.
7. Use care when boiling liquids on a gas stove so that they do not boil over and partly extinguish the flame.
8. Do not attempt to find a gas leak with a lighted match.
9. Only equipment purchased from a reliable dealer and properly installed should be used.
10. Teach safety to children.

MISCELLANEOUS SAFETY PRACTICES

1. An insurance company reports 462 people struck by falling objects in their homes in 1932. Be sure that you lay things firmly on the shelf, or you yourself may be laid on the shelf for quite some time.
2. We can protect ourselves from many knocks and bruises by shutting cupboard doors, drawers, oven doors, etc.
3. Having clothes in good repair will help to prevent accidents which occur around machinery. Ragged trousers or sleeves often get caught in machinery. Catching the heel in a poorly sewed hem may cause an accident.
4. Swinging doors, "hatchways", need sturdy handles and good hinges.
5. Toys bear daily inspection for loose parts.
6. All pins, buttons, marbles, even basting threads, are a danger to a child who may swallow things.
7. Do not put pins in your mouth.
8. The National Society for Prevention of Blindness reports that more than half of the eye accidents to children are caused by weapons and fireworks. The weapon group is most important. Always treat a gun as an article of danger.

ACCIDENTS DON'T HAPPEN, THEY ARE COMMITTED

What can the homemaker do to stop them?
First: The homemaker may inform herself as to the facts and causes of accidents and how they can be prevented. It is cheaper to prevent accidents than to pay for them. It is better to keep the vase from getting broken than to glue the pieces together. It is better to give the child dull pointed scissors to do his cutting than to yell and rush at him when he wields sharp pointed scissors toward his eyes.
Second: Teach safety to the children. Father and mother can guide a child thru the investigation period. Usually it is necessary to season the program with discipline. Teach safety in the home by precept and example.

Third: Organize a Home Safety campaign. Safety is a cooperative product. Every member of the family can have his part in helping to keep the home safe.

If a railroad can, thru an organized campaign, reduce accidents from 8.13 for every 100 employees to 0.84 per 100 in ten years, the homes of our country should do even better.

Why couldn't homes make a safety drive just as factories do—have a “No accident this month” campaign; score merits and demerits for good or bad safety conduct, giving responsibility of different parts of the house to different persons, having them inspect their area regularly and report any hazards which may have been found. Such a campaign will make the family safety-minded and prevent many accidents.

Fourth: The homemaker can practice all safety precautions to the best of her ability. Safety consists of doing things the best way. Good housekeeping in reference to safety is “A place for everything and everything in its place.”

The more orderly the home, the more safe it is. Proper routine is essential. On busy days when work piles up and the body becomes over-fatigued and weary is usually when one becomes careless and then accidents occur. If you find yourself getting too tired it is better to let some tasks go and take a rest. This practice pays dividends in many ways. Industrial plants have found rest periods to be a paying proposition. We need to work under the best conditions possible; good lighting helps, plenty of fresh air conserves energy; over-heated kitchens cause irritability.

SOME FIRST AID TREATMENTS FOR HOME ACCIDENTS

When accidents do occur, it is well to know what to do. Knowledge and foresight will help one to keep calm and to do her best for the patient.

The explanation of First Aid and Treatments that follows is taken from the American Red Cross Text Book on First Aid.

First Aid is the immediate, temporary treatment given in case of accident or sudden illness before the services of a physician can be secured. In some cases this immediate action saves a life. In all cases, proper first aid measures reduce suffering and place the patient in the physician's hands in a better condition to receive treatment. The duty of the first aider ends when the physician's begins, and there should be no clash of interest between the physician and the first aider.

Purpose of First Aid Treatment. The main purposes of First Aid training are:

1. To prevent accidents. To make the individual see an accident in terms of possible pain to himself and his pocket-book is an important feature of any safety program. Impressing the results of failure to have small injuries immediately cared for is one of the best methods of getting people to have all minor injuries treated without delay.

2. To equip the individual with sufficient knowledge to determine the nature and extent of an injury. This does not mean that the first aider is expected to make a complete and accurate diagnosis such as the physician makes, but he should be able to come to some decision as to the nature and possible extent of the injury.
3. To train the first aider to do the proper thing at the proper time. Likewise, knowing what not to do is equally important.

**General Directions.** When a person is injured, the trained person possesses the ability to render first aid and should tactfully assume charge of the situation.

**Keep the patient lying down** in a comfortable position with the head level, at least until it is determined that the injury is not serious. This prevents fainting, which occurs quite frequently otherwise, and helps prevent the condition called shock.

Almost always an untrained person insists that the injured person sit up, or will even try to get him to stand. This practice cannot be too strongly condemned. However, if the face is flushed, the head may be slightly raised. If there is vomiting, turn the head to one side so the vomited matter will not be sucked into the windpipe and choke the patient.

Look for hemmorrhage, stoppage of breathing, wounds, burns, fractures, dislocations, poisons, etc. Be sure all the injuries are found.

In examining the injured person, remove just enough of the clothing to get a clear idea of the extent of the injury. If the injury is of the arm, leg, or body, it is usually advisable to rip or cut the clothing from the injured part. Preferably, rip the seams. Taking off the clothes in the usual way may cause unnecessary suffering and aggravate the injury.

Serious bleeding, stoppage of breathing, and poisoning take precedence in this order over everything else and demand immediate treatment.

**Keep the patient warm.** This is essential in preventing serious shock.

If the weather is cool it is just as important to wrap the patient on the under side as to cover him over.

Send some one to call a physician or ambulance. In all cases, in calling be prepared to give the following information:

1. Location of injured person.
3. What first aid is being given.

In the excitement following an accident, the first essential information is often omitted. The second item is of considerable value to the physician, as he may need equipment not usually carried. The third is important, as the physician may be able to suggest additional measures before his arrival.

**Keep cool and do not be hurried into moving the injured person** unless absolutely necessary, until a clear idea of the nature and extent of the injury is obtained and first aid has been rendered.

**Never give an unconscious person water, or other liquid** as it may enter the windpipe and strangle him. However, if the injured person is conscious, give him all the water he wants, but give it slowly and in sips. Whiskey and brandy are not proper first aid stimulants and should not be used. Their use may do considerable harm.

Keep onlookers away from the injured. They do no good and frequently interfere with what is being done.

Make the patient comfortable and cheer him in any way possible. Allay his fears and keep him hopeful. A proper mental attitude on his part is highly important. It promotes better cooperation and aids recovery.

**Be sure nothing is done that will cause further injury to the patient.**
DRESSINGS AND BANDAGES

As proper care of wounds to prevent infection is of prime importance, one should have definite knowledge of materials that may safely be used next to the wound, have skill in applying bandages to hold these in place, and have the ability to handle properly the materials used.

Dressings or Compresses. Dressing or compress is the name given to material applied directly over a wound or burn. The material most commonly used is gauze, altho cotton, wrapped in gauze, is sometimes used. Gauze is better than other cotton cloth as it is more absorbent and allows more circulation of air. **Do not use absorbent cotton directly over a wound or burn, as it sticks and is very hard to remove.**

Since a compress is for use directly over an open wound or burn, it must not only be clean in the ordinary sense, but must also contain no germs, that is, **it must be sterile.**

Sterile dressings or compresses are manufactured in various sizes in order to be most serviceable for the kind of wounds for which they are intended. During the process of manufacture, the germs are killed by heat, usually steam under pressure. In most First Aid kits these dressings are sealed in individual waxed paper packages, which, if unbroken, insure their remaining sterile. These especially prepared sterile dressings or compresses are always superior to improvised ones.

The dressing or compress should be large enough to cover the entire area of the wound or burn; and some margin is always desirable. If the tails on certain compresses are too short, they may be spliced with any convenient material as they do not come into direct contact with the wound.

**Never use adhesive tape, electrician's tape, court-plaster, collodion, or similar preparations directly on a wound.**

The compresses or dressings most frequently found in First Aid kits or purchasable at the drug store are:

**Gauze Squares.** These squares, usually about $3\frac{1}{2}$ by $3\frac{1}{2}$ inches, are several layers of gauze in thickness and have been made by folding a strip of gauze to size. They are usually sealed in individual waxed envelopes. They may be used on any small wound or burn.

**Bandage Compresses.** A bandage compress is a dressing consisting of a pad made of several thicknesses of sterile gauze sewed to the middle of a strip of gauze or muslin. There are several sizes, the most common being 2-inches, 3-inches, and 4-inches square. Usually these dressings are so made that by cutting or breaking a stitch the pad can be unfolded to twice the original size. They are suitable for use on any wound or burn which they will cover.

**One-inch Compress on Adhesive.** This consists of a 1-inch pad of sterile gauze placed in the middle of a 1-inch by 3-inch strip of adhesive. This is then covered with one thickness of crinoline to protect the adhesive. The most satisfactory ones come in individual, sealed, waxed-paper envelopes. The compress on adhesive can also be purchased in strips up to six inches in length, and the desired width cut off as needed; but this form is not so easy to keep sterile. The compress on adhesive tape is the most satisfactory dressing available for small cuts, scratches, wounds of the fingers and toes, blisters on the feet, etc. It is difficult to displace and allows free circulation of air to the wound.

**Plain Sterile Gauze.** This is given different names in various kits, such as a gauze compress, absorbent gauze, compress, etc. It is
SAFETY IN THE HOME

FIG. 3.—Triangular bandage folded to cravat bandage.

FIG. 4.—Open hand bandage.

FIG. 5.—Arm sling with splint.

FIG. 6.—Arm sling.
usually a square yard of sterile gauze so folded that it can be unfolded to the desired size without the fingers touching the surface to be applied to the wound. Plain sterile gauze is of great value in dressing large wounds and burns; also for padding splints.

![Fig. 7.—Eye bandage.](image)

**Roller or Pleated Bandage.** Freshly-opened gauze bandage from a package that is marked sterilized may be folded several layers thick to desired size and used as a compress. Bandage that has been open for some time, or carelessly handled, should not be so used.

**Picric Acid Gauze.** This is gauze that has been treated with a solution of picric acid and dried. There are two common sizes of packages, one containing one square yard and the other 12-inch by 18-inch or 6-inch by 36-inch gauze, folded to a 3-inch square. This is used as a dressing for burns, and its application will be taken up under the topic of treatment of burns.

**Improvised Dressings or Compresses.** When sterile compresses are not available, freshly laundered handkerchiefs, towels or similar cloth may be used in emergencies. These should be carefully unfolded and a part that has not been touched placed next to the wound. Lacking this, take the cleanest cloth available and kill the germs by scorching with an iron, on top of the stove, over the gas flame, over an open fire, or with matches, etc. The small amount of black carbon that may collect on the cloth during this operation contains no germs and is not sufficient in amount to do any harm.

**Care in Handling.** In handling all this material, remember that the surface to be applied to the wound must not come in contact with the fingers or any substance that is not sterile. Be careful, in applying the dressing or compress to the wound, not to drag it across the dirty skin around the wound or allow it to slip about over the skin.

**Bandages.** Any gauze or cloth material used for any of the following purposes is called a bandage.

To hold dressings or compresses in place.
To keep splints in place.
To control bleeding by pressure.
As slings.

General Directions for Bandaging. Bandages are not applied directly over wounds; the wound must always first be covered with a dressing.

The square, or reef knot, is used in tying all bandages unless otherwise specified. Grasp the ends to be tied, one in each hand. Carry the left end over the right end and around under it. The end now held in the right hand, which is the end originally held in the left, is carried over and around under the end now held in the left. Pull ends tight to complete the knot. This may be converted into a slip knot and easily untied by grasping one end in one hand and its continuation on the other side of the knot in the other. Now give a strong pull.

Tie knots where they are easy to reach. Do not tie them so as to cause discomfort.

A bandage should be firm, but not tight, as a tight bandage may cut off the blood supply and thereby cause severe pain or even gangrene. Remember that swelling usually follows an injury and a bandage that was just right when applied may become too tight, thus cutting off the blood supply. Examine the bandage part frequently for this.

Do not cover the ends of the fingers or toes, unless this is necessary to cover the injury. By their appearance one can tell if the bandage is too tight. If the ends become swollen or bluish the bandage should be loosened. A bandage that is too tight increases swelling by cutting off the return flow of venous blood and may eventually cut off all the blood supply.

FIG. 8.—Head bandage.

Never apply a wet bandage. Cotton cloth or bandage applied wet tends to shrink and becomes too tight as it dries.

Do not apply a bandage too loose, as it may slip and expose the wound.

Kinds of Bandages. The bandages used in First Aid are the triangular, roller or pleated gauze, and four-tail.

The triangular is most valuable of the three as it stays on well without adhesive tape and is very easy to improvise from any kind of cloth, piece of shirt, old sheet, large handkerchief, etc. Even tho not full size, most of the bandages illustrated can be put on by tying any available material to the ends to increase the size.

Unbleached muslin is generally used in making the triangular bandage, altho bleached does as well. The bandage is made from a piece 36 inches or 40 inches square, preferably 40 inches for use on adults.
Cut the square diagonally into two pieces. Thus the square makes two bandages.

The only safe thing to do is to take proper care of each wound, no matter how small, as soon as it occurs.

Many industries have greatly reduced their number of infections and in consequence the lost time, added expense, and crippling, simply by educating the employees to have each wound, no matter how small, properly cared for at once. Most of the serious infections and cases of blood poisoning start from very small wounds.

**FIRST AID TREATMENT OF WOUNDS**

First aid treatment of wounds varies, depending upon whether or not the wound is bleeding seriously. The treatment of wounds where bleeding is not severe, and infection is the chief danger, will here be considered.

1. Wounds in which the bleeding is not severe.
The chief duties of the first aider are to prevent more germs from getting in and to use a disinfectant to destroy as many of the germs in the wound as possible.

A physician should always be consulted if the wound is of any seriousness.

**Do not touch the wound** with the hand, mouth, clothing, or any unclean material. Only sterile gauze should be used.

**Do Not Wash with Soap and Water.** It is impossible for the first aider to do this without carrying in large numbers of germs from the surrounding skin and from the water itself. A physician treating a case may desire to wash a wound, but remember, he is giving treatment and not first aid. Thru his years of training he can safely do things which a first aider must never attempt.

**Encourage some bleeding** if not already present by very gently squeezing or "milking" toward the wound. This washes out some of the germs.

**Apply half-strength (3 ½ per cent) tincture of iodine once,** well down into the wound, then on the skin around the wound for a distance of from one-half to one inch. Tincture of iodine as purchased at the drug store is stronger than necessary; have the druggist dilute it with an equal amount of "rubbing alcohol." The bottle should have a glass or rubber stopper and be kept tightly closed at all times, when not in actual use. Otherwise the alcohol evaporates and the iodine becomes too strong. Glass ampules of tincture of iodine of various types are found in First Aid kits. These are very satisfactory as evaporation cannot take place. Each usually has either a swab on the end or a small glass rod inside the ampule for applying the iodine to the wound. Clean cotton or cloth wound around the end of a wooden applicator, match, or tooth pick makes a good applicator for applying iodine from a bottle. Many of the bottles have a glass rod applicator attached to the stoppers.

**Let the Iodine Dry.** If wrapped up while still wet, blistering is likely to occur. If allowed to dry, this practically never happens.
Apply a sterile dressing or compress and bandage snugly in place. This prevents dirt and germs from getting in the wound. Do not allow the dressing to slip about over the adjacent dirty skin as it will no longer be sterile, having picked up germs. Adhesive tape, if available, may be used to prevent the dressing from slipping.

**Do not disturb blood clots**—for example, do not tear a compress from a wound.

**Never Re-apply Iodine.** Furthermore, do not use it near the eyes or body cavities.

In cases where a physician's services are soon available, it is probably better, to leave all cleaning of a wound to him. If not, and some cleaning seems advisable, grease and oil may be removed with benzine, naphtha, oil of turpentine, or ether. A good grade gasoline is sometimes used, but one must be sure it is not a motor fuel or ethyl gasoline. “Rubbing alcohol” is the most suitable preparation for removing other dirt; it may be purchased at any drug store in pint or half-pint bottles. Use clean gauze, and beginning at the edge of the wound wash away from it, never towards the wound.

Some industrial plants, on advice of their physicians, may recommend that no disinfectants be used, only a sterile dressing. Others may desire that certain other disinfectants be used. These instructions should be followed in the plant in which they are issued.

**Tincture of iodine**, used half-strength has been found effective as a germ killer according to experience covering a period of many years. It is easy to obtain and is quite safe if properly used.

**BURNS AND SCALDS**

Injuries caused by the contact of heat are called burns. If the burn is caused by a hot liquid or a hot, moist vapor, it is commonly called a scald.

**Causes.** Most burns are caused either by dry or moist heat. Electricity is also a frequent cause. Electric burns are of two kinds: (1) those due to the current of electricity passing thru the body—this current burns or destroys tissue as it goes, hence these burns are always deep and may be smaller on the surface than they are below, and they heal slowly; (2) those due to an electrical flash—these are not deep and are usually first or second degree.

Various chemicals, including strong acids and alkalis, destroy body tissue, and, tho the injury is due to the direct action of the chemical rather than to any heat produced, the injury is always called a chemical burn.

**Degree.** Burns are classified according to the “degree” or depth to which the body tissues are injured. This classification should be remembered, as the treatment is influenced by the degree of the burn. Also the terms of degree are useful in describing the seriousness of the injury.

- **First degree**—skin reddened.
- **Second degree**—skin blistered.
- **Third degree**—deeper destruction of tissue, as charring or cooking.

**Rescue.** In attempting a rescue from a burning building, speed and clear thinking are absolutely necessary.

The best air is always near the floor; in fact the rescuer may have to crawl along with his nose almost rubbing the floor.
Tie the victim's hands quickly and using the "Fireman's drag", crawl to safety. In going down stairs it will be necessary for the rescuer to reverse his position, crawling down feet-first and dragging the victim after him.

A person whose clothes are on fire must not run or remain in a standing position. Running fans the flames, and being in an upright position makes one liable to inhale the flames. The victim must be forcibly thrown down if necessary. Smother the fire with coats, blankets or rugs, smothering from the shoulders toward the feet.

If one's own clothing catches fire, roll up in a blanket or rug, leaving the head uncovered, and thus smother the flames. If a blanket or similar material is not available, lie down, roll over slowly, and use the hands to help beat out the flames.

If caught on the upper floor of a burning building, be very careful about opening any doors into the hallways or stairways which feel at all hot. Often superheated air collects here, and one breath of this very hot air may cause death. Also, opening doors and windows makes a draft. Jump from a window only as a last resort. Rather, make a rope from sheets or blankets, tie one end securely and slide to safety.

**Treatment of First Degree Burns.** Here the skin is not broken and the danger of infection is negligible. Relief of pain is the chief purpose of the treatment. Any clean material that relieves pain is satisfactory, such as soda in water, any good burn ointment, plain petrolatum (also called vaseline), petrolatum and baking soda mixed into a paste, carbolated petrolatum, olive oil, castor oil, or any clean oily substance. Smear the substance used over the burned part and cover with clean gauze or cloth. Cold water is most effective in cooling the part and relieving the pain, particularly if it can be applied immediately.

**Treatment of Second or Third Degree Burns.** Do not open a blister. The danger of infection is great. Do not use any material on these burns that might carry in germs, such as an oily or greasy substance, or gauze that is not sterile. Take the same precautions as with any open wound.

Remove all loose clothing over the burned area, but do not try to remove clothing that adheres to the skin. Cut around it and leave the part that is stuck for the doctor to remove.

Picric acid gauze is one of the most satisfactory dressings for First Aid kits. It is very compact, easy to apply and does not deteriorate. This is sterile gauze that has been soaked in a solution of picric acid, dried and sealed in packages. Moisten the gauze with clean water before applying it. Then apply as any compress and bandage securely but not tightly. This dressing should be kept moist until the patient is placed in a physician's hands. Be careful not to get it on the clothes, as the stain will not wash out.

Sterile gauze (or freshly laundered cloth) soaked in one of the following solutions also makes a very good dressing. Use either one tablespoonful of baking soda or about two tablespoonsful of Epsom salts to a pint of warm water—preferably water that has been boiled. The dressings should be kept moist and warm until medical aid is obtained. This is probably the most satisfactory treatment for home use on extensive burns, and works well on any.

A good burn ointment or carbolated petroleum spread on sterile gauze is a very satisfactory dressing for small burned areas and may be used on any burn if one of the other treatments is not available.
Always spread the ointment on the gauze, never attempt to spread it on the skin. The chief disadvantage of these ointments is that the greasy film they leave over the burn may tend to interfere with the treatment that certain physicians want to give. This is especially true of large burns.

**Never apply iodine to a burn.**

Do not use absorbent cotton next to a burn, as it will stick and when removed will further injure the tissues.

If wax or metal-like substance has caused the burn, do not attempt to remove any portion that sticks.

Large blisters should be opened only by a doctor.

**Shock should have the usual care. This is very important.**

**POISONS**

Children are particularly liable to take poisons accidentally. If a child takes poison, usually the entire family becomes panic stricken and wastes much valuable time in rushing the patient to a distant hospital or stands awaiting, helplessly, the arrival of a physician. In the meantime the poison is being absorbed into the child's system.

**Always call a physician at once, but in the meantime give First Aid.**

It is not necessary to remember a long list of antidotes. In fact, much better work will usually be done if the first aider uses the simple measures always at hand.

The poisonous drugs commonly taken are:

1. carbolic acid or phenol;
2. Lysol;
3. bichloride of mercury (mercury antiseptic tablets or corrosive sublimate tablets);
4. iodine;
5. arsenic or Paris green;
6. strychnine;
7. acids—sulphuric, nitric, hydrochloric, oxalic, etc.;
8. alkalis—caustic soda (lye), caustic potash, ammonia, etc.;
9. medicines used to induce sleep and relative pain,—opium, morphine, veronal, luminal, chloral hydrate, etc.;
10. kerosene, (coal oil)—this particularly by small children who find it sitting around in a cup;
11. wood alcohol or denatured alcohol.

**Symptoms.** These vary considerably with the drug taken. There may be no early symptoms. Pain in the stomach, nausea, vomiting, and cramps frequently occur. If a corrosive poison has been taken, the mouth and tongue may be burned or stained. Headache powders and sleep-producing drugs, of course, cause drowsiness or sleep, or even unconsciousness.

**Treatment.** Two main points are to be remembered:

1. **Dilute.**—A poison diluted with a large amount of fluid is never absorbed as rapidly as when in a concentrated form. Vomiting is much easier to induce if the stomach is full.

2. **Wash Out.**—When the poison is removed it can do no further damage. Repeatedly induce vomiting until the fluid is as clear as when swallowed.

Both of these objectives are accomplished at the same time by any of the following emetics:

a. Soap suds, use any ordinary soap.

b. Salt water.

c. Soda water, use ordinary baking soda.

d. Lukewarm water.

e. Dish water.

f. Milk, particularly in corrosive poisons.

Give sufficient emetic—**four to seven glassfuls**—preferably lukewarm. Tickling the back of the throat with the finger aids in inducing vomiting, after the patient has had several glassfuls of the emetic.
When the stomach is well washed out, one may give the antidote, if known and on hand. But do not waste time getting an antidote before washing out the stomach. A large dose of Epsom salts may safely be given after the stomach is emptied and is good treatment for most any poison.

In Carbolic acid poisoning, give soap suds, or give a large handful of Epsom salts in a couple of glasses of water, followed by enough warm water to induce vomiting.

If the poison taken was a corrosive, such as an acid, alkali, or bichloride of mercury, follow the treatment already outlined with soothing drinks of milk or of milk and eggs beaten up together.

Give stimulants if the patient is showing symptoms of shock. Also apply heat. If breathing stops apply artificial respiration. This is particularly likely to be needed in sleep-producing drugs. In opium or morphine poisoning it is advisable to keep the patient awake, but do not exhaust him by compelling physical exercise. Strong coffee, a cup every half hour or so, is good in treating poisoning from any sleep-producing drug.

In strychnine poisoning do not give a stimulant and keep the patient as quiet as possible.

**FOOD POISONING**

Food poisoning, popularly called ptomaine poisoning, is quite common, particularly during the summer months. It is caused by eating food that has not been properly cared for, that is, food that is partly decayed. Certain other substances such as the poisonous mushrooms, the so-called "toad-stools", may cause trouble. Berries, certain roots, and such may act likewise.

Occasionally, several persons who have eaten of the same food become ill a short time afterward. This is usually due to food poisoning. Fish, chicken, and potatoes are some of the most frequent offenders.

An uncomfortable feeling in the upper abdomen, pain, cramps, nausea and vomiting, purging, and more or less prostration are usually the chief symptoms.

Treatment is the same as for drug poisons.

**Sanitary care of food in the home.** Care is necessary in the handling, preparing, and storing of foods.

After fowl or pork has been cooked, it should be kept at boiling temperature or cooled quickly with cover off. When allowed to stand at a low temperature or cool slowly, a poisoning will develop in less than one-half hour which will cause ptomaine poisoning.

All home canned non-acid food is safe if held at boiling temperature for ten minutes before serving. This will kill Bacillus Botulinus which causes a food poisoning called Botulism.

**SPRAINS**

Sprains are also injuries to joints. They may be described as temporary dislocation—that is to say, the bones are thrown out of place just as in a true dislocation, but immediately spring back into place. The wrist and ankle are the joints most frequently sprained.

Sprains are caused by violent stretching or twisting of a joint. Muscular exertion, lifting and falling are common causes. The same tissues are injured as in a dislocation.

**Symptoms.**
1. Pain at the joint at the time of injury.
2. Swelling over the joint—takes place rapidly.
3. Inability to use joint without increasing pain.
4. Discoloration—not seen immediately, but may last for weeks.
   It is usually not difficult to distinguish between a sprain and a dislo-
   cation, but it is often difficult to tell the difference between a sprain and a fracture at the joint, which may occur together. If in doubt, treat as a fracture.

   **Treatment.** Sprains vary greatly, ranging from the minor one where the victim limps for a few minutes to the severe one where the liga-
   ment is torn, requiring weeks before a complete healing takes place. In general, the First Aid treatment is:

   1. Elevate the part—if a wrist, by means of a sling; if an ankle have patient lying with pillows, coats, etc., under leg.
   2. Apply cold or hot applications. Cold usually gives the best re-
       sults, but heat is advisable in serious shock. Very young or very old persons are more easily thrown into shock, so sometimes heat is more advisable for them. Application may be by compresses wrung out of water, bags filled with ice or hot water, or holding the injured mem-
       ber under a running tap. Apply for a few hours or until the case is seen by a physician.
   3. If severe, the part should not be used until seen by a physician.

   Sometimes a person sprains an ankle when he is alone or when for other reasons it is absolutely necessary for him to walk some distance for aid. The sprained ankle bandage gives considerable support in these cases. The bandage is always applied with the shoe on. A high shoe should be loosened, but not removed.

**STRAINS**

A strain is an injury to a muscle or tendon as a result of severe exertion. It may be merely an over-stretching, or some of the fibers may actually be torn in the stretching.

   **Causes.**—Lifting done when in an improper position is one of the chief causes of strain, particularly of strained backs. Many companies have greatly reduced serious back-strains by teaching the men to use their powerful leg and thigh muscles in lifting instead of the muscles of the back. Of course, lifting too great a load or a quick wrench may also be causes.

   **Symptoms.**—
   1. Pain at the time of injury.
   2. Stiffness and very painful movement of the part, which often in-
       creases during the first few hours after injury.

   **Treatment.**—Rest of the injured muscle is necessary. Place the patient in the most comfortable position.

   Heat applied in any convenient way gives considerable relief from pain. Linaments are of doubtful value, but gentle rubbing of the part stimulates circulation and may help. Always rub up the part, as this aids the return flow of blood in the veins. The force of the rubbing may later be increased; this helps to “loosen up” the muscles.

**BRUISES**

A bruise is caused by a blow to some part of the body which breaks the small blood vessels in the tissues just under the skin. As the blood oozes into the tissues from these broken vessels, it causes swelling and discoloration, as in the familiar “black eye”.

   **Symptoms.**—Pain, swelling, and discoloration. Usually the skin is not broken.
Treatment.—Usually no treatment is needed. Ice, or cloths wrung out of very cold water when applied immediately, help to prevent discoloration, to keep down the swelling, and to relieve the pain.
If the skin is broken, treat as any open wound.

PUNCTURED WOUNDS

Special Dangers.—This type of wound is subject to special dangers and is much more likely to become infected than an open wound because:
1. Punctured wounds usually do not bleed freely, so the cleansing given by bleeding is not present.
2. They are very difficult to clean out. Even the physician often has difficulty in removing dirt and foreign bodies.
3. It is quite difficult to apply an antiseptic well down into the wound.
4. Air cannot get to the wound. Lack of air favors greatly the growth of certain germs, particularly the one causing tetanus or lock-jaw.

Tetanus or lock-jaw is caused by a germ that normally lives in the large intestine of the horse and other animals. Hence it is distributed everywhere that horse-manure is present, on roads and streets, on lawns and gardens where the manure has been used as fertilizer, around barns and stables and in fields. Street dirt, carried into buildings of all sorts on the shoes, always contains a large number of these germs. It is not that a rusty nail making a wound causes tetanus, but rather that the nail often has been in the street or around the barn, and there picked up many tetanus germs.

This germ is peculiar in that when thrown in unfavorable surroundings, it assumes what is known as a "spore" form and can lie out in the rain, heat and cold for months. But as soon as it is once more placed in favorable surroundings, for example in a punctured wound, it begins to grow rapidly. Also, this germ grows only where oxygen or air is not present. Air cannot circulate down into a punctured wound, which is thus a particularly suitable place for the growth of the lock-jaw germ.

Tetanus is easy to prevent, but very difficult for a physician to treat if it once develops. One must be particularly careful with punctured wounds.

Treatment.—The first aid treatment of a punctured wound consists of encouraging bleeding, being careful not to bruise the tissues, and then working iodine well down into the wound.

Always See a Physician.—In addition to treating the wound itself the physician will often give tetanus antitoxin which is a most effective preventive. Tetanus antitoxin was used extensively during the World War. Lock-jaw very rarely developed in cases given antitoxin, whereas it had been one of the chief causes of death among the wounded in all previous wars. Any physician will know from his years of training and experience whether or not the antitoxin is indicated.

Powder Burns.—Explosing fire crackers, blank pistols, etc., are common causes. Some actual burning of the skin may be present, but the chief danger is usually from the many very small punctured wounds caused by the small particles of burned powder penetrating the skin. These carry in tetanus germs from the skin, which is apt to be covered with street dirt, and unless proper treatment is given, tetanus often develops. The first aid treatment depends upon whether there is actually a burn or merely small wounds. Always take the injured per-
son to a physician so that he can give further treatment to the injury and administer tetanus antitoxin. The value of having the antitoxin given in these cases cannot be overemphasized.

**Gunshot** wounds are treated as any other wound, depending upon whether or not the wound is bleeding severely and whether there is a fracture. Treatment to prevent shock and proper transportation are all important.

**INFECTED WOUNDS**

An infected wound is one in which the germs that entered were not killed by the body's fighting forces or by treatment, but were able to grow in the wound and in the body tissues around it.

**Cause.**—Germs are present in every accidental wound. They may come from the instrument making the wound, or be carried in from the skin as the wound is made. During the first six hours there is practically no growth of germs in the wound. It is during this early period, before the germs begin to grow, that first aid must be given if it is to be effective. After about six hours, the germs begin to grow in the wound and in the surrounding tissues. Nature at once starts to build a wall to keep the germs from spreading to the rest of the body and from getting into the circulating blood. Millions of white blood cells are sent to help build this wall. Many of them are killed in the fight, and their dead bodies form a considerable part of the pus that is usually present in an infected wound. Squeezing any infected wound or boil tends to break down this defensive wall and may spread the infection.

**Prevention.**—Accident prevention is of course most desirable. But when a wound does occur, it should have proper care at the earliest possible moment. Avoid friction or further injury after the wound is dressed.

**Symptoms.**—The symptoms of infection are quite well known to almost everyone:

- **Pain.**—Particularly a throbbing pain that comes on several hours after the injury.
- **Swelling.**—May be very great. The limb may swell to two or three times its normal size.
- **Redness.**—Around the wound.
- **Heat.**
- **Pus.**—Usually present but occasionally none is seen.
- **Red Streaks.**—May radiate from the wound. Often present when pus is absent.
- **Swollen Glands.**—A constant sign of infection. These will be present in the groin if the infection is of the lower limb; in the arm pit or axilla if of the arm; and in the neck if the infection is of the head.

**Tenderness.**—On pressure as distinguished from pain.

**First Aid Treatment.**—Always consult a physician at once. This is too serious a condition for the first aider ever to try to treat. It is a difficult condition for the physician to treat; aid him by not waiting but by seeing him at once.

Occasionally a situation arises in which it is impossible to secure a physician's services for some hours. While waiting, applications of hot salt solution can be used. Use boiled water, preferably in the vessel in which it has been boiled. Add about three tablespoonsful of ordinary salt, or twice this amount of Epsom Salts, to each quart of
water. Use as hot as is comfortable. Place the infected part directly in the solution if possible. If not, use a large compress wrung out of the solution. A freshly laundered bath towel makes a good compress. Change often enough to keep hot. Apply for an hour continuously. Repeat every six hours until a doctor can be secured. Remember this is merely a temporary measure and a physician's services should be secured at once.

Colds

Colds are probably caused by a germ or a variety of germs, although the cause is not absolutely determined. These germs may be present in the nose and throat at any time, and the body have enough resistance to prevent their getting a foothold. Then some cause such as insufficient rest, the chilling of the body, thru wet feet or clothing or exposure to drafts, or being in overheated air with poor ventilation, may lower one's vitality to such a point that the germs begin to grow. Colds frequently occur in epidemics. During epidemics they are particularly contagious.

Colds are more common than any other disease. From most of them, recovery is good; but a cold that is not properly cared for may be the start of serious trouble, such as pneumonia or mastoiditis.

Prevention.—Avoid undue exposure which tends to lower the body's resistance. Do not cough so that the spray will fall on anyone. Not only colds but other contagious diseases are spread by carelessness in this respect.

A person having a cold should always sleep alone.

Individual towels should be used by anyone having a cold.

Frequent washing of the hands in running water with plenty of soap is very important. This is the most effective single measure that the physician has to prevent the spread of the contagious disease.

All glasses, cups and eating utensils should be thoroughly sterilized after using.

Treatment.—When a cold does begin, prompt treatment will often break it up.

Avoid unnecessary exposure.

Drink plenty of fluids.

Bicarbonate of soda or baking soda—a rounded teaspoonful every two hours for about three doses—often helps.

A laxative, such as Epsom salts or milk of magnesia may well be taken.

Take a hot bath followed by a hot lemonade or similar drink just before going to bed. Do not get chilled after taking and get into a warm bed at once.

Hot water, with a half teaspoonful of salt or soda added to each glassful, makes a very satisfactory gargle. Use hot and often.

Rest in bed is the most satisfactory cold treatment.

If no marked improvement is noted, or fever or cough persists, consult a doctor.

Convulsions in Children

Symptoms.—The attack usually comes on without any warning. In some cases extreme restlessness, irritability, or slight twitchings of the muscles of the face or extremities are present.

The face is first pale; later it becomes blue—especially about the lips.

Convulsive twitchings begin in the muscles of the eye, face, or extremities and soon spread to all parts of the body.

The body may become stiff, or even bowed backward.
All sorts of muscular spasms and all degrees of severity may be seen.
After a variable time, the convulsions gradually lessen and finally
cease. One seldom lasts more than half an hour—usually less than
that. The child is left in a stuporous condition, or asleep.
The attack may recur after a short time. Death rarely occurs from
the convulsion itself.

Causes.—Two common causes are: (1) indigestible food; (2) pro-
longed high fever. Also, many diseases of children may start in this
way.

Treatment.—Undress the child, moving him as little as possible, give
a hot bath at once, always keeping a cold cloth on the head. Prefer-
ably, the water should be from 100 to 103 degrees. Use a thermometer
as a test, if available. If not, the water should be tested with the
elbow; it should feel comfortably warm (or hot) after one half-minute
of immersion. There is great danger of scalding a child in the excite-
ment which attends a convulsion. Mustard (a tablespoonful to a gallon
of water) may be added to the bath if desired, and if it is convenient.
If no tub is available for the bath, then use the hot pack made by
wrapping the naked child in a blanket or very heavy towels wrung out
of water at the same temperature recommended for the bath. Either
the bath or the pack may be used up to thirty minutes time, if needed.
However, if mustard is used, the child must be removed as soon as the
skin is reddened.
At the same time or immediately following this treatment, an enema
of from one-half to one glassful of warm soap sacks is desirable, if a
small syringe for giving it is available.
Keep the child as quiet as can be; needless movement or irritation
may bring on a recurrence of convulsions just when they are ceasing.
Following the bath or pack, put the child to bed, preferably between
warm blankets.

Always call a physician at once. A convulsion is frequently the
beginning of a serious illness.

EARACHE

Any earache that persists for even a short time should be seen by a
doctor, as diseases of the middle ear and mastoiditis usually start this
way. Infection often spreads from the nose and throat up the tube
that leads to the middle ear. The hard blowing of the nose, especially
with one nostril held shut, sometimes causes the spread of infection
and is therefore to be avoided.
The pain can often be relieved by applying either an ice bag or a hot
water bottle to the painful ear. Just as in congestion following sprains,
either heat or cold may be used. Cold will probably give relief in more
cases than will heat. Hot or cold compresses may be used in the same
way. A bag of hot salt makes an excellent way of applying heat.
Many cases of partial or complete deafness, which are so common,
could have been prevented if proper treatment had been given early.
Even tho the pain is relieved, any severe earache always demands
the services of a doctor.