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# HOME NURSING



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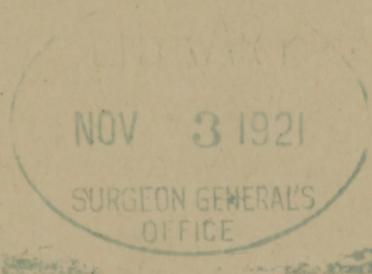
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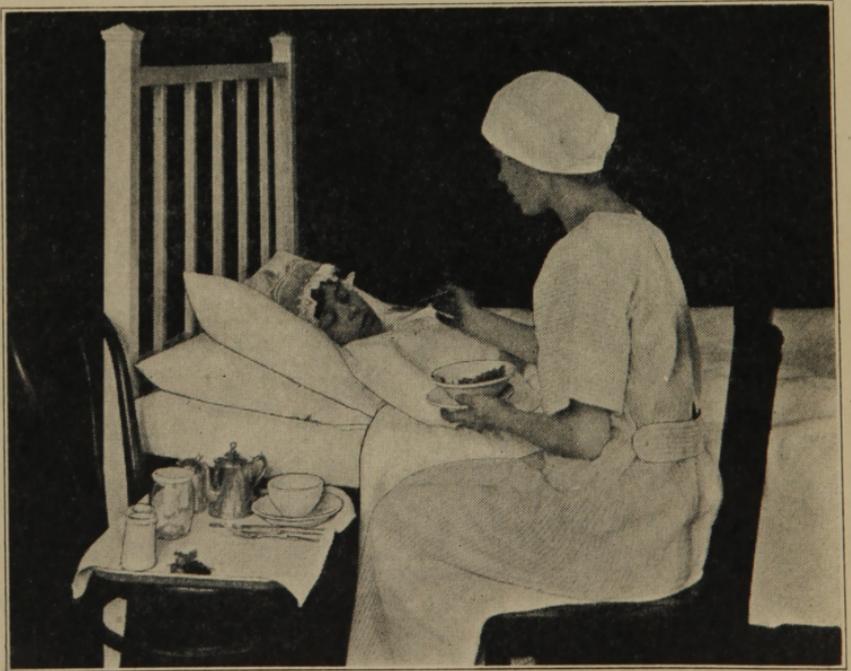
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# Home Nursing



BATHING AND FEEDING A HELPLESS PATIENT

# HOME NURSING

## A Comprehensive Series of Lessons on the Practical Care of the Sick

Issued by  
The Medical Department  
of the  
General Conference of Seventh-day Adventists



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## PREFACE

THIS little volume represents an effort to supply a well-marked and actual need. The increasing prevalence of disease and the growing scarcity of trained help for the care of the sick, emphasize the importance of instructing many women in the fundamentals of disease prevention and home nursing. Many home nurses have recently been trained, and already it is being demonstrated that this is a valuable measure both in the protection of the family against disease and for insuring proper care in case of illness, especially in the absence of the trained nurse.

While this book is specifically intended for use in class work, its scope of usefulness need not be thus restricted. Individuals not having the opportunity of joining classes, may derive considerable benefit from a careful study and practice of the principles presented.

We gratefully acknowledge the valuable services rendered by Miss Franke Cobban, R. N., and G. H. Heald, M. D., in the preparation of some of the lessons. The Washington Sanitarium very kindly afforded help and facilities in securing a number of excellent photographs of operations.

MEDICAL DEPARTMENT OF THE GENERAL CONFERENCE,

L. A. HANSEN, *Secretary.*

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## GENERAL DIRECTIONS FOR INSTRUCTORS

IN order to do thorough work, the class should not number more than twelve or fifteen.

The course should be conducted as class work, requiring recitation on the assigned text in "Home Nursing."

The assignment for the next lesson should be given out at each class period.

At the beginning of each class period at least ten minutes should be used to review "Points to Be Emphasized" in previous lesson.

Urge each student to study the text assigned, also to read the extracts referred to in "The Way to Health" and "The Ministry of Healing," and to practice at home the procedure demonstrated in each class.

Emphasize the fact that this course is to train mothers to care for their children and families, and to be helpful to their neighbors, rather than to train women to do professional work.

Always demonstrate how simple things usually found in the home may be used — oilcloth or newspapers in place of a rubber sheet, a chair as a back rest, a bucket for a foot bath, fruit jars for water bottles, etc.

Emphasize the fact that nature's remedies — air, sunshine, water, rest, good food, exercise — far surpass the use of drugs.

**Final Examination.**—(See list of questions and practical procedures at close of book.)

Any student who is absent from more than two of the class periods should not be permitted to take the final examination.

The passing grade in examination is 75 per cent. Examination should include both written and practical work.

Ten questions should be chosen from the list of 100 given. We would suggest that the student be required to write an answer to every tenth question, beginning with one of the first ten, as the instructor may assign.

Each student should be required to perform two of the practical procedures listed, as assigned by the instructor, as part of the final examination.

## **EQUIPMENT REQUIRED**

### IN CLASS WORK

Bed, including Mattress Pad, Pillows, Sheets, Blankets, Spread, and Pillow Slips

Rubber Sheet

Nightgown

Bedpan

Foot Tub

Fomentation Cloths

Chest Pack

Throat Pack

Friction Mitts

Gauze for Compresses

Old Sheet for Bandages

Towels, Hand and Bath

Wash Cloths

Fever Thermometer

Bath Thermometer

Basins

Pitcher

Tray, including Dishes, Linen, and Silver

Tray Table (homemade)

Drinking Tube

Alcohol or Witch-hazel for Rub

*“ The restoration and uplifting of humanity  
begins in the home.”*

## LESSON I — PHYSIOLOGY

**Man the Crowning Work of Creation.** — Man differs from all other created beings in that “ God created ” him “ in His own image.” It is also recorded that “ the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul.” So in studying man we are studying God’s crowning work; and though generations of sin and disease have marred this wonderful mechanism, we can still say, with David, “ I will give thanks unto Thee; for I am fearfully and wonderfully made.”

Science has attempted to pierce the secrets of life and to explain them all by the laws of physics and chemistry; but though nothing has been found in the working of the body that violates these laws, yet beyond every discovery of science there is a vast unknown. And perhaps the profoundest students of the working of the body would admit that what is known of the body mechanism is small as compared with what is not known. But the eye of faith sees in this unknown, God’s creative power and life. As Paul said, “ In Him we live, and move, and have our being.”

That God is conversant with the minute details of our bodies was known to David, for he said:

“ I will give thanks unto Thee; for I am fearfully and wonderfully made:

Wonderful are thy works; . . .  
My frame was not hidden from Thee,  
When I was made in secret,  
And curiously wrought in the lowest parts of the earth.  
Thine eyes did see mine unformed substance;  
And in Thy book they were all written, . . .  
When as yet there was none of them.”

So when we are studying about the structure and the functions of the body, we are studying God's handiwork, and we should study reverently, with a purpose to give it a care befitting the One who gave us such a wonderful mechanism. "Know ye not that your body is a temple of the Holy Spirit which is in you, which

ye have from God? and ye are not your own; for ye were bought with a price: glorify God therefore in your body."

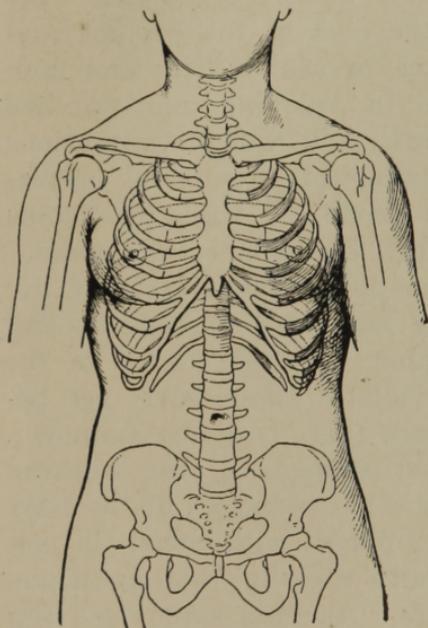


Diagram Showing the Bones of the Neck, Chest, and Abdomen

**General Structure and Composition.**—The body consists of the following parts:

**The head**, with its brain cavity containing the administrative offices, and with its four receiving stations for seeing, hearing, tasting, and smelling.

**The trunk**, the central power station, with its large cavities containing the vital organs.

**The limbs**, by which the body works its way through the world.

The body is composed of different kinds of *tissue*, as bone, muscle, connective tissue (tendon, cartilage, etc.), fatty tissue, epithelial tissue (in the skin, and the lining membrane of the food passage, air passages, etc.), and nervous tissue. As a tree is composed of wood, bark, leaves, etc., so every organ and structure of the body is composed of a number of different tissues.

For instance, the brain, the chief director of the activities of the body, is composed principally of nervous tissue; the heart, or body pump, is largely muscle; the lungs, or bellows, are mostly epithelial and elastic tissues; and the liver, or chemical laboratory, is largely epithelial tissue.

**The Skeleton.**—The bones compose the framework of the body, giving it shape and protecting the vital organs. They are attached to each other by means of joints, some fixed, as in the skull, and some movable, as in the limbs. Some joints, like the elbow, knee, and ankle, are hinge joints, permitting motion only like the blade of a knife. Others, like the shoulder and hip, are ball-and-socket joints, permitting a much freer motion.

The spinal column, spine, or "backbone," might be called the keystone of the skeleton. To its upper end are attached the head and the shoulder bones, and to its lower end are attached the hip bones. To the shoulder and hip bones, the limb bones are attached.

The bones protect the most important of the vital organs. The bones of the head protect the brain; the spine and ribs protect the important organs of the chest and upper abdo-



Diagram Showing the Bones That Support the Human Frame; also the Muscles Which Tend to Keep the Body Erect



Muscles of the Leg  
and Foot

men; and the spinal bones protect the spinal cord.

**The Muscular System.**—The muscle is the tissue which makes up the lean meat of an animal. Muscles are attached at each end; and when they contract, they draw their attachments nearer together. Usually a muscle is attached to two bones which are jointed together, so that when it contracts, one of the bones is made to move on the other. For instance, one set of muscles causes the arm to bend at the elbow; the opposing muscles cause the arm to straighten.

Muscles are divided into *voluntary*, making up a large portion of the soft part of the body; and *involuntary*, which include the heart muscle and the muscles surrounding the blood vessels, food passage, etc. The action of the voluntary muscles enables one to maintain different postures, as sitting or standing, and causes all voluntary motion, as walking, working, eating, talking, etc. The involuntary muscles pump the blood and regulate its flow, churn the food in the stomach and move it along the food passage. Any one watching a horse drink, will see the action of the invol-

untary muscles as they force the water uphill in the animal's throat.

The voluntary muscles are controlled by nerve impulses sent out by the brain or spinal cord. The involuntary muscles are controlled, at least in part, by a set of nerves which are only indirectly connected

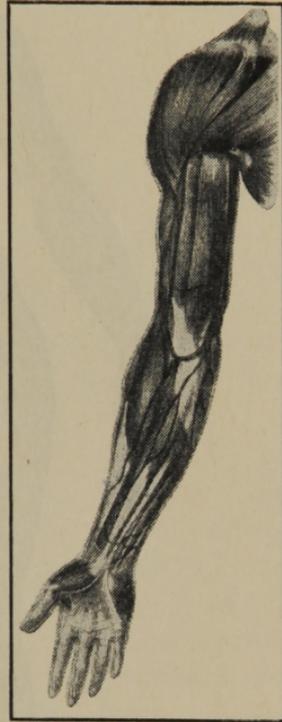
with the brain. They are not under the control of the will.

**The Nervous System.** — The nervous system consists of the brain, the spinal cord, and the nerves which branch off from them. One set of fibers transmits to the spinal cord and the brain, impulses which result in sensations, such as sight, hearing, taste, smell, touch, pain, temperature. In fact, all our knowledge of the outer world reaches our mind by means of these sensory nerves. Another set of nerves transmits impulses outward from the brain and spinal cord, resulting in muscular contraction, and also in secretion, that is, the forming of certain fluids, like the digestive fluids.

In addition to the nerves connected with the brain, is another set of nerves, known as the sympathetic nerves, which in part govern the action of the blood vessels, digestion, etc.

**Food and Digestion.**— To provide for growth and repair, and to furnish energy, as gasoline is furnished to an automobile, this wonderful mechanism requires a constant supply of nourishment, or food. Foods are divided into —

1. Proteins, capable of being built into body tissues.
2. Starches and sugars, capable of yielding heat and energy.
3. Fats, capable of yielding heat and energy.
4. Water and mineral salts.



Muscles of the Arm  
and Hand



DIAGRAM SHOWING NERVES OF BODY

Except the last, these food substances are not usually in a form capable of passing through the intestinal wall into the blood; but through the action of certain digestive juices, they are changed into substances capable of being taken through the intestinal wall. This change in the foods is known as digestion. When food is taken into the mouth, saliva is formed, or secreted, by certain glands around the mouth, and is poured into the mouth. In a similar manner the other digestive fluids are secreted and poured into the different parts of the digestive tube, as they are needed.

In the mouth, the food is broken up by the teeth and mixed with the saliva. The saliva acts on the starch, slowly converting it into a form of sugar. Some time after the food reaches the stomach, it is mixed with the gastric juice, which begins changing the protein. The stomach is a kind of preliminary churn and food mixer.

After a time, the food begins to pass into the intestine, a little at a time, and there other digestive juices act on the remaining starch and protein, and on the fat, changing all into absorbable forms. As the food is moved along the intestine by the action of the involuntary muscles in the intestinal walls, the nourishment is gradually absorbed, leaving an unabsorbable and useless residue to be removed from the body. Nearly all foods contain more or less indigestible matter, which helps to maintain proper bowel action.

**The Circulation.** — Nourishment is carried to all parts of the body by a set of tubes called *arteries*. The arterial system begins at the heart as one large tube, and branches like a tree, finally dividing into minute tubes smaller than a hair, known as *capillaries*. In the capillaries the blood comes into most intimate contact with the tissues, and part of the blood leaves the capil-

laries and bathes the tissues, furnishing them food and taking away wastes.

Connecting with the capillaries are very small *veins*, and these join into larger and still larger veins, finally reaching the heart.

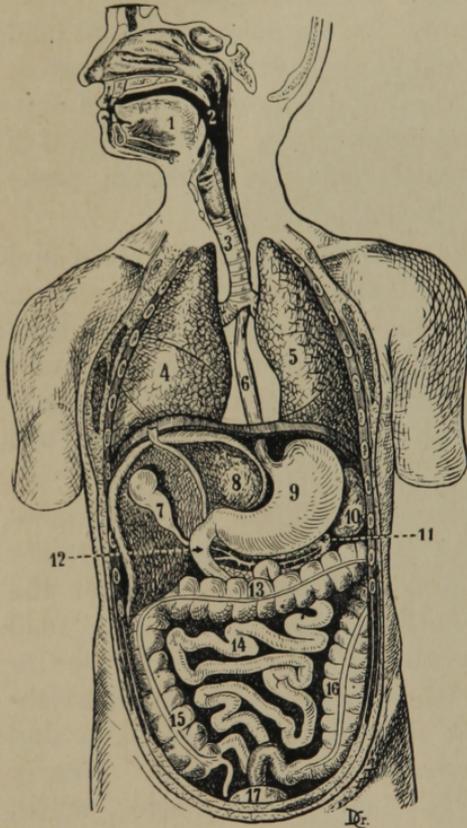


Diagram Showing the Internal Organs

- (1) Tongue; (2) Throat; (3) Windpipe; (4, 5) Lungs; (6) Esophagus; (7) Gall Bladder; (8) Liver; (9) Stomach; (10) Spleen; (11) Pancreas; (12) Duodenum; (13) Transverse Colon; (14) Small Intestine; (15) Ascending Colon; (16) Descending Colon; (17) Rectum.

body passes through capillaries in the walls of the digestive tube, and there they take up nourishment; part passes through the liver, and has certain poisons changed

The heart is really a double pump, or two pumps in one. The left heart pumps blood into all parts of the body, through the arteries. This blood, returning from the body by means of the veins, enters the right heart, and from there it is pumped into the lungs. Here again the arteries branch like a tree, and finally subdivide into minute capillaries surrounding the air cells of the lungs. These capillaries connect with veins, and these with larger veins, which finally empty into the left heart.

Thus the blood is pumped to all parts of the body, and then to the lungs. Part of the blood going to the

or removed; and part passes through the kidneys, and has certain other wastes removed. Thus the blood is being constantly renewed and purified. All the blood passes through the lungs, as will be explained later.

The fluid which oozes from the capillaries is called *lymph*. After bathing the tissues, it finds its way into another set of tubes, called *lymphatic* vessels, which connect with larger vessels, and finally converge into a vein in the neck. So that part of the blood which oozes from the capillaries into the tissues is again returned to the blood tubes.

The circulation is thus a transportation system by which nourishment is carried to all the tissues of the body and the wastes are removed.

**Breathing, Respiration.** — As an automobile requires air as well as gasoline in order to develop power, so every animal must have air as well as food. As oxygen uniting with gasoline develops heat and energy in the gasoline engine, so oxygen uniting with the food develops heat and energy in the body. This oxygen is provided by the lungs, which bring the air into intimate contact with the blood.

The air tubes, beginning with the windpipe, branch like a tree, and finally end in millions of microscopic air cells, which are surrounded by capillaries. Here the blood and the air almost come in contact, and the oxygen readily passes through the thin wall into the blood. At the same time, the carbon dioxide which has resulted from the union of the oxygen with the food in the tissues, is given off from the blood to the air. So the air that comes from the lungs contains more carbon dioxide and less oxygen than the air which enters the lungs. And the arterial blood is richer in oxygen than the venous blood.

**Heat Production and Heat Escape.** — In the muscles principally, the changed food unites with oxygen,

forming carbon dioxide (a gas given off in the breath) and water. As a result of this chemical change, energy is set free, part of which is manifested in the muscular action of the body and part is manifested as heat. Even when one is absolutely quiet, there is some oxidation with production of heat.

In cold weather, or when the body is exercising, this oxidative process increases. The increase of waste demands an increased supply of nourishment, and an increased removal of waste. Vigorous exercise increases the heat action and the circulation. This brings more food to the muscles, and the muscular contraction squeezes the tissue spaces and hastens the removal of waste. The rapid breathing or panting is caused by the demand of the body for more oxygen and by the effort to be rid of the increased accumulation of carbon dioxide. The increased circulation brings more blood to the skin, and this helps to remove the surplus heat. In addition, the sweat glands become active and give off water, which, by evaporation, helps to cool the body. Thus the body is provided with a means of heat regulation, which acts in hot weather as well as during exercise.

Nearly all hydrotherapy applications act on the blood circulation through the nervous system, increasing or decreasing the blood supply in a part, as may be desired.

### **Points to Be Emphasized**

The sacredness of the body.

The importance of its proper care, and of a knowledge of the laws of health.

Correct posture as a preservative of health.

Muscular exercise as a means of body building.

Avoidance of drugs, destructive emotions, and other disturbances of the nervous system.

A properly balanced dietary and right habits of eating.

Right breathing methods.

### Demonstration

**Tissues.** — By means of a joint obtained from the butcher (even a chicken's leg will be better than nothing), demonstrate bone, joint, muscle, ligaments, tendons, cartilage; also the action of muscles.

**Skeleton.** — In the arm, show action of hinge joint and of ball-and-socket joint.

**Muscles.** — By means of a faradic battery, show how stimulus causes muscular contraction, applying electrode to middle of forearm.

**Digestion.** — Add a drop of iodine to a rather thin cooked starch paste, turning it deep blue. Hold another portion of starch in the mouth, thoroughly mixing it with saliva, and after a time, upon removal from the mouth, add a drop of iodine. No blue, indicating that the starch has been turned into something else.

**Circulation.** — Show blue veins on back of hand. Contrast with the general color of skin. The veins contain blood poor in oxygen; the capillaries of skin contain blood rich in oxygen. Oxygenated blood is bright red.

Wrap a string tightly around the finger. The finger turns blue, because the oxygen supply is exhausted and no more oxygenated blood can reach the part. If bandages are applied too tightly, this cutting off of the circulation will retard healing.

Demonstrate effect on pulse rate of sitting, standing, and exercising. Any mental excitement will also increase pulse rate, as when a timid person goes to a doctor for examination.

**Supplementary Reading.**— Selections from any good physiology bearing on the subjects presented.

# Old Age and Cancer May Not be Preventable, but THESE ARE



Communicable  
and Prevent-  
able Through  
These Sources

Eye Secretions .....		{ Pink eye Trachoma
Mouth and Nose Secretions	Spray Borne	{ Influenza Bad colds Whooping cough Measles Pneumonia Tuberculosis
		Non-spray borne
Bowel Discharges .....		{ Typhoid fever Dysentery Summer complaint Infantile paralysis Hookworm and other intestinal parasites
Skin .....		{ Itch Lice Ringworm Smallpox Chicken pox
Immorality .....		{ Syphilis Gonorrhea Chancroid
Suctorial Insects .....		{ Malaria Yellow fever Typhus Plague
Animals .....		{ Rabies Tapeworm Trichinosis

Non-communicable, but Preventable .....

- { Violence
- { Poisoning
- { Accidents
- { Occupational diseases
- { Dietetic diseases
- { Alcoholism

— Adapted from Virginia Health Bulletin.

## LESSON II — DISEASE PREVENTION

It costs more to be sick than to stay well. It is easier to keep well than to get well when sick. Many diseases are never entirely cured, their after-effects being manifest in lowered resistance and more or less weakness. The surest way to meet disease is by prevention, and most diseases are preventable.

No disease comes without a cause. Sickness is not directly the work of an unseen power, good or evil; its course, or history, has a definite line reaching from cause to effect. The cause is some violation of the laws of health.

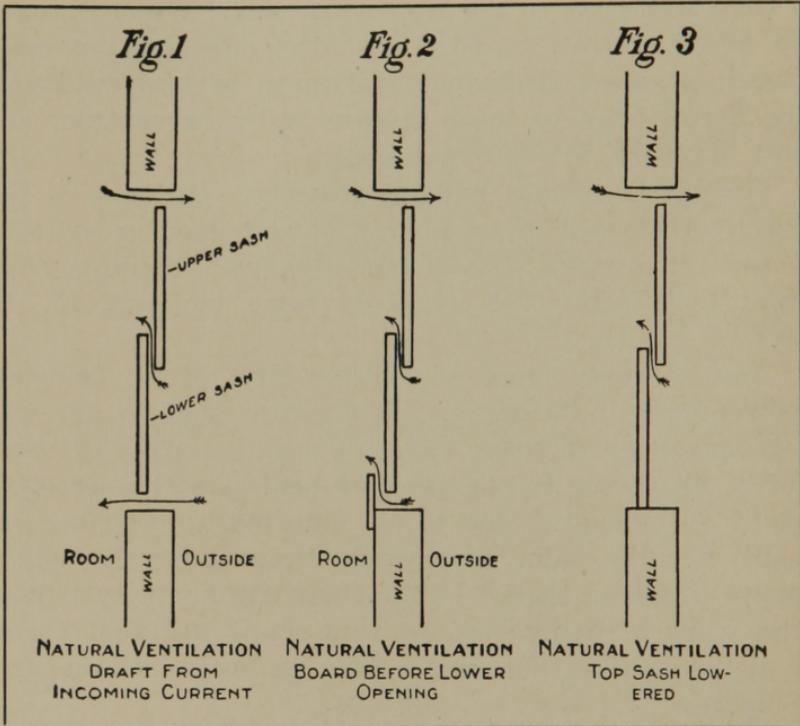
The recovery from any illness first of all demands the removal of its cause. This means that to get well it is necessary to cease violating health laws. In other words, obedience to the laws of health is the secret of health enjoyment. The things one must do to recover health are the same that would keep one well had he always observed them. While there are about two thousand ways of being sick, or that many different forms of disease, the essentials for keeping well are comparatively few.

**Air.**— The first essential of life is air. One can live weeks without food, days without water, but only a very few minutes without air. About twenty respirations a minute are necessary. All outdoors is filled with air, and the lungs are made to breathe it.

The oxygen of the air is the one thing used for purifying the blood as it passes through the lungs, taking up oxygen and giving off the carbon dioxide. If the necessary oxygen is not supplied to the lungs, the blood must retain its impurities; and as it circulates

through every part of the body, the whole system suffers.

Many diseases are caused by breathing impure air. Among the things that deprive us of the benefits of



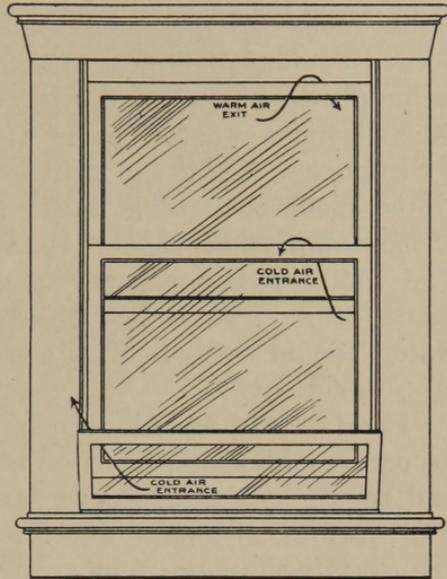
How to Ventilate

pure air, are closed windows, tight clothing that compresses the lungs, a bad posture that cramps the lungs, shallow breathing, poisonous gases, smoke, overheated rooms, air that is loaded with crowd-poison or infected with disease germs. Breathing impure air weakens the body so that it becomes readily susceptible to disease.

Pneumonia is a dirty-air disease. Other common diseases caused by bad air are bronchitis, influenza,

tuberculosis, colds, cough, sore throat, etc. The living-room, bedroom, workroom, and schoolroom should have some means of ventilation, allowing the bad air to escape and the good air to enter.

Where there are two windows, raise the lower sash of one and lower the upper sash of the other. If there is only one window, the lower sash should be raised. A window board five or six inches wide and as long as the window is wide can be placed under the lower sash, allowing fresh air to enter through the opening between the two sashes. A muslin screen may be used instead, which will permit the entrance of fresh air without any draft. Contrary to an old popular notion, night air is not bad



Plenty of Air Without a Draft

air, unless it is last night's air. Night air is usually better than day air, being freer from dust.

One of the principal agencies used in the treatment of tuberculosis is plenty of fresh air; so we see fresh air is one of nature's best medicines. The fresh air that will help to cure disease will help to prevent it.

**Water.**—Pure water is another simple health necessity. It is the common carrier of the body, bringing food in solution to the remotest tissues, and carrying away the dissolved poisons. The purer the water, the more poisons will it carry away. No beverage is so

serviceable as pure water. Indeed, it is the water content of any beverage that quenches thirst. The addition of tea, coffee, soda water, flavoring, or alcohol does not add to the thirst-quenching property of pure water.

More liquid is required in warm weather, when there is active perspiration, than in cold. Six to eight glasses should be taken daily. The water contained in the various foods of the regular diet, helps to supply the needed amount of liquid. Failure to drink enough water to supply the fluids of the body and to help wash away the poisonous wastes, leads to disease.

Impure water is the principal cause of typhoid fever. No cesspool, cow stable, horse lot, privy, or other source of contamination should be allowed near a dug well. The well drains the earth in every direction for a distance of several times its depth. Doubtful drinking water should be boiled. Pure water is colorless, odorless, and tasteless.

**Food.**—An ample supply of proper food, rightly prepared and properly eaten, is essential to the growth and repair of the body and furnishes heat and strength. The various elements of which the body is composed are contained in the foods. All these elements must be supplied to the body for its full development and to maintain it in health. Later lessons will consider diet and nutrition more fully.

**Exercise.**—All the functions of the body are benefited by exercise, and they all suffer from the neglect of it. The perspiration induced by exercise opens the pores of the skin, and thus impurities are thrown off. The small capillaries in the skin are filled with fresh blood, which gives a true complexion no “beauty preparation” can equal. The circulation of blood through the muscles gives them development and tone; unused muscles become flabby and almost lifeless. As the muscles are better developed, the bones are also strengthened,

through increased nourishment and by being held in a normal position. Thus the form and carriage of the body are improved, curvatures, slouching gait, round shoulders, and flat chests being corrected or prevented.

Vigorous exercise calls for vigorous respiration, bringing into use the full lung capacity and giving chest expansion. The increased circulation means increased heart action, by which the heart is also strengthened. The contraction of the muscles in exercise aids the heart in sending fresh blood coursing and tingling through every blood vessel. With the large supply of oxygen in the lungs, the blood is thoroughly purified. The brain gets a liberal supply of pure, fresh blood, thus quickening its action and putting it in better condition for mental work.

Exercise uses up energy, and creates a natural demand for more food. The appetite is sharpened and the digestion strengthened. One who exercises vigorously and judiciously every day can with comparative impunity partake of a diet that would put a sedentary person in bed. Muscular action squeezes the lymph out of the tissue spaces, thereby carrying off waste matter and permitting the arrival of additional supplies of nutrition. Assimilation is increased and the exercised muscles grow. Many persons who are careful of their diet are in poor health because they do not take sufficient exercise. It is probably correct to say that the person who takes no exercise is not in good health. About two fifths of the body consists of muscle. What do you weigh? Can you afford to neglect two fifths of your body?

**Rest.** — Of no less importance than exercise is rest. The tired feeling is a demand for rest. The cells of the body cannot keep up their activities indefinitely. In muscular exercise energy is used faster than it is being restored; tissues are broken down faster than they are

rebuilt; poisons are formed faster than they are eliminated. The soreness felt after a hard day's work or a long walk is caused by waste poison-products of broken-down tissues clogging the system. A night's rest gives opportunity for their removal by the normal action of the eliminative organs, and the soreness disappears. If one is sore after a night's rest, it indicates that the day before was too hard and long or that the rest was too short.

During sleep the body is repaired. All its activities lessen, — less heat is produced, the breathing is slower, the heart beats more slowly, digestion is lessened, the nerves and muscles are relaxed, the entire system is slowed down and the body-building cells carry on recuperative work. If one makes the day's work two hours longer than it should be, the night's rest is two hours too short, making four hours' excess. More than this, the work done after the normal working time is more taxing to the body than that of the normal work time, and the work is also inferior.

Most adults need an average of eight hours' sleep a day. Children need more than this, and babies should sleep most of the time. Persons who lose much sleep are pale because the red corpuscles do not have time for renewal. Loss of sleep adds to the wearing-out processes of the too-long day. Serious ill health follows such a course, if continued.

The early part of the night is best for sound sleep, and the early hours of sleep are the soundest. As sleep becomes lighter, consciousness begins to return and dreaming takes place. One can dream a great deal in a short time, and sometimes persons think they have dreamed almost all night and declare they have had little or no sleep. When sound asleep, one knows nothing, so has no idea of time. Many persons would soon die if they slept no more than they think they do. With

many the fear of sleeplessness is worse than the actual thing itself.

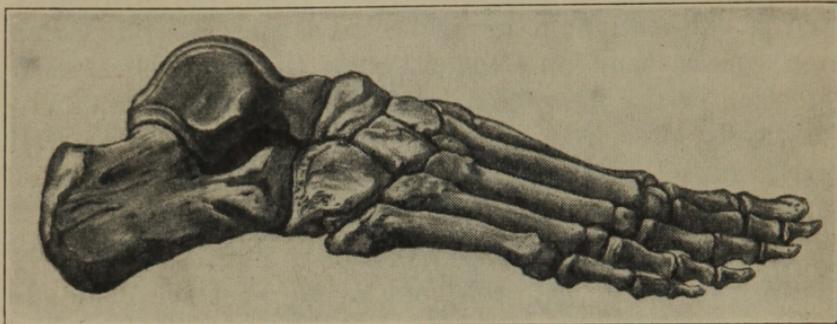
The idea that "a change of occupation is rest" may be overworked. If a person is fatigued, he should not force his energy to exertion of any kind that will cause further exhaustion; a complete rest is needed. Muscular tire is more than an exhaustion of the muscles; it is a depletion of the nervous system as well. And the quickest way to effect restoration is to give the nerves as well as the muscles a rest. Real rest means relaxation of muscles, nerves, and mind.

**Clothing.** — The purpose of clothing is not merely one of "dressing up" the body or to meet the demands of modesty. Clothing is an essential to health, at least in countries where climatic conditions demand it. Wrong kinds of clothing are a larger factor in disease than many suspect.

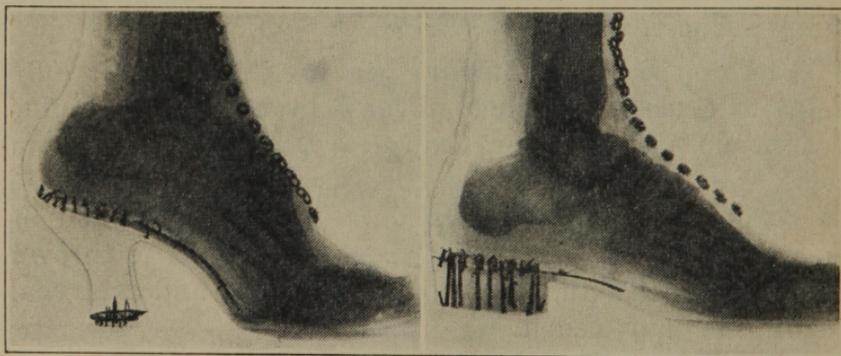
Clothing does not impart heat to the body; it only helps to conserve the heat formed by the body. Lightweight clothing is better than heavy, if it protects from cold. Too warm clothing is enervating. Clothing should be porous to permit ventilation. If the elimination of poisons from the skin is not free, extra work is thrown upon the inner skin, or mucous membrane, and catarrhal conditions may result.

Dry air is a poor conductor of heat, and clothing that is porous or loosely woven and capable of holding considerable air in its meshes, will retain heat. Woolen is porous, and when dry is the warmest of all clothing. It absorbs moisture readily, but can absorb considerable without feeling wet. In cold weather it is better to wear extra outer garments that can be easily removed. Changing underwear by the calendar is foolish; that should be determined by the weather, not by the particular day or month.

Light-colored clothing reflects or throws off the heat of the sun, while dark clothing absorbs it, for which reason the former is better for summer. Rubber clothing prevents moisture from penetrating to the body,



Bones of the Human Foot



X-Ray Photographs Showing Why High-heeled Shoes Menace the General Health  
Notice the cramped and unnatural position of the bones, caused by the high heel.

but it also prevents its escape; it should not be worn indoors. This applies also to rubber shoes.

The internal organs need full freedom for free action. The normal body has no spare room, and if compressed, organs are cramped and forced out of place. The heart, lungs, stomach, liver, and intestines are hindered in their work, and functional disorders arise.

Organs are also forced down, or prolapsed, interfering with peristalsis, or the rhythmic motion of the intestines, causing constipation. Inflammation and displacement of pelvic organs, backache, and headache also result. Normally the abdominal muscles should possess tension enough to hold the organs in place. They become relaxed by being held rigid in tight clothing. Diaphragmatic or abdominal breathing, natural to boys and men, and to girls properly dressed, is also hindered.

The garments should be suspended from the shoulders, allowing unhampered freedom for the use of all the body. This is necessary to the enjoyment and easy performance of work. Clothing suspended from the hips means constriction of the waist and undue weight on the abdominal organs, causing their prolapse. Enteroptosis, or prolapsed organs, is the cause of much suffering among women.

Shoes should have a broad, low heel, a flexible shank, and should feel perfectly comfortable. The feet need a free circulation; they are farthest from the heart, and more liable to chilling from the cold ground. The extremities should be warmly clad. High-heeled shoes are unfavorable to walking, — a splendid health-giving exercise, — and cause displacement of the internal organs by the strained and unnatural posture.

### **Points to Be Emphasized**

Next to a clear conscience, health is the most valuable thing in the world. If we have everything else and do not have health, nothing can take its place.

No kind of medical treatment will correct bad habits. It is normal to be well.

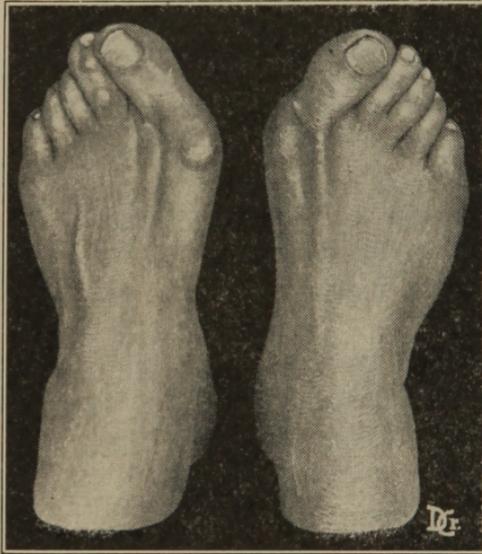
It is better to know how to prevent disease than how to cure it.

The things that cure disease are the things that will prevent it.

To get well we must reform bad habits; otherwise the cure is not a cure.

If the body feels the want of right food elements, nothing will take their place.

The body is a human machine made to run. To keep it in running order it must be used. Exercise is life to muscles.



Effect upon the Feet of Misfit Shoes

In this instance the toes have been squeezed and twisted out of shape.

We gain nothing by robbing ourselves of rest; in time we shall have to pay back.

When the body is tired, it calls for rest; it should then have rest.

When sleepy, we should sleep, and not force ourselves to remain awake.

When hungry, we should eat. Loss of appetite means we should let the stomach rest awhile.

Recreation is recreation.

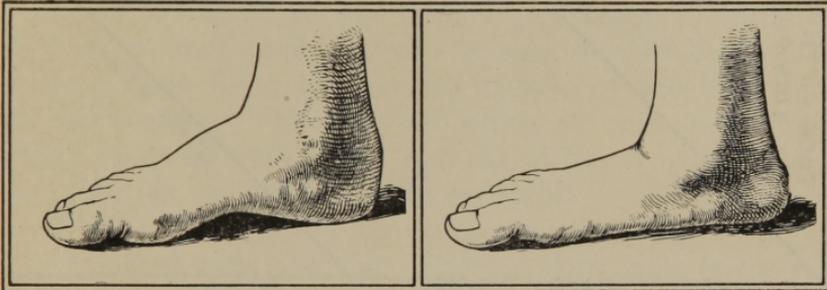
Clothing should be so adjusted that when the arms are raised above the head, all the clothing is lifted.

More than 50 per cent of women sufferers are troubled with prolapsed abdominal organs and disordered pelvic organs, due to improper clothing.

**Demonstration.** — Correct and incorrect breathing. (Let all take part in correct way.) Show need of fresh air by placing an inverted tumbler over a lighted candle.

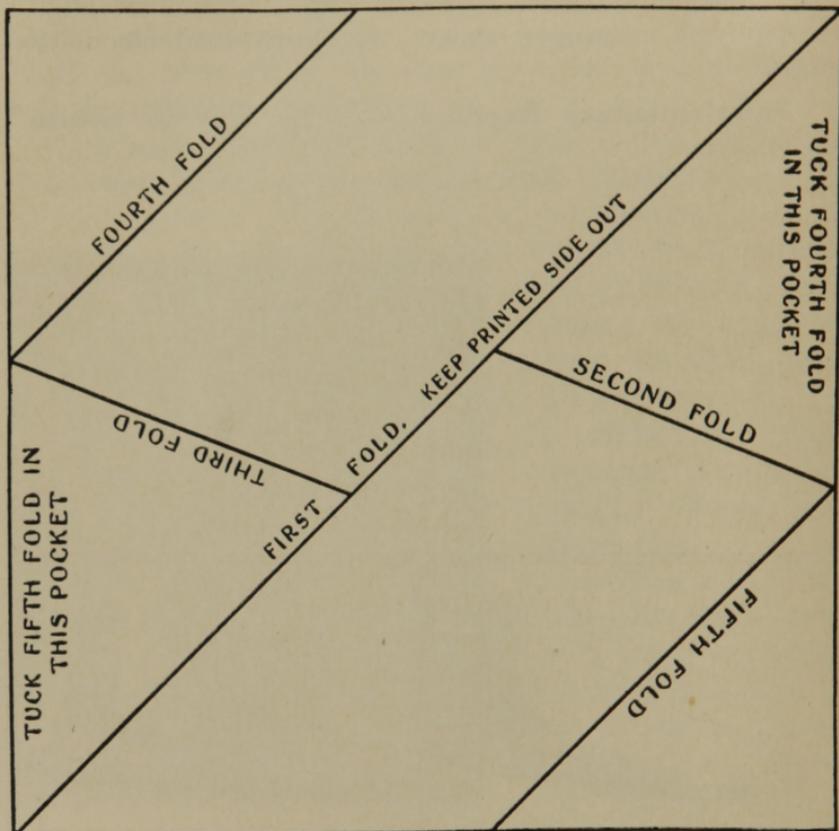
Fold individual paper drinking cup. (See next page.)  
Proper and improper shoes. Explain blood circulation  
chart.

**Supplementary Reading.** — “The Way to Health,”  
pp. 35-50.



A Normal Foot

Foot with a Broken Instep (Flat Foot)



#### INDIVIDUAL DRINKING CUP

Fold a clean sheet of paper, eight or ten inches square, as shown above.

“’Tis a little thing  
 To give a cup of water: yet its draught  
 Of cool refreshment, drained by feverish lips,  
 May give a thrill of pleasure to the frame.”

## LESSON III — HYGIENE

HYGIENE is the study of health, its improvement and preservation in the individual as related to his surroundings. It deals with health conditions of the body, the home, and the community. We study hygiene for the purpose of learning how to fit conditions of life to the body and its health needs. While public hygiene is intended to provide, on a large scale, the conditions suited to health, individual responsibility and personal hygiene come first in importance. Unless individuals give support to public health measures, efforts on a larger scale cannot succeed. Personal hygiene is necessary at all times.

**Body Defense.** — The body is composed of millions of cells so small that they can be seen only in the microscope. They form the various tissues of the body and all its organs. The different kinds of cells have their many kinds of work to do, and the different organs have their duties, or functions, to perform.

Every provision of the body, with all the work of the different cells and the numerous functions, is for the purpose of keeping the body in health. The normal state under normal conditions is health.

Not only is the body prepared in every way possible to maintain health within itself, but provision is made to defend and protect it from attack from the outside. If the natural physical laws and health requirements of the body were observed, health and well-being would be assured, barring, of course, the results of accidents.

**Infection.**— Diseases that pass from one person to another are caused by disease germs. Such diseases are called infectious. The white blood cells are the defenders against disease germs. In health the white

blood cells are able to resist their attacks. It is when the power of resistance falls below the normal point that disease germs are able to overcome the natural body defenders. By finding lodging in the body and favorable conditions of growth, disease germs multiply and form poisons, or toxins, to an extent that overcomes the body. The diseases thus caused usually come suddenly, are limited in time, and are called acute.

A provision of the body is that as soon as such a disease takes hold there begins at once the formation of antitoxins, or antipoisons, for the purpose of overcoming the poison of the disease germs. A certain amount of time is required for this. This is usually spoken of as the time required for the disease to "run its course." In a number of infectious diseases the antitoxins thus formed within the body serve to protect it from future attacks, and the person is immune. Smallpox, scarlet fever, whooping cough, mumps, etc., are examples. This immunity against certain diseases may be established by causing the disease on a small scale, as it were, as in vaccination against smallpox.

**Germ.** — There are many kinds of germs. Most kinds are friendly and helpful, and are necessary. Yeast germs are an example. If it were not for germs, dead vegetable and animal matter would not be converted back to its original elements, but would accumulate on the earth. The proportion of dangerous germs is not large, but their power to do harm is great. Some are more dangerous than others. The degree of danger to the body from disease, or pathogenic, germs depends upon the character of the germs, the number entering the body, and the state of the body resistance. Many healthy persons may have in their throats the germs of pneumonia, diphtheria, tuberculosis, and other diseases, without contracting the disease. They may,

however, impart these germs to persons who are too weak to resist them, and they succumb to the disease.

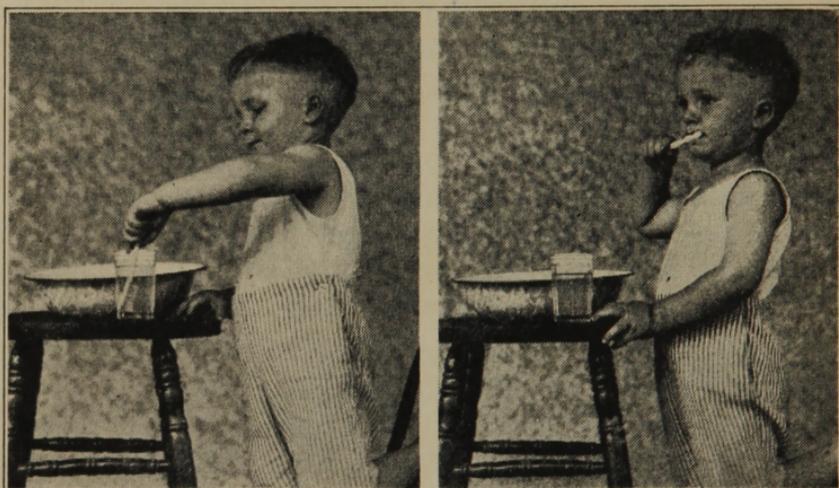
**Mouth Dangers.** — The main entrance to the body for disease germs is by the throat, hence the importance of protecting the nose and mouth against them. As we are constantly touching things that may be infected with disease germs, such as money, door knobs, handles of many kinds, and numerous articles others have handled, we should not put the fingers in the mouth without first washing the hands. Eating food handled by dirty hands or exposed to dust germs or to sick-room germs is a common means of infection. Using public drinking cups, soda water glasses, ice cream saucers, and unclean silverware exposes one to the danger of disease germs left by others, either by hands or mouth. The finger nails may harbor many germs. Clean hands are necessary to protection against disease.

**Disinfection.** — We may destroy germs by disinfection. A thing is sterile when there are no germs on it. Boiling water or dry heat will destroy most germs. Fresh air is a good disinfectant. Sunshine is the best disinfectant. Germs thrive in darkness, warmth, and moisture. Germs are also called bacteria.

**The Teeth.** — Unless properly cared for, the mouth is a favorable place for germ growth. The secretions of the mouth do not have the power to destroy bacteria, as do some others of the body secretions. If bits of food are allowed to remain between the teeth, they, with the warmth and moisture of the mouth, offer good breeding conditions for bacteria.

A rotten apple is a good example of germ action. A polished apple resists rot for a long time. The germs that cause the rot are held in a thin film on the surface of the apple. Polishing removes this film. So with the teeth, a thin film on the surface holds the germs

which cause decay. A cavity in the tooth not only causes pain and prevents perfect mastication, but is a breeding place for millions of germs. The important preventive is the removal of the film—keeping the teeth polished, like the apple, by frequent use of the toothbrush. The best movement in brushing is from the gums to the end of the teeth. The grinding sur-



**BEGINNING EARLY**

**It pays to keep the baby teeth well cleansed**

faces and the inner surfaces should not be neglected. If the tongue is coated, it should be brushed, as should also the gums.

The toothbrush should be well rinsed after using. The brush should not be too broad nor too large, and the bristles should not be spread. It should be discarded as soon as worn or if the bristles become loose. Much harm might result from a bristle's becoming embedded in the mouth or throat.

Bits of food left in the mouth undergo fermentation, forming lactic acid, which attacks the enamel of the

teeth, dissolving the lime salts and leaving the organic matter exposed to the action of the germs. Before long a cavity results. The millions of germs harbored in the cavities of the teeth are a menace to the general health. It is found that the whole system may become infected through the root canals of the teeth, causing digestive troubles, rheumatism, and diseases of the kidneys, heart, and circulatory system.

Another serious infection, now too common, is pyorrhea, or Riggs's disease. This affects the gums, or tooth sockets. It may arise from injury to the gums by a foreign body, or from an accumulation of tartar or lime deposit. As the infection progresses,

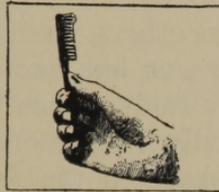
pockets form around the roots of the teeth and the teeth become loosened. Pus is formed continually in these pockets, and is forced into the general circulation by the pressure of chewing upon the loosened teeth. These pus pockets, or abscesses, are thus a source of constant infection to the general system. It usually requires an X-ray examination to detect these abscesses.



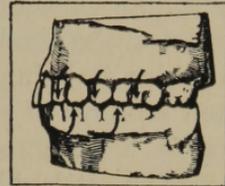
Hold of Brush for  
Right Side



Direction Brush Should  
Travel on Right Side



Hold of Brush for  
Left Side



Direction Brush Should  
Travel on Left Side  
and Front Teeth



Hold of Brush for Inside  
of Upper Teeth



Hold of Brush for Inside  
of Lower Teeth

#### HOW TO BRUSH THE TEETH

It is highly advisable to make periodic visits to the dentist for examination and cleaning of the teeth. Some hard food that requires considerable chewing, should form a part of the diet; teeth need exercise.

**Skin.** — The skin is another important organ of elimination. From it there seeps out about a quart of water a day, containing certain impurities. This, with the oil secreted by the sebaceous glands and the outer layers of the skin which are shed, makes it important that the skin be cleansed by frequent bathing. Some persons' perspiration becomes readily offensive; while they may not themselves be able to detect it, others can and do. Needless to say, an ill-smelling body odor is most disagreeable to others, and is occasion for an individual's being more or less avoided. No one cares to tell another of such a fault; hence the importance of each one's looking carefully to personal cleanliness.

The little blackheads in the face skin are hardened oil and dirt. In the nineteen square feet of skin of the average person, are 2,400,000 sweat glands, besides many blood vessels, nerve fibers, and muscles. An invisible perspiration is present all the time. Heat and exercise cause the perspiration to escape in larger quantities, and it becomes visible, sometimes called sweat. Evaporation of this moisture cools the body.

If the skin lacks tone, the body is easily subject to colds and various other maladies. The skin may be trained or toughened by cold air and cold water. A cool bath gives the skin muscles exercise. Frequent bathing is advisable both for cleanliness and for its tonic effect on the skin. The daily cool or cold bath or shower is a valuable means of protection against cold. Sunlight has very beneficial effects on the skin.

The underclothing should be taken off each night and allowed to air. On getting out of bed, turn back the covers for airing.

**Eyes.** — The relation of the eyes to the general health is close, each affecting the other. A few of the principles of the care of the eyes are these: Hold the head erect when reading; hold the book or paper fourteen inches from the eyes (the closer objects are held to the eye, the more muscular strain there is); hold the book on a level with the eyes; light should come preferably over the left shoulder; do not read while lying on the back, as this causes an extraordinary strain. Trying to read when sleepy is harmful. Reading while riding in jolting cars is injurious, requiring constant adjustment of the eyes to the moving type. Bathe the eyes well each morning. Do not dry them with a soiled towel or cloth. Do not rub them with the bare hands. Do not read or write too long at a time; the eyes need rest.

**Home.** — All should help to keep the home clean, sanitary, and healthful. Carry into the house as little dirt as possible. Clean the shoes before entering. Brush the clothes out of doors. If using a broom for sweeping, open the doors and windows; don't merely stir up dirt to be breathed. A cloth wrung out of water containing a little kerosene will remove dirt effectively.

The furnishings should be simple, avoiding dust-catching upholstery and curtains, and having a minimum of bric-a-brac that requires frequent handling. The fewer there are of dust-catching objects, the better. Rugs are better than carpets. For furniture, leather or some substitute for it is better than plush, and plain cushions are more easily kept clean than those which are quilted or are tacked with buttons or tufts. It is better to plan for health-keeping than too much house-keeping.

The house should be as nearly fly and mosquito proof as it is possible to make it. Use window and door screens. Swat flies early and late. Keep all gar-

bage cans covered. Flies breed in filth and are germ carriers. Fliespecks may contain disease germs, which are not destroyed in passing through the fly. One single fly has been known to carry over 6,000,000 germs. Typhoid fever is often spread through the medium of flies.

**Posture.** — Whether the household duties are overwearing, and taxing to the strength and health, or done with comparative ease and even with benefit, depends much on the posture assumed. Many of the motions involved in sweeping, bed making, etc., are just as good as physical culture movements in the gymnasium, and perhaps even better. Rightly performed, they prove health developers.

Sit erect when peeling vegetables. Stand erect when carrying loads. Hold an erect posture when going up or down stairs. When bending over work, don't bow the back but bend at the hips. At first one will find it somewhat difficult to hold the right posture if not used to it, but with the strengthening of the muscles by exercise it will become natural and easy. With stronger muscles in back, abdomen, chest, and legs, all work will be done with more ease. The general health will benefit by the strength thus given the entire body.

### **Points to Be Emphasized**

Sunshine and fresh air are health preservers.

A sound body is the best defense against communicable diseases.

Hygiene stands for health.

The body is prepared to keep in health if given a chance.

Every function of the body is a health-keeping provision.

When disease attacks one, his entire body turns to the task of getting well. It may be necessary to put the body

in bed awhile in order that it may devote all its energies to getting well.

A mild case of contagious disease may give some one else a severe case. Look out for the mild case. The body knows how to fight disease; help it, don't hinder it.

The entire mouth should be kept clean.

The teeth are worth good care. Many cases of chronic indigestion result from poor mastication on account of missing teeth.

The better care you give your teeth the less care will they need from the dentist.

What is home without health?

Flies as well as bad water spread disease.

Flies in the dining-room may mean nurses in the bedroom.

A fly in the milk may mean a member of the family in the grave.

Flies follow filth. Fever follows flies. Swatting saves sickness.

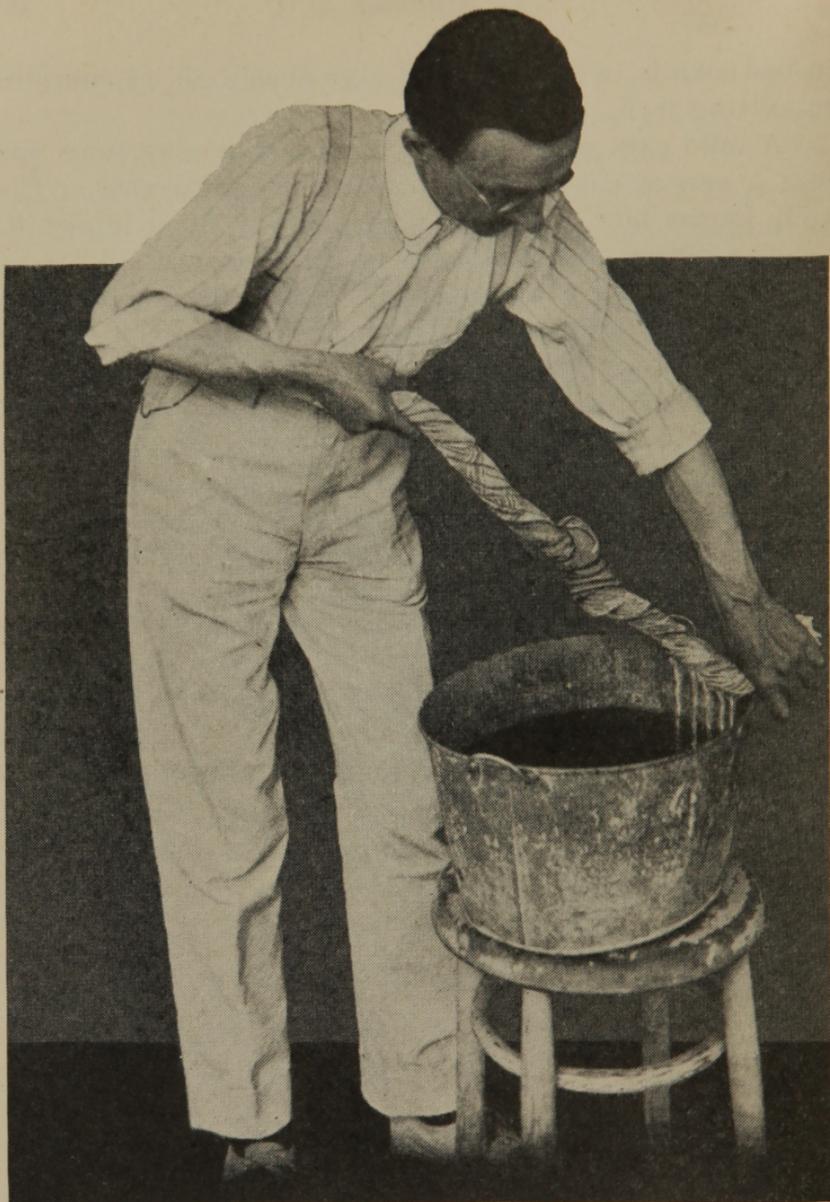
**Demonstration.** — Methods of ventilation; proper sweeping and dusting; proper postures in standing, sitting, and at various household duties; brushing teeth, proper brushes.

**Supplementary Reading.** — "The Way to Health," pp. 13-32, 64-69.

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TRUE love begins at home, and, reaching thence,  
 Twines sympathetic arms round all our race,  
 And fills our interval of time and sense  
 With airs from heaven, its native dwelling place.

— T. R. Williamson.



#### WRINGING THE FOMENTATION

The ends of the cloth are kept dry, only the middle portion being dipped in the boiling water. By holding one end against the edge of the tub and elevating the other, the cloth may be wrung without wetting the floor or scalding the hands.

## LESSON IV—PRINCIPLES OF HYDROTHERAPY

THE value of water in the treatment of disease, or hydrotherapy, is becoming more and more recognized. Of all "therapies," this is probably the one most likely to come into household use. It often accomplishes results not easily obtainable, if at all, by any other means. It should be borne in mind that very definite and positive effects are possible through the use of water treatment, and that great harm may be done as well as great good. The more skill one possesses in its use, the better. No unskilled person should undertake to administer treatments that are complicated or that involve danger to the patient.

**Properties of Water.**—One of the chief values of water is in its property of communicating and absorbing heat. Water has a large storage capacity for heat. Hot water readily gives off heat, and cold water will absorb it in large amounts. This means that hot water is most valuable for applying heat to the body; and that cold water will absorb heat from the body, cooling the skin and other tissues, and thus reducing fever.

The solvent properties of water are valuable both without and within the body. The value of water as a cleanser is perhaps better known in its external application than in its internal use, though the latter is of great importance. Free water drinking is beneficial largely because it aids in dissolving the poisons of the system and in eliminating them. Any physiological solvent owes its solvent property to the water that it contains.

The availability of water lends to its value for treatment purposes. It is nearly always accessible. It is usable in all its various forms. While its largest use is in liquid form, both ice and steam find a place.

**Temperature.** — The temperature of water, ranging from freezing to steam, plays an important part in therapeutic results, and sometimes the application of heat and cold through the agency of water is the principal remedy. The ease with which the temperature can be accurately and definitely controlled is of great value.

The usual classification of temperatures is as follows:

Very hot .....	104° F. and above
Hot .....	98° to 104° F.
Warm (neutral 94° to 97°) ....	92° to 98° F.
Tepid .....	80° to 92° F.
Cool .....	65° to 80° F.
Cold .....	55° to 65° F.
Very cold .....	32° to 55° F.

A reliable water thermometer, registering up to boiling point, is needed for regulating the temperature of all baths. Do not trust to guess or to the test with the hand or elbow.

Remember that while water has its advantages for therapeutic purposes and its beneficial properties, it may also become a destructive agent and a means of great harm. Do not act on the principle that water treatment can do no harm, even if it does no good, or think that "simple treatments" means such simplicity in application that no particular skill or care is required, and that just anybody can give them. While its use is usually not so dangerous in the hands of the unskilled as is the use of drugs, it requires a certain amount of knowledge and skill to secure beneficial instead of harmful results.

In serious ailments, hydrotherapy should be administered only under the direction of competent medical

authority, and by those qualified to use it intelligently. More water treatments would probably be prescribed by physicians if they knew they would be properly given by the nurse or mother: the fear of serious results deters them. As hydrotherapy comes to the front more and more as a valuable curative measure, useful in many conditions, it would be well to give greater study to its use, both for ourselves and for others. But with the spread of its use the possibility of harm through its misuse becomes greater. Popularity does not change the nature or laws of operation. The uniform action of water is one of the things that makes it so dependable. This uniformity does not vary to suit the ability, or the lack of ability, of the user. All of which suggests the importance of thorough study, and careful use of hydrotherapy.

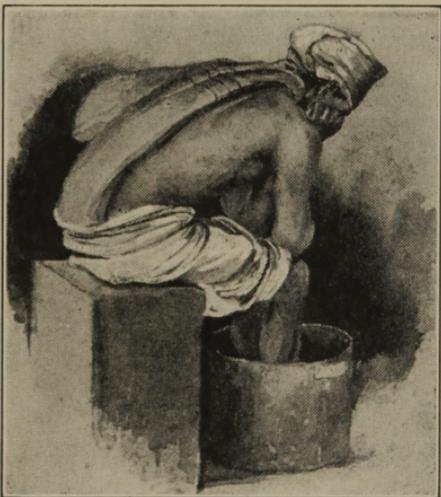
Water is not the only remedial agent. Neither is it a cure-all. It is one among a number of valuable aids in the treatment of disease, and is one of the most important.

**The Fomentation.** — The fomentation, or hot compress, is for the application of moist heat to local areas of the body. It is one of the most common of home treatments, the use of which is quite simple and can be followed almost anywhere. It is usually given by wringing cloths out of boiling water, though it may also be applied by various other means; as, for example, by wrapping a hot brick, a hot stone, a bag of hot sand, a hot stove lid, or some other hot article in moist cloths, or even in wet paper. The object is to secure a moist heat at as high a temperature as can be borne by the body.

Every household should possess a set of good fomentation cloths. A half-wool-and-half-cotton single blanket, not necessarily new, is excellent material for the pur-

pose. It should be divided into four parts, two cloths to be used wet and two dry. Discarded underwear, an old shawl, or other similar material may be used. Wool-and-cotton mixture goods are best, the wool serving to retain the heat, and the cotton preventing too much shrinkage. Turkish towels may be used if necessary, but are not so good as mixed woolens.

A vessel sufficiently deep to contain enough water to entirely cover the cloth is needed. When heat is avail-



Hot Foot Bath; Fomentation to the Spine;  
Cold Compress to the Head

able near the patient, it is best to wring the fomentation cloths directly from the kettle or other vessel in which the water is kept boiling. It may, however, be necessary to carry the water in a pail to the patient's room. Cover the pail to retain the heat, and protect the floor from the heat.

Where necessary to give the treatment away from the place of wringing out the fomentation cloths, they may be kept

hot by twisting them very tightly and packing them closely together in a pail. The pail should be lined either with heavy paper or dry cloths, and kept covered. Thus the fomentation cloths may be kept hot for some time.

When ready for the application of the fomentation, spread a dry cloth on a flat surface, as a table. It is best to use the same cloth or cloths for the dry, and the others for the wet. In wringing the wet cloth, first

fold it loosely, hold by each end, and place the middle part in the boiling water. Wring over the vessel by twisting tightly and then pulling. Placing the left hand just outside the vessel, allowing the cloth to rest on the edge, will let the water run into the vessel at the edge without burning the hand, when the cloth is pulled. The cloth should be long enough to keep the ends dry. Short cloths may be wrung by placing them in a towel and then twisting. Keep the wet cloth twisted tightly until ready to fold within the dry one, and work quickly while doing it.

The size of the fomentation should be several inches larger than the part to be treated. If for the spine, make the fold about six inches wide and long enough to extend the full length of the spine. A fold more nearly square should be used for the stomach and abdomen.

After folding the wet cloth within the dry one, double it on itself so as to retain as much of the heat as possible. Unfold only when the fomentation is applied to the patient, without removing the wet cloth from the dry one. When placing the wet cloth within the dry, allow one thickness of dry blanket on one side, and two or more on the other. At first the patient will be sensitive to the heat, and will bear the double thickness of dry when the single thickness would be too hot. Soon the cloth may be turned over, using the single thickness. Keep a towel or other covering over the entire cloth to help retain the heat.

A fomentation should be hot to be effective; in fact, a fomentation is not a fomentation in the true sense of the word if it is not hot; it becomes a compress. It should be changed as soon as it becomes cool, or comfortable to the patient. In other words, it should not be allowed to become too comfortable. Harm may be done by using cloths that are only warm, or by allowing hot cloths to become cool. One way of securing the full

benefit of the heat is to leave the dry cloth on the patient, simply opening it to permit exchanging a newly heated cloth for the cooler wet one. When thus used, the wet cloth is not untwisted until it is placed directly within the dry cloth covering the part treated. The thicker the wet cloth, the longer will the heat be retained. The changes should always be made quickly, and with as little exposure as possible of the part treated. Use care against chilling the patient.

Special care should be taken to see that the wet cloth is wrung dry, as the retention of water increases the danger of burning the patient. Many serious burns have been thus caused. Great caution should be exercised when treating parts that are paralyzed, and when treating unconscious or helpless patients. Protect bony prominences, which are most susceptible to burning.

By alternating applications of cold with the hot cloths, a more intense effect is derived. After each application of the fomentation, apply a towel wrung out of cold water, then dry quickly and apply the next fomentation. The application of cold should be very short, not over thirty seconds. It may be by the hand dipped in cold water, the colder the better, or a few strokes with ice may be given. The hot fomentation cloth should be ready to be applied as soon as the cold has been given. This is important.

Usually three applications are given, the whole treatment lasting from fifteen to thirty minutes. The duration of each application is from five to ten minutes, according to the degree of heat and the manner in which the patient bears it. Persons accustomed to taking fomentations can bear them quite hot. At the close of the treatment, quickly apply cold to the part treated, then dry thoroughly, and cover.

The fomentation is a most valuable means of affording relief from pain, acute or chronic. As the applica-

tion should be very hot to give relief, special care should be taken to prevent burning the patient. Wring the fomentation very dry. Use an extra dry covering if necessary. For deep-seated pains, such as abdominal or pelvic, longer treatment is required, from twenty to thirty minutes. The treatment may be repeated, if necessary, after an interval of an hour or so. In some cases of acute pain the application aggravates the trouble, and should be omitted.

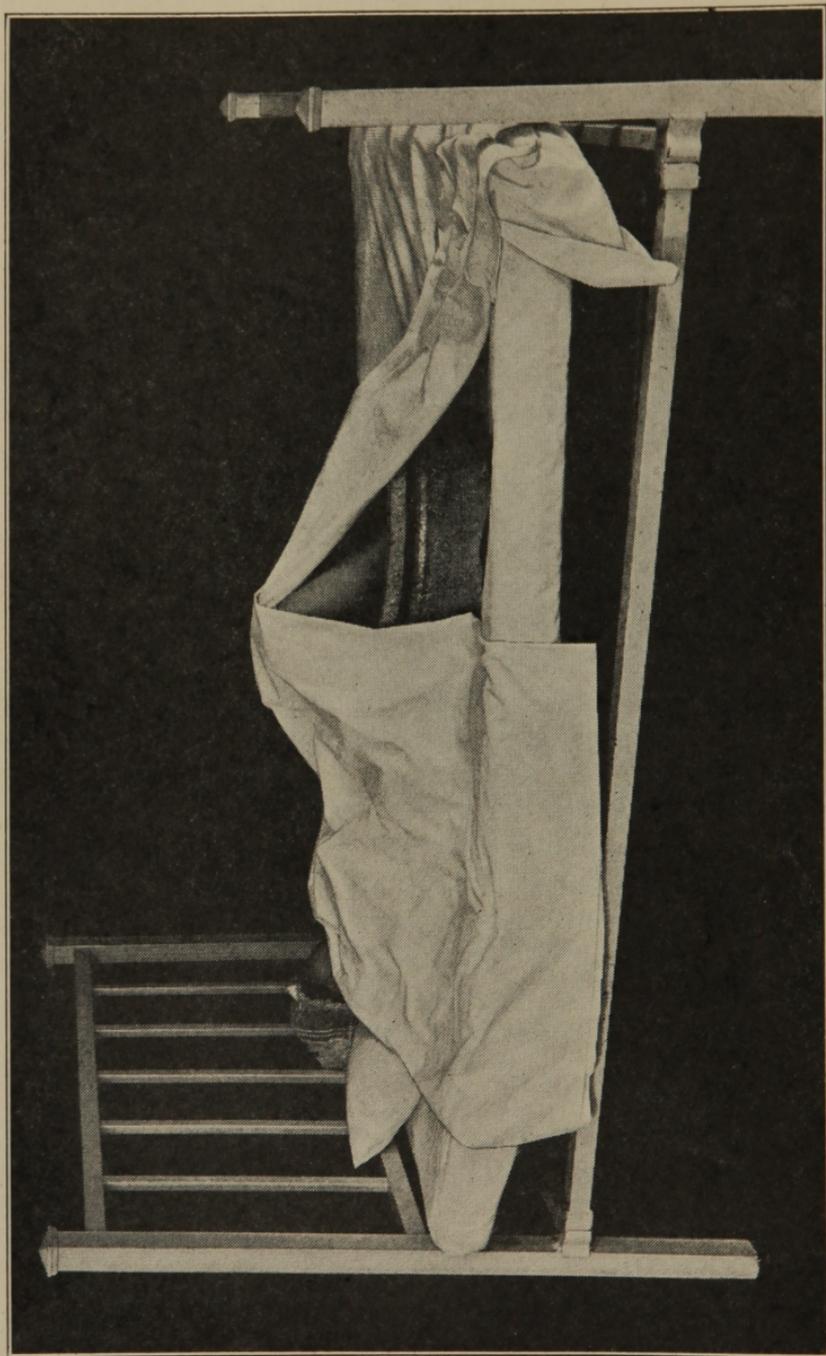
In acute inflammation of the surface tissues, such as may be caused by bruises, make short applications of fomentations, the entire treatment lasting from five to ten minutes. Repeat the treatment every two or three hours, using cool compresses in the interval.

Meningitis is an example of a disease in which the application of heat should be very short, not more than three to five minutes for the entire treatment.

For sedative or soothing effects, fomentations to the spine, applied moderately hot and more prolonged, are used. If the patient is to remain in bed, the cold application usually following the treatment may be omitted, but the surface should be thoroughly dried. Do not use covering heavy enough to prolong the perspiration.

**The Foot Bath.**—Another useful treatment is the hot foot bath. It is valuable in breaking up a cold, in relieving headache, in dispelling chilliness, and is sometimes effective in insomnia by drawing the blood from the head to the extremities. The foot bath may be given in bed, in which case the bed should be properly protected with newspapers, a piece of oilcloth, or a rubber sheet. A covering should be thrown over the knees and legs during the treatment. The vessel used should be deep, and large enough to hold the feet comfortably, the water reaching at least to the ankles.

When the foot bath is given to the patient sitting in a chair, a covering should be thrown over and around



**GIVING A HOT FOOT AND LEG BATH TO A HELPLESS PATIENT**

The sheet and blanket are thrown back to show the tub. Newspapers spread beneath the tub protect the bedding

the legs and foot tub to protect the patient from chilling.

The temperature of the foot bath should be about 105° F., and may be raised as high as can be borne by gradually adding hot water. If the foot bath is given for more than five minutes, apply a cold towel to the head or neck, or both. It may be continued as long as thirty minutes. At its close, the feet should be cooled by a short application of cold water, and then thoroughly dried. Always take pains to dry well between the toes.

**Leg Bath.**—The hot leg bath is given in much the same manner as the foot bath, except that a deeper vessel is used, and the water should reach nearly up to the knees. This must be given while the patient is seated, using a stool two or three inches higher than the receptacle. The patient should be well covered. Begin the leg bath with a temperature of about 105°, gradually raising it.

### **Points to Be Emphasized**

Hydrotherapy affects in a marked manner the working of the heart, blood vessels, digestive apparatus, brain, and other organs, by the application of heat or cold or both.

Hydrotherapeutic treatments include the fomentation, compress, pack, spray, bath, sponge, and friction, for external application; and the enema, coloclyster (high large enema for flushing of the colon), douche, and gastric lavage (stomach wash).

Only the simpler treatments should be undertaken by the unskilled, and these should be administered with care and caution.

Wrongly applied, water treatment may cause serious damage. Rightly applied, it is one of nature's most efficient agencies.

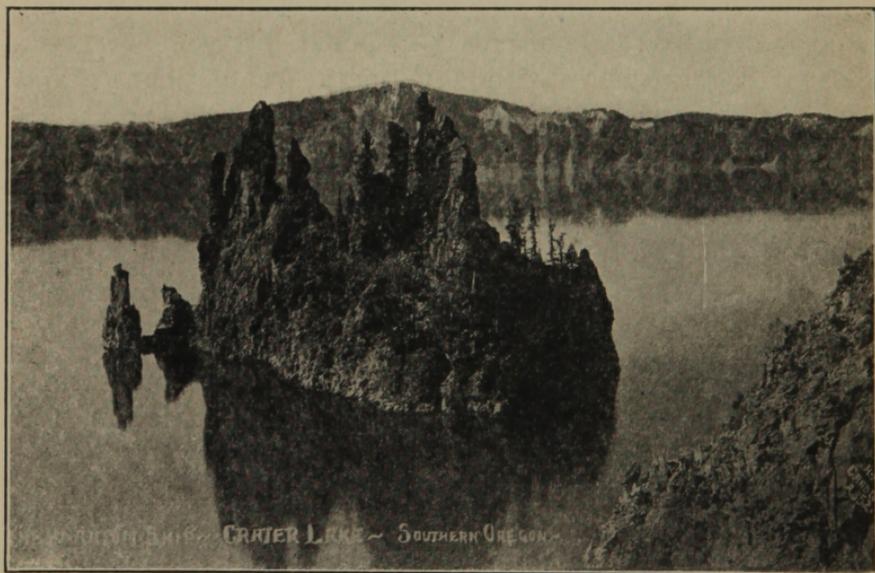
Water is recognized as nature's medicine, whether taken internally or applied externally. As it is found everywhere, its use is readily available.

Varying temperatures have different effects.

There is no such thing as a cold fomentation.

**Demonstration.**— Fomentations; foot bath.

**Supplementary Reading.**— “The Way to Health,” pp. 457-464, 469, 470. “The Ministry of Healing,” pp. 127, 237.



THE PHANTOM SHIP IN CRATER LAKE, SOUTHERN OREGON

## LESSON V — PRINCIPLES OF HYDROTHERAPY

*(Continued)*

THE body is very sensitive to changes of temperature in the skin, whether local or general, and reacts in a marked manner to such changes. A draft on the back of the neck is followed by a sneeze. Colds and many serious ailments are caused in part by temperature changes on the skin. Cooling the skin a few degrees causes the strong muscular action we call shivering. General increase in the skin temperature increases the blood supply to the skin and produces sweating. Long exposure of the surface of the body to heat causes heat prostration. These examples will give an idea of how profoundly the bodily health may be affected by hot and cold applications to the skin, and will suggest that water treatments are capable of producing marked effects on the body, and if injudiciously used may result disastrously.

**Nerve Impulses.**— By means of the nerves, the sensory impressions (the detection of heat or cold) on the skin are transmitted to the nerve centers, and from these, impulses are sent out, which either increase or decrease the action of certain parts or organs. For instance, the heart may be stimulated to do increased work, or its work may be decreased. There is no remedy known, certainly no medicine, which will affect the activity of the heart so quickly and so decidedly as the application of cold water to the body.

There are millions of nerve endings in the skin. These are connected with nerve fibers and nerve trunks running to the spinal cord or brain. Nerve impulses

are sent over these nerves in the skin or in the nerve trunks to the spinal cord or brain. The application of cold to the body stimulates these nerve endings in the skin, and nerve impulses are set in motion which travel to the nerve centers. These nerve centers are affected in their activity by these impulses. A cold bath will stimulate the nerve centers controlling the heart, and thereby cause that organ to beat more forcibly. The activities of other organs — the stomach, liver, kidneys, lungs, intestines, etc.—are also affected by this transmission of nerve impulses started by applications to the skin.

**Reaction.**—The first effect of a cold application is to contract the blood vessels in the skin immediately under the application, causing the skin to blanch, the blood being diverted elsewhere. If the application is brief and the patient is vigorous, there will follow a dilation of the contracted blood vessels, with increased blood flow, causing the skin to glow. This is the reaction.

A cold bath should be short, so that the body will not chill too much. When a general cold application is not followed by reaction, the effect is injurious. If the hands and feet remain cold, the cold bath or treatment was too long or too vigorous. Every application of cold should be followed by immediate reaction. A general reaction to a general treatment in which cold has been used involves marked physiological processes. While this general reaction is usually the object sought, more than one reaction during a treatment should not be experienced.

Reaction after cold is favored by the following:

1. Patient in warm room, or protected by blanket.
2. The preceding hot treatment.
3. Very brief applications of cold.

4. Application to a small portion of the surface at a time.

5. Mechanical irritation with the cold (friction or strong spray).

6. Vigorous friction while drying.

**Tonic Treatment.**—A cold tonic treatment, when properly given, is followed by a reaction, shown by the reddening of the skin and the quickening of the body functions with an increased feeling of well-being. If applied so that there is no reaction, the treatment is depressing rather than tonic.

**Cold Treatment.**—This should be brief, and should be followed by vigorous rubbing until the circulation is well established. The body may be trained to develop its powers of reaction by increasing the length of the cold application and reducing the temperature.

For the feeble patient the treatment should be carefully graduated. At first apply the cold to only a portion of the body at a time, the rest being warm and protected. The wet hand rub, cold mitten friction, wet towel rub, and sponge bath are examples of such treatment. As the patient gains strength, the cold may be applied to the entire body. Sprays, tub baths, plunge baths, at first preceded by hot treatment, later without the hot treatment, are examples of tonic treatment. By gradually increasing the severity, tonic treatments may advance with the increasing strength of the patient until he can react to the most severe cold treatment.

Tonic treatments, properly graduated, are of advantage in all run-down conditions, where the functions of the body are below par.

**Eliminative Treatment.**—The elimination of impurities from the body may be greatly assisted by free perspiration. Treatment for this purpose may be given by the cabinet bath, blanket pack, dry pack, hot full

bath, and various other packs and sweating measures. The caution already given about using care in giving treatments with which one is unacquainted, should be here observed. In all these treatments the head should be kept cool by the application of a wet towel. An effective measure for cooling is to wrap a wet towel around the neck.

**Derivative Treatment.**—This treatment is for the purpose of relieving congestion in one part of the body by drawing the blood elsewhere. Examples are the foot and leg bath, leg pack, hot trunk pack, and sometimes the fomentation.

**Reflex Treatment.**—Certain areas of skin are in reflex relation to certain internal structures. The skin over the heart, the stomach, the intestines, the liver, or the pelvic organs, is in reflex relation with these organs. A cold application to the surface will relieve congestion in the internal organs. Such treatments are sometimes used in connection with derivative treatments. For example, an ice bag over the appendix causes reflex contraction of the blood vessels of the appendix, and a hot leg pack or a full pack to draw the blood to the surface, is useful. The influence of this reflex action is lost after a time, so that once, say every half hour, the cold should be replaced by one fomentation, which will renew the reflex influence of the cold.

**Relief of Pain.**—In general, for very superficial pain, as a bruise, a cold compress is preferable. For a deep-seated pain, hot fomentations should be used.

**Heat and Cold.**—To encourage circulation in a part, alternate hot and cold applications are very efficient. Heat is applied by a fomentation of the usual length, and then cold is applied by a cold compress—several folds of cloth, cheesecloth, or towel, wrung out of cold water. The cold is allowed to remain on from thirty seconds to a minute. The treatment should end with the

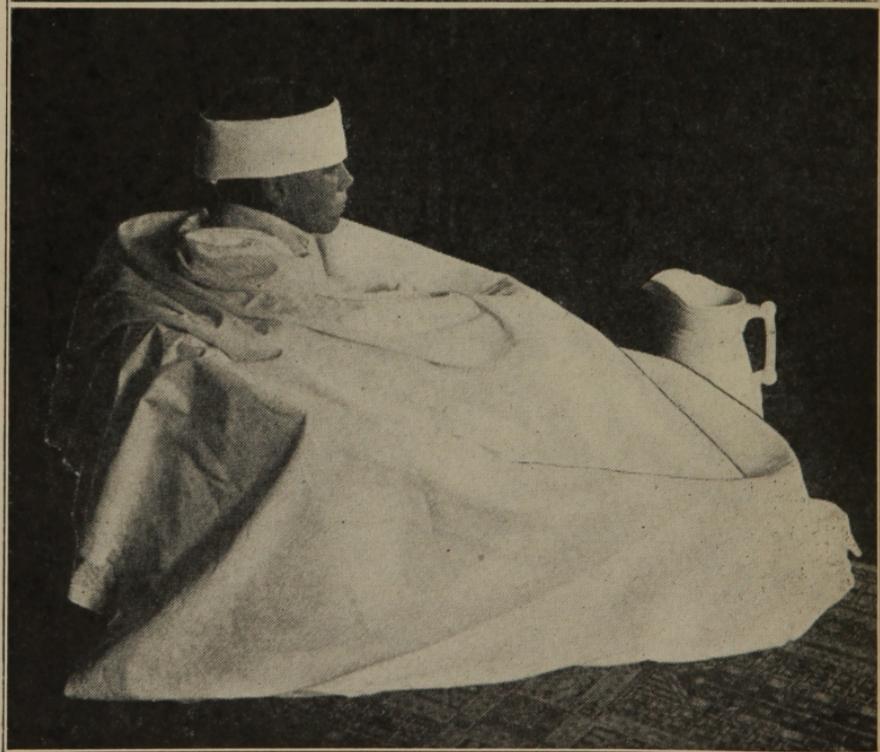
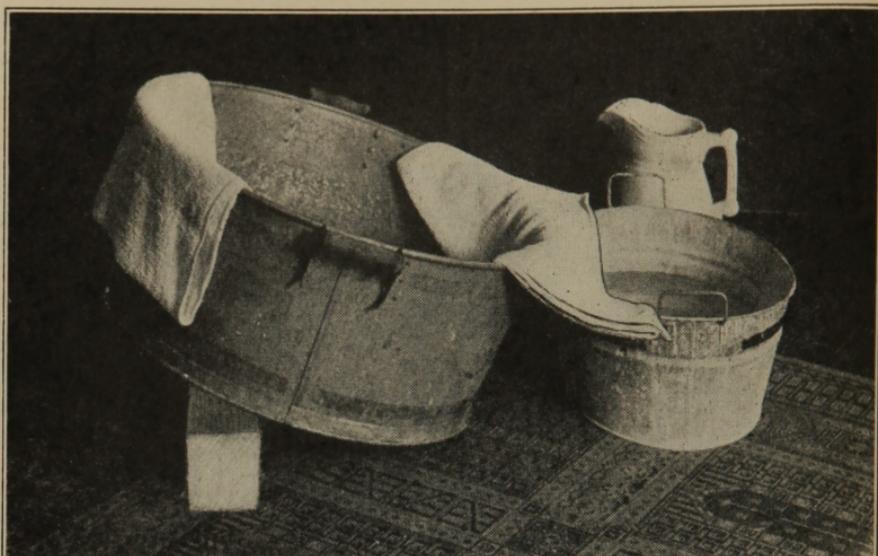
application of the cold. The heat dilates the blood vessels, allowing an extra supply of blood to flow through the part; the cold causes a sudden contraction, forcing the blood out of these vessels into the general circulation, and carrying away the waste. When the heat is again applied, the blood vessels dilate, and the part receives a fresh supply of blood.

**Compresses.**—The cold compress is the local application of cold as given above, except that the heat is not used. Ice water or cracked ice wrapped in a towel or placed in an ice bag, may be used. The cloth should be wrung dry. Very cold applications should not be allowed to remain on a part longer than a half hour at the most without using a hot application or friction to prevent too much chilling of the parts.

The heating compress is a cold compress covered with a dry cloth and allowed to remain on the part until it is warmed. Ice is not to be used, though ice water may be used if the patient is not too delicate. The cloth should be wrung dry.

**Sitz Bath.**—The hot sitz bath is excellent for the relief of local inflammation; for pelvic, rectal, or abdominal pains; and to overcome the retention of urine. It is also effective for producing perspiration.

Where a regular sitz bath is not available, an ordinary washtub may be used. One side should be raised a few inches by a block of wood. The foot bath is given in connection with the sitz. Place a towel over the edge of the tub to protect the knees from contact with the tub, and another over the edge of the tub at the back of the patient. When given to produce perspiration, the temperature of the water should be about 100°. Seat the patient in it for a few minutes, and then add hotter water, and continue until the temperature is as high as the patient will bear. A blanket or comfort, or merely a sheet if the room temperature is warm enough, should



COMBINATION SITZ AND FOOT BATH, WITH COLD COMPRESS TO HEAD

be drawn about the patient, including tub and pail. Keep a wet towel on the head. Hot water drinking will encourage sweating. The bath may be prolonged from ten to thirty minutes, but should be stopped at once if the patient complains of faintness, especially if accompanied by shortness of breath. Conclude the bath by adding cold water, first removing some of the hot water from the tub. The patient should be properly cooled and carefully dried, being at all times protected from drafts and from chilling.

**The Enema.**—While this is a rather common treatment, there are points to be observed in order to make it fully beneficial. The enema should not be relied upon habitually for moving the bowels. As it usually gives immediate relief and is a simple measure, its use can easily become a habit. By proper diet and careful bowel training, it may be needed less frequently, and possibly be dispensed with altogether. The hot enema is valuable for the relief of pain in the lower bowel, in diarrhea and dysentery, for irritation or pain in the rectum, and in case of much gas in the bowels. The temperature should range from 103° to 110°. A small injection of cool water should follow the hot enema in order to restore tone to the bowel tissues. In case there is pain, it may be omitted.

For cleansing purposes, the ordinary enema at a temperature ranging from 95° to 100° may be used. This is used when it is necessary to inject a quantity of water. The addition of two and a quarter teaspoonfuls of common salt to two pints of water will help to prevent griping, and the addition of soapsuds will make the enema more effective for cleansing purposes. Frothy soapsuds, however, should not be used, on account of the air that would be injected into the bowel. Use a pure white soap. An enema of plain water should follow the soapsuds enema.

The knee-chest position, with the patient on knees and the chest nearly level with the knees, will facilitate the flow of water to the highest point possible in the bowel. Another favorable position is lying on the left side, with knees well drawn up. The enema can, or fountain syringe bag, should be hung from two to three feet higher than the patient. The flow of water will be too strong if the receptacle is hung too high, thus inducing premature action. The first tube length of water should be run off, allowing the air as well as the cool water in the tube to escape. By pinching the rubber tube to stop the flow when there is a desire to relieve the bowel because of the peristaltic pains caused by the injection of the water, the inclination will be overcome, and more water can be injected. By proceeding carefully and slowly, a large quantity of water may thus be given to persons who think themselves unable to retain any considerable amount. Withdraw the tube carefully.

A point to be carefully noted, and one not generally observed, is this: Warm water introduced into the bowel dissolves the retained mass of matter, permitting the poisons to be readily absorbed. Often on this account the enema is followed by headache or other unpleasant effects. To avoid this, give repeated injections, if necessary, to secure a thorough cleansing. As the warm water relaxes the bowel tissues, a cool enema at a temperature of 65° to 70° should follow the warm.

The cool enema is also valuable for reducing fever. When given for this purpose, the water should be retained as long as possible, the temperature ranging from 65° to 80°.

### **Points to Be Emphasized**

Applications of hot or cold water affect more than the surface of the body.

The skin is like a great keyboard, with many nerve endings, upon which we can play, as it were, to affect various internal organs and their action.

Cold is stimulating, if it is not too prolonged.

The purpose of cold treatment is to secure a tonic reaction, and without the reaction the treatment is injurious rather than beneficial.

Very few persons can stand more than one reaction treatment a day.

All cold treatments should be followed by reaction, which is the body's way of warming itself.

Heat is relaxing. It opens the pores of the skin. Hot treatment should be followed by a short application of cold to contract the pores and prevent catching cold.

**Demonstration.**— Sitz bath with tub; compresses.

**Supplementary Reading.** — “The Way to Health,” pp. 465-469, 474, 475.

### BRIGHT WATER

I know a little fairy who lurks within the spring;  
She is so pure, she is so true, so sweet the song she sings;  
She trips adown the hillside, and glides along the plain;  
She is the dearest gem on earth; Bright Water is her name.

I love this little fairy, her charms are ever new;  
I know she'll ne'er deceive my heart, she is so pure and true;  
She bringeth peace and plenty, and giveth health again;  
This sweetest, dearest gift of heaven, Bright Water is her name.

— *Corney Simmonds.*

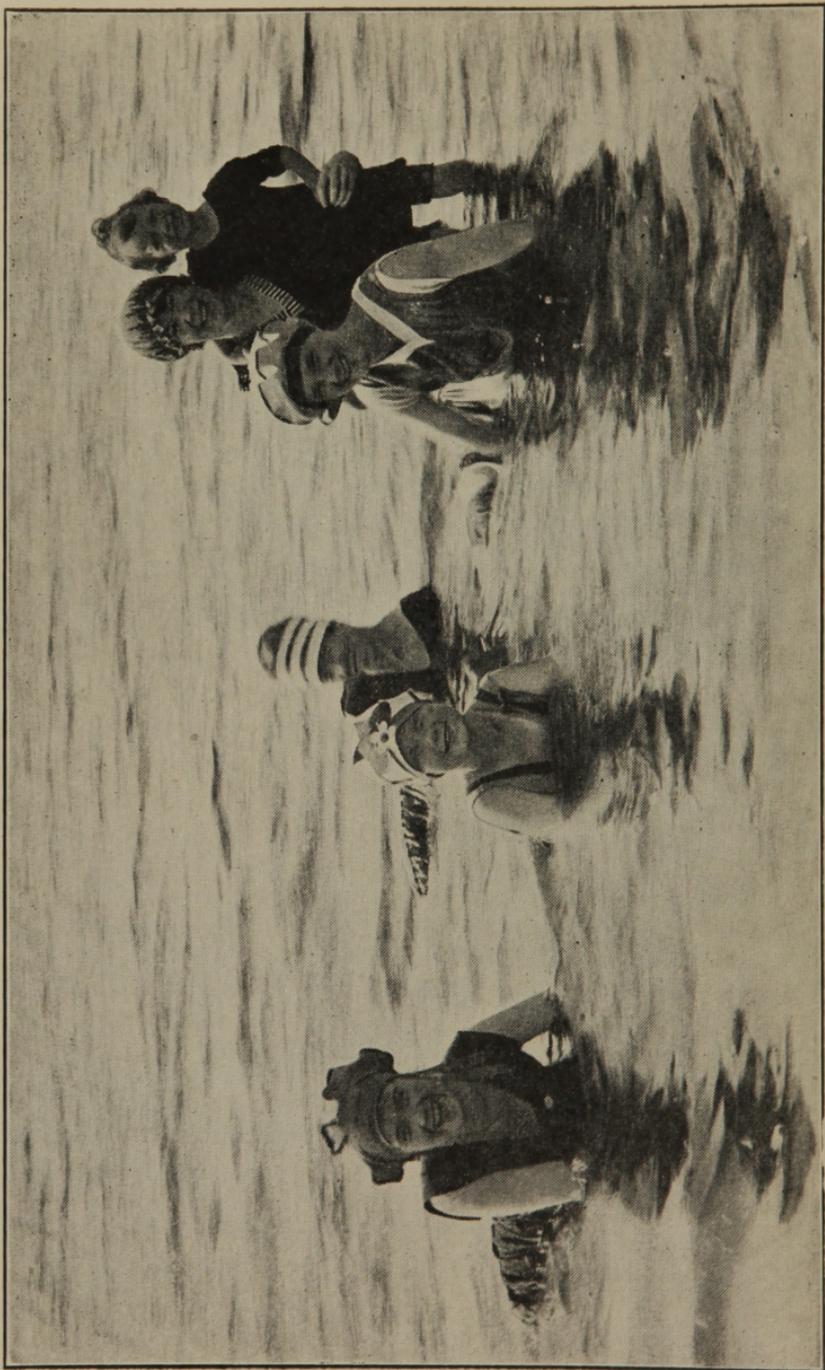


Photo by Eugene J. Hall.

BATHING IN LAKE MICHIGAN AT WHITEHALL

## LESSON VI — BATHS AND BATHING

FREQUENT bathing is essential at all times, especially in time of sickness. The skin is furnished with many glands, which are a part of the excretory system of the body. The average amount of moisture thrown off during twenty-four hours by the skin is two pints; but this varies with the outside temperature and the exertion of the individual. This moisture contains waste products taken from the blood. Evaporation of this moisture equalizes the temperature of the body. If the skin is not kept clean by sufficient bathing, the pores become clogged and the waste products accumulate in the body.

Unless otherwise ordered by the physician, the sick person should have a bath daily. It is necessary not only for cleansing purposes, but because of its tonic effect. If given properly, the bath is most refreshing, and there need be no danger of the patient's taking cold. To avoid any possibility of taking cold, it is well to follow the bath with a witch-hazel or alcohol rub. In fever, the bath is indispensable in reducing temperature. Just as the evaporation of the natural moisture of the skin equalizes the temperature of the body, so water applied to the body affords further opportunity for cooling by evaporation. In nervous conditions a warm or neutral sponge or neutral tub bath is very quieting.

In health as well as in debilitated states a cold bath or cold friction has a tonic effect. People who are not robust should take the cold friction or rub in preference to the cold plunge. Unless a patient reacts well to cold measures, they should not be given. If the reaction is

good, the patient will feel a warm glow over the body following the treatment. If this is not felt, but rather a cold, shivering feeling, the reaction is insufficient and the treatment does more harm than good. The feet should always be warm before any treatment is started, especially any cold application.

**Cleansing Bath.**— For cleansing purposes a tub bath is always more satisfactory than a bath in bed, and may be used if the patient is able to go to the bathroom and the physician approves. Before taking the patient from the bed to the bathroom, see that everything is in readiness, — the water at the right temperature, towels handy, alcohol or witch-hazel at hand for the rub, and the patient's clean clothes laid out. Before taking the patient from the tub, it is well to cool the water slightly. The water at the beginning should be from 100° to 106°. Have a blanket and sheet spread over a chair on which the patient can sit on getting out of the tub. Wrap with the sheet and dry thoroughly. Rub quickly with alcohol or witch-hazel, put on a clean gown, and take quickly to bed. It is well at this time to have everything quiet so that the patient may have a good rest following the bath. All warm baths, whether given in sickness or in health, should be followed by a short cool bath, a cool rub, friction, a pour or spray, unless he is just going to bed.

**Cleansing Bath in Bed.**— See that the patient's feet are warm. Have everything that will be needed ready at hand. Place a table, covered with oilcloth or newspapers, near the head of the bed at the patient's right. Articles necessary: one basin of water about 110°, and one of cold, with wash cloth in each; soap; witch-hazel, alcohol, or powder for rub; several Turkish towels; extra hot water. Remove the gown, fold the upper sheet and blanket back over the foot of the bed, and cover the patient with an extra sheet and blanket. First wash

the patient's face, neck, and ears, drying with a soft towel. Then wash separately the arms, chest, and abdomen, the back and hips, and the legs, with warm water and soap, rinsing with cool water. As each part is bathed, the bed should be thoroughly protected with a large towel or a folded sheet. Dry each part thoroughly as washed, and rub with alcohol, witch-hazel, or powder. Especially rub the back and the parts where there is the most pressure. Care should be taken not to expose the patient, treating only one part at a time. Always wring the cloth out and hold the corners in the hand so that it will not drip on the patient. The room should be comfortably warm and without drafts during the bath.

**Fever Sponge.**— Place a cold compress on the head. Protect the bed with a blanket or Turkish towels, and cover the patient lightly. Sponge each part freely with water, leaving the part uncovered long enough to allow the skin to dry by evaporation. This evaporation, as mentioned in the first part of our lesson, reduces the temperature of the body. The larger surfaces of the body, the chest and the back, should be sponged for a longer period than the extremities. This treatment should take fifteen or twenty minutes. When the skin is thoroughly dry, put on the gown, cover lightly, and see that the feet are warm. Close watch should be kept of the patient during this treatment. Should severe shivering or chilliness occur, or the patient begin to look blue, stop the sponge at once and dry the surface, cover well, see that the feet are warm, and give a hot drink. In serious illness this treatment should be given only on the physician's order.

The temperature of the water for the sponge should be specified by the physician. Cold, tepid, warm, or hot may be used. If there is a tendency to chilliness, with cold, clammy skin, hot water should be used. If

the skin is hot and dry, the water should be cold or tepid. The hot sponge is very effectual in reducing temperature, for it brings a large blood supply to the surface, opens the pores of the skin, and thus favors radiation of heat from the body. With the cold sponge more friction must be used (none over the abdomen) to bring the blood to the surface.

**The Alcohol or Witch-hazel Sponge.**— This is given the same as the fever sponge, except that alcohol and water or witch-hazel is used. Grain or denatured alcohol should be used, *never* wood alcohol. This can be applied to each part with the hands, and the part gently stroked until dry.

**Evaporating Sheet Pack.**—“The evaporating sheet pack is a powerful antipyretic (fever reducing) measure.” —“*Technique of Hydrotherapy.*” While this is a powerful treatment, it is not difficult to give, and if the physician approves, it can be used very well by the home nurse. The articles necessary are two blankets, a sheet, one Turkish towel, and a bucket of water at 60° to 70°.

Move the patient to one side of the bed or to another bed, and remove the gown. Spread blankets on the bed, wring the sheet out of cold water, and spread on the blanket so that the upper edge will come a few inches below the upper end of the blanket. Lay the patient in the middle of the sheet with the shoulders a little below the upper edge of the wet sheet. Bring one side of the sheet across the body, under the arm and around one leg, tucking it in snugly. Bring the other side of the sheet across the entire body, covering both arms and legs, and tuck under the patient. The wet sheet should come in close contact with the patient's body to avoid chilling. Cover lightly with one or two thicknesses of blanket to allow evaporation. In five or ten minutes the sheet will become warm. The blanket can then be

laid back and cool water sprinkled over the sheet. This may be repeated several times. The patient should remain in this pack from thirty to forty-five minutes. If the patient is vigorous, the blanket covering may be omitted entirely, to allow freer evaporation. Remove the wet sheet, dry the patient without friction, remove blankets, and replace the gown.

If there is a tendency to chilliness, the temperature of the water may be higher, even hot, and yet the desired results from evaporation be obtained.

**Neutral Bath.**—This is one of the best treatments for sedative effects, and is not difficult to give. Run sufficient water into the bathtub, before bringing the patient in, to cover the patient's body. The temperature of the water should be from 94° to 97°. Have an air pillow or some other rest for the head. If the tub is so long that the patient tends to slip down, put something ( a bucket or a foot tub) down in the water to brace the feet against. Cover the patient with a small sheet or a large towel. Endeavor to have everything conducive to relaxation. Do not talk to the patient during the bath, and if possible have the light in the room subdued. The patient should lie quietly in the tub for thirty minutes or longer. Take the patient from the tub, dry with as little friction as possible, as friction counteracts the sedative effect of the bath. Have everything ready so that the patient can go quietly to bed with nothing to arouse the mind. For very nervous patients this treatment may be repeated every few hours if necessary.

### **Points to Be Emphasized**

Bathing essential, especially in sickness.

Bath, if properly given, will not give patient cold.

Cold application should follow hot.

Avoid draughts and exposure during treatments.

Cold applications without proper reaction are harmful.

See that patient's feet are warm before every treatment.

Dry thoroughly unless cooling by evaporation is desired.

Have all supplies in readiness before beginning any procedure.

During sedative treatments, have restful environment.

**Demonstration.**— Bath in bed; witch-hazel rub.

**Supplementary Reading.**— “The Way to Health,” Neutral Bath, p. 471; Wet Sheet Pack, pp. 486, 487; Alcohol and Witch-hazel Rubs, p. 491. “The Ministry of Healing,” pp. 237, 276, 279.

### A RECIPE FOR A DAY

TAKE a little dash of water cold,  
And a little leaven of prayer,  
And a little bit of morning gold  
Dissolved in the morning air.  
Add to your meal some merriment,  
And a thought for kith and kin.  
And then, as your prime ingredient,  
A plenty of work thrown in.  
And spice it all with the essence of love,  
And a little whiff of play;  
Let the wise old Book, and a glance above,  
Complete the well-made day.

— *Amos R. Wells.*

## LESSON VII — SYMPTOMS OF DISEASE

SYMPTOMS are indications, or signs, of disease. It is important that the mother or nurse learn to detect unusual conditions or deviations from the normal. In sickness slight changes may mean much, and the observant nurse will learn to note these correctly and to report them accurately to the attending physician. While symptoms may, even when trivial, have a serious meaning, care should be taken not to show alarm, and thus excite the patient or cause the friends undue anxiety. At the same time symptoms must not be ignored.

Serious diseases may have their beginning in very slight disturbances, just as all fires are small at first. Much, sometimes everything, depends on taking hold of the disease in time, when the trouble may the more readily be cured. As an ounce of prevention is worth a pound of cure, or more, so early treatment is better than later care. In the course of disease, symptoms are the indications of the progress made for good or for ill. They also usually indicate the kind of treatment needed.

A caution must be observed; namely, that only the well-trained person should undertake to diagnose the nature of disease from the symptoms manifested. No single symptom can be taken as a guide, but all the symptoms must be considered together and in their relation to one another. The physician is the proper one to interpret their meaning. The symptom may be remote from the real seat of trouble. Headache, for instance, may mean pelvic disorder, indigestion, or nerve affection. No untrained person should undertake to make a diagnosis or to prescribe.

Mrs James Brown  
Sarah Day of Illness

July 8 - 1921  
Dr. G. A. Smith

Hours	Resp	Pulse	Temp	Stool	Urine	Food	Treatment and Medicine	Remarks
7 <sup>00</sup>	36	100	101 <sup>2</sup>					
8 <sup>00</sup>						Hot malted milk		
10 <sup>00</sup>						Egg nog 5 oz		
10 <sup>30</sup>	42	120	102 <sup>6</sup>					Large, formed stool. Abundant dark brown sputum.
11 <sup>00</sup>								Resp. more labored.
11 <sup>30</sup>					Nil			Voided.
12 <sup>00</sup>	50	140	103 <sup>8</sup>				Cold sponge lasting 20 min.	
12 <sup>30</sup>						Milk 6 oz		
1 <sup>00</sup>	46	120	103					Cyanosis marked around lips and nails Pulse weaker, cold perspiration
1 <sup>45</sup>							Hot & cold to the chest	Rained, about 1 oz. dark brown sputum.
2 <sup>00</sup>	50	124	103				Hot & cold to the heart	
2 <sup>30</sup>						Broth 4 oz		
3 <sup>00</sup>								Sleeping, resp easier, color improving
4 <sup>00</sup>					Nil		Hot & cold to the heart	Voided
4 <sup>30</sup>	48	130	102 <sup>6</sup>					
6 <sup>00</sup>							Hot & cold to the heart	
6 <sup>40</sup>								Sleeping
						3 <sup>00</sup> P.M. Dr. Smith visited. Orders: at once. Run every 2 hours. possible.		Hot & cold to the heart Admit all the air possible.

A HOMEMADE RECORD CHART

The patient should not be a party to the observation of symptoms. These should be noted by the nurse as a matter of routine. Some symptoms may be considerably exaggerated if the mind of the patient is on them, not only making the observation unreliable, but

tending to make the patient worse because of interest or anxiety.

Remembering that symptoms are only the voice, or cry, of our physical nature, we do not aim to stifle that cry. In other words, we should not make symptoms the objective of treatment, and try to stop or check them as such. They tell of trouble somewhere, and are present only because there is a cause. When the real cause is removed, the symptoms disappear. We may still the crying symptom without removing the cause, as in stopping headache with powerful headache powders, or quieting other pain with an opiate. Symptoms may well be regarded as warning signals to be heeded and not destroyed. We do not tear down the red flag danger warning nor smash the fire bell when it rings. We take heed and do something.

**Pain.**— This symptom indicates something definitely wrong. One in sound health does not suffer pain. Pain is real; it cannot be imagined and is felt only during consciousness. Its intensity is known only to the one feeling it, and he cannot always accurately describe it. Some, especially hysterical patients, may exaggerate its severity, while others who can bear it better may minimize it. The observer can note somewhat its effect, — whether it causes restlessness, if it is worse in one position than another, if it is increased by heat or cold, and what relation it may bear to the time of eating and to the kind of food eaten. Pain may be variously described as stabbing, throbbing, dull, sharp, spasmodic, continuous, slight, or severe. The nurse should make careful note of the character of the pain and other observations, and report to the doctor the actual facts as far as she can.

In abdominal pains the patient is inclined to draw up the legs to relax the muscles. If the pain is in the head, the patient may raise the head to prevent too

much blood from flowing to it. Stabbing pains are usually due to disease of the nerve tissue or pressure on the nerve caused by a growth or foreign body. Throbbing pain is constant, but is more severe with each pulse beat, caused by increased blood pressure on the nerve filaments with each heartbeat. It is present in boils. A "boring" pain is usually due to pressure, the pain being eased when pressure is removed.

**Neuralgia.**—This is a pain in the nerves due to anemia (lack of blood), irritation by poisons, or pressure due to growths. It may affect any nerves of the body, but usually affects the face and head, and in women the nerves of the pelvic organs. Neuralgia of the head, more common in young women, may be due to overwork, lack of sleep, decayed teeth, eyestrain, or ear disease. Neuritis differs from neuralgia in that the course of the nerve is tender on pressure, while the pain of neuralgia is usually relieved by pressure.

**Migraine, or Sick Headache.**—This is a neuralgic pain usually affecting one side of the head. It comes on in attacks of great severity. The scalp is tender, acutely sensitive to a light touch, but sometimes relieved by heavy pressure. It may be accompanied by disturbance of vision, vomiting, faintness, sweating at area of pain, and pallor of face.

**Pain Down Back of Thigh.**—In an adult this may mean sciatic neuralgia or sciatic neuritis, the first being relieved by pressure, the latter being increased by pressure. If both thighs are affected, it may mean locomotor ataxia. If the pain is in a child, it points to hip disease, and should have the immediate attention of a surgeon. Delay may mean the loss of the use of the limb, and even loss of life.

**Severe Abdominal Pain.**—Pain in the abdomen may be due to a number of causes. With high temperature, diffuse pain and tenderness may mean peritonitis. If

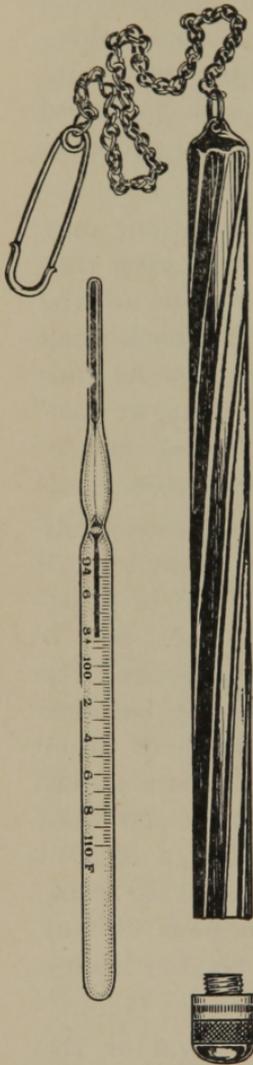
localized in the right groin, it may mean appendicitis. Without fever, severe pains in the back and upper abdomen may come from the stomach, and while very painful, are not dangerous. Pain in the right side, preceded by a few days of misery and biliousness, is probably gallstone colic.

**Position.**— Aside from the position the patient may take in pain, there are other considerations. Lying constantly on one side may indicate that that side of the lungs is affected. Lying constantly on the back may be an indication of weakness. The patient may lie face down to relieve pain in the chest or abdomen, or may lie on the right side to give the heart better action. Report all such details of position to the doctor.

**Loss of Appetite.**— This symptom is not necessarily serious. It is often the protest of nature against more food, and a short fast may be demanded. Loss of appetite usually accompanies lack of digestive juices, and it is best not to force food on the stomach unprepared for it. But if the loss of appetite is prolonged, it becomes serious, especially if accompanied by vomiting or other indications of digestive disturbance. An ill person may complain of having no appetite because the food does not appeal to her. This may be remedied by a careful selection of tempting food, served daintily. The secretion of digestive fluids and the appetite in general may be stimulated by attractive-looking foods, savory odors, or by tasting something pleasant.

**Thirst** indicates a lack of fluid in the blood or tissues, and it is seldom that water cannot be freely given when it is desired.

**Dizziness** may follow indigestion, anemia, or congestion of the brain, or may indicate disease of the ear, tumor of the brain, or some grave nerve trouble. The patient should assume a horizontal position. If it is



Clinical Thermometer,  
with Case

not known that the cause is something of no significance, medical help should be called.

**Chills** often indicate the onset of fever, the blood being driven from the surface to the interior of the body. Usually when the patient feels chilly the internal temperature is above normal, and is rising. It is a warning, especially in time of epidemic, such as influenza, and the patient should get into bed without delay. Sometimes a chill indicates that pus is forming somewhere in the body.

**Insomnia**, or inability to sleep, may result from pain, itching, or other discomfort, or from congestion of the brain in high blood pressure. It may accompany infectious disease, and may be persistent in certain mental and nervous disorders. Insomnia is frequent in the aged, being accompanied usually by drowsiness and napping in the daytime. Sometimes it results from indigestion. A normal person may not sleep well after hearing bad or exciting news. Persons who take their business worries to bed with them, or wake in the early hours trying to work out some of the perplexing problems of the day, need a rest and change. The nurse should make note of the character of the sleep, whether it is sound, light, quiet, or restless.

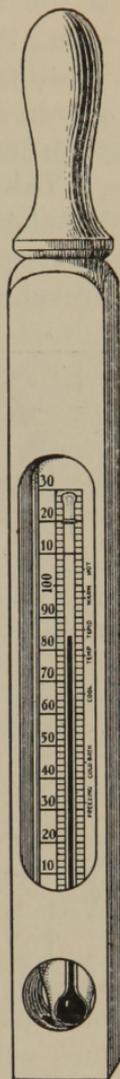
**Cough** may be simply an effort to expel dust or mucus from the throat and lungs, or it may accompany bronchitis, pneumonia, or tuberculosis. It is much better to ascertain and treat the cause of the cough than to at-

tempt merely to stop the cough. It should be noted whether the cough is continuous or spasmodic, whether it is painful or accompanied by expectoration, and whether there is any unusual appearance of the sputum.

**Fever.** — Mouth temperatures above  $99^{\circ}$  are significant in proportion to the height, but more significant in adults than in children. In children, fever comes and goes suddenly from slight cause. A rise of one or two degrees of temperature in a person of sixty is usually more serious than a greater rise in a child. Fevers are usually accompanied by hot, dry skin. A cold, moist skin is a more serious symptom. Infectious diseases are practically all accompanied by fever. A sudden fall of temperature is of grave significance. The course of the fever is characteristic of some diseases, such as malaria, typhoid, pneumonia, tuberculosis. Normal temperature is  $98.6^{\circ}$ .

**Pulse.** — Another important indicator of body functioning is the pulse. The normal pulse rate is 72 in an adult; in small children, about 100. The pulse rate of some adults is normally higher; of others, lower. The principal points which the home nurse should observe in the pulse rate are its frequency, its strength or volume, and its regularity. The pulse rate is increased in pain, fever, excitement, nervousness, and exertion. During the course of disease, if the pulse becomes rapid and feeble, it has serious significance, and should be at once reported to the physician.

**Respiration.** — The number of respirations, or breaths, taken by an adult each minute is normally from 16 to 20; in children, 30 to 35. The number may



Bath  
Thermometer

be increased by excitement, exertion, or disease. Besides the frequency, it should be noted whether the breathing is difficult, painful, noisy, or shallow. This is an important symptom, and should be noted and recorded at the same time as the pulse and temperature.

**Taking the Temperature.**—The temperature may be taken by mouth, axilla, or rectum. For adults, unless very restless or delirious, or some condition exists which prevents keeping the mouth tightly closed for several



Manner of Counting the Pulse

minutes, the temperature is usually taken by mouth. If the mouth is very dry, it should be taken otherwise. With small children it should not be taken by mouth.

To take temperature by mouth, the thermometer should be washed, the mercury shaken down, and the bulb placed under the tongue and held for three minutes with the lips tightly closed. Remove thermometer, read, record, and cleanse by washing with water and then with alcohol. Nothing hot or cold should have been taken for at least twenty minutes before taking the temperature.

By axilla: Wipe armpit dry, shake mercury down, place bulb in armpit, bring arm close to body, and hold

for five minutes. The axillary temperature is usually from one half to one degree lower than mouth temperature.

By rectum: This is probably the least variable temperature, and is from one half to one degree higher than mouth temperature. A separate thermometer should be kept for this method. The bulb of the thermometer should be lubricated, inserted about an inch and a half, and held in place for three minutes. Never let go of the thermometer, especially with children or delirious patients, as they may turn and break it off in the rectum.

**Pulse.**— Ordinarily the pulse is taken at the wrist. It is found on the front of the wrist on the thumb side. The patient should be lying down and relaxed, and the arm in an easy, relaxed position. The attendant should, without disturbing the patient's arm, place two or three fingers (never the thumb) on the pulse, and count for a full minute or two half minutes. A time-piece with a second hand must be used for taking pulse and respiration.

**Respiration.**— The respiration should be counted either when the patient is asleep or when it can be done without the patient's knowledge, as the breathing is partially under a person's control, and is very likely to be increased or decreased perceptibly if one's mind is called to it. A very good time to count it is just after counting the pulse, before removing the fingers from the wrist. The patient will then think you are still counting the pulse, and will not notice your watching his breathing.

### **Points to Be Emphasized**

Do not outwardly show your anxiety over new or unfavorable symptoms.

A temporary loss of appetite may be what is needed. Symptoms should be heeded, not checked.

A cough is nature's way of trying to expel dust or phlegm from the throat or lungs; don't stop such a cough.

Don't dope for pain, but get rid of the condition that causes it.

Leave it to the doctor to judge the meaning of symptoms.

Be careful in making observations and careful in reporting them. Wrong reports are worse than none.

**Demonstration.**— Taking temperature, pulse, respiration; drawing simple chart.

**Supplementary Reading.**— "The Way to Health," pp. 13-16, 294, 295, 274, 275, 451-454.

#### NOT WORTH WHILE

It isn't worth while to fret, dear,  
 To walk as behind a hearse;  
 No matter how vexing things may be,  
 They easily might be worse;  
 And the time you spend complaining  
 And groaning about the load,  
 Would be better given to going on  
 And pressing along the road.

There are vexing cares enough, dear,  
 And to spare, when all is told;  
 And love must mourn its losses,  
 And the cheek's soft bloom grow old;  
 But the spell of the craven spirit  
 Turns blessing into curse,  
 While the bold heart meets the trouble  
 That easily might be worse.

So smile at each disaster,  
 That will presently waste away,  
 And believe a bright tomorrow  
 Will follow the dark today.  
 There's nothing gained by fretting;  
 Gather your strength anew,  
 And step by step go onward, dear,  
 Let the skies be gray or blue.

— *Mrs. Margaret E. Sangster.*

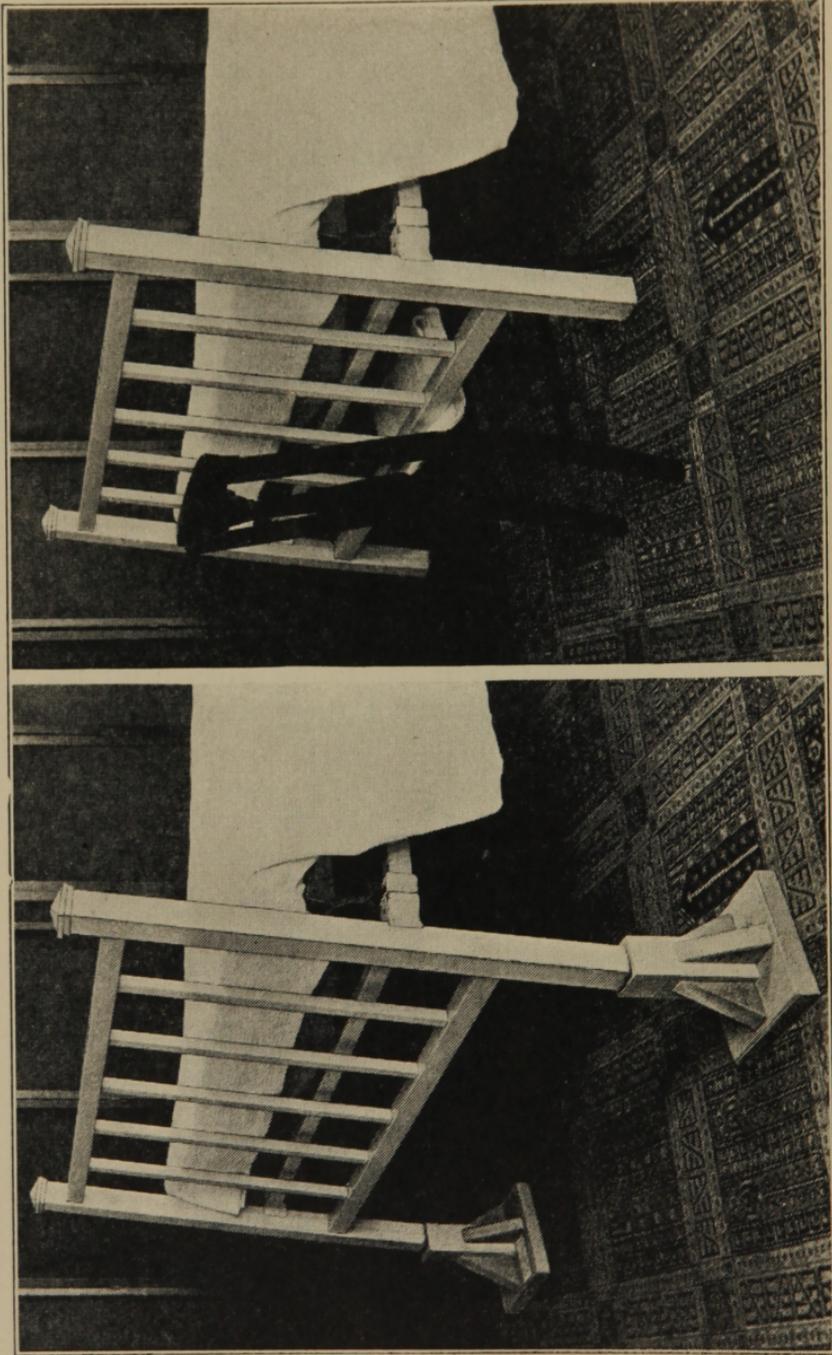
## LESSON VIII—BEDS AND BED MAKING

AS a rule every one, whether sick or well, enjoys his own bed best. In case of sickness in the home, this fact should be taken into consideration, if his bed is at all suitable. In addition to the patient's comfort, however, the convenience of the attendant must be remembered. The patient can be given better care with less work for the nurse if the bed is of the right height and width, and is properly placed. It should be about twenty-six inches high and of single or three-quarter width. If the bed is not the desired height, it can be raised by removing the casters and placing a block under each leg. In doing this care should be taken to have the bed stand firm so that it cannot be pushed off the blocks when the nurse is moving the patient about in bed. The bed should be firmly put together so that it will not shake and wobble. If the patient is able to get out of bed, a firm, broad footstool should be kept handy on which he may step. The bed, if possible, should be so placed that the attendant can get all around it, at least to the two sides and the foot.

**Bedstead.**—The bedstead should be of metal, either brass or enamel. Wooden beds are clumsy to handle and easily harbor vermin. A brass bed can be kept clean by wiping with a damp cloth; the enameled bed can be washed with soap and water.

**Springs.**—The springs should be firm so that they will not sag in the middle. Coils covered with a firm mesh are best. They should be kept clean and free from dust with a long-handled brush.

**Mattress.**—The mattress should be firm and smooth. The hair mattress is the best, but rather ex-



**MANNER OF RAISING A LOW BED**

A spike is driven into the top of each block, which fits into the caster hole, thus preventing the bedpost from slipping off the block.

pensive. A good felt mattress is next best, and very comfortable. It should be kept clean by brushing with a whisk broom, and frequently given a good sunning. Should the mattress become soiled, it should be thoroughly cleaned or renovated. Blood stains may be removed by working into the stain a paste of starch and water, allowing this to dry, then brushing off. This works best if the paste is applied before the stain becomes dry.

Where there is danger that the mattress will become soiled, a rubber sheet should be used for protection. This should be at least one yard wide and long enough to tuck in under each side of the mattress. It should be kept clean by sponging with soap and water, and when not in use should be rolled, not folded. Care should be taken in using pins about the rubber sheet, as one pin-hole in the middle of the sheet will ruin it. If a rubber sheet is not available, table oilcloth or several thicknesses of newspaper may be substituted. Whether the rubber sheet is used or not, the mattress should be covered with a pad which comes to all four edges. This pad may be either one of the quilted kind made for the purpose, or a clean old quilt or cotton blanket.

**Pillows.** — Pillows for use in the sick-room should be of different sizes and textures. Moderately soft pillows are needed for the head and shoulders, firm ones to support the knees, small soft ones to tuck under the arm or side. Pillows such as are used for babies are very convenient in making an invalid comfortable. Each pillow should have a slip to fit, so the pillow need not be crowded, which makes it hard and uncomfortable, or so large that there will be unnecessary folds and wrinkles at the edges.

**Linens.** — It is desirable to have sheets one yard longer and one yard wider than the mattress. There should be sufficient linen to keep the bed perfectly clean.

The nurse should, however, be economical in the use of the linen, both bedding and towels. Many homes do not have a large supply, and carelessness in this respect often brings hardship to an already overworked housewife.

**Draw Sheet.**—The draw sheet is used to cover the rubber sheet and protect the bed. It should be several inches wider than the rubber sheet, and should tuck in on each side of the mattress. Old sheets should be used for this, as the draw sheet has to be changed and washed frequently. When the bed is changed, if the upper sheet is not soiled, it may be used as a draw sheet.

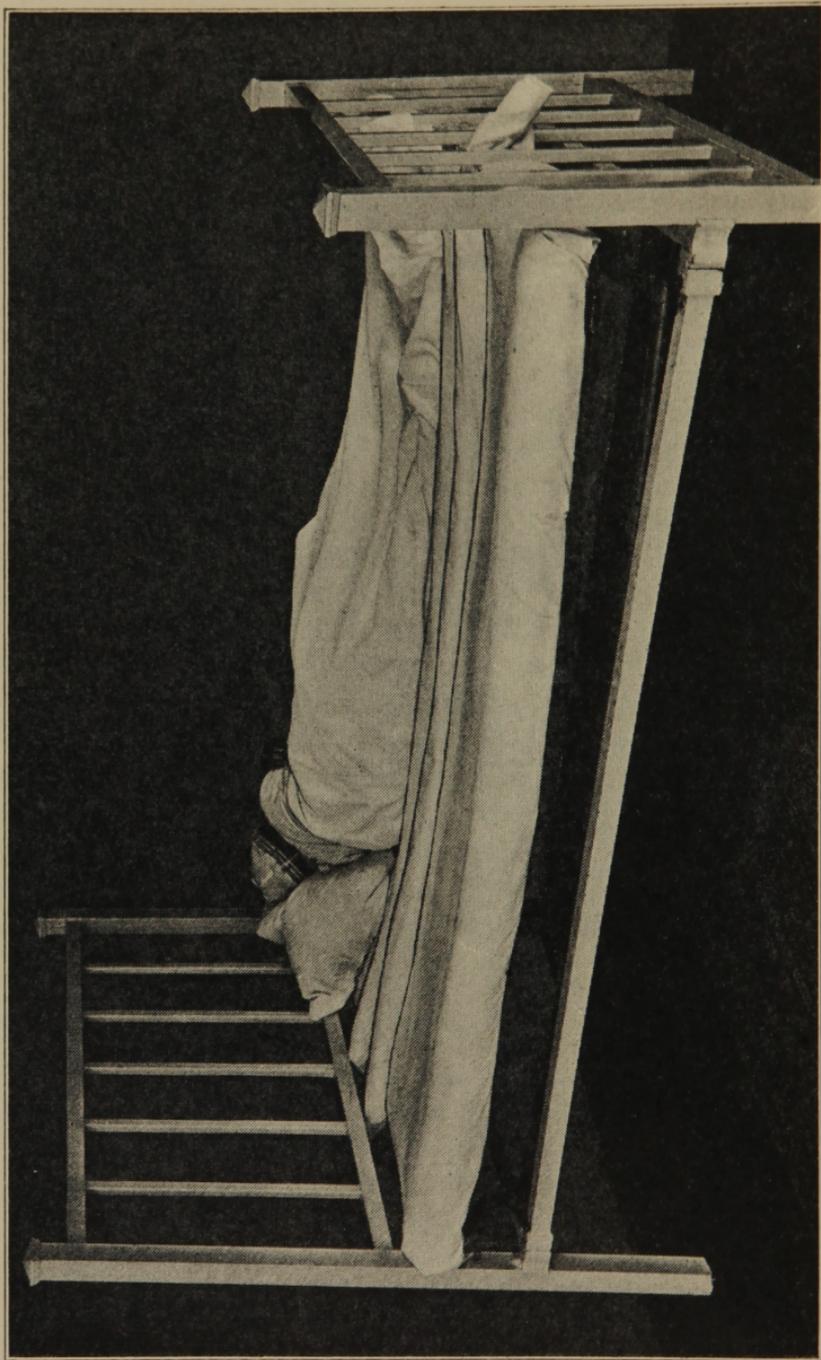
**Bed Covers.**—Woolen blankets are the most satisfactory covers, especially in the sick-room, as they are warm, light weight, and washable. If quilts must be used, they should be light weight and such as can be easily washed. Heavy comforters are unsanitary and burdensome for both the patient and the nurse. Any bed covers which cannot be laundered should be protected by a strip of cheesecloth or muslin basted over the upper end, as this can be removed and washed frequently.

**Counterpanes.**—Heavy counterpanes should never be used in the sick-room. White seersucker or dimity spreads are best, but if these are not available, a sheet may be used.

**Making the Bed.**—The mattress should be turned frequently, one time from side to side, next from end to end. First place the rubber sheet across the middle of the mattress, drawing it smooth and tucking it under either side of the mattress. Over this place the pad, then the lower sheet, drawing smooth and tucking in on all sides. If this sheet is too short to tuck in at both top and bottom, place the lower end even with the foot of the mattress and tuck in only at the head. Fold the

corners neatly. If it is probable that the bed will become soiled frequently, it is advisable to put the rubber sheet over the lower sheet, directly under the draw sheet. The draw sheet is folded lengthwise and placed across the middle of the bed, with the open fold of the sheet toward the foot. This should be put on very smoothly and tucked in securely. Then spread the upper sheet, right side down, the upper edge even with the top of the mattress. Tuck in at the foot with mitered corners. Next place the blankets with open end about six inches below upper end of upper sheet, turning sheet back over blanket, and tuck in at foot and sides with mitered corners. Place the counterpane and pillows.

**Changing Bed with Patient in It.**—Have all clean linen and freshly aired pillows near at hand before beginning. Remove all but one pillow. Loosen all bedding on all sides. Remove counterpane and extra blanket. Move the patient to one side of the bed, and turn him on side with his back to the middle of the bed. Fold the top sheet and blanket lengthwise back over the patient. Roll the under sheet, the rubber sheet, and the draw sheet separately lengthwise of the bed close to the patient's back. Place the clean lower sheet over the mattress, with half of sheet pleated next to the patient, and tuck in the near edge and the ends. Bring the rubber sheet back over the clean lower sheet, cover with clean draw sheet, half of which is pleated at patient's back, and tuck in on near side. Place clean pillow on clean side of bed. Go to opposite side of bed and turn the patient back over the rolled bedding. Remove the soiled linen and finish adjusting the under sheet, rubber sheet, and draw sheet, taking care that all are drawn snugly to avoid wrinkles. The patient can now be placed in the middle of the bed and made comfortable with another pillow or two, as desired. Now place a clean sheet and a blanket over the blanket already over



MANNER OF CHANGING THE BED LINEN WHEN THE PATIENT IS AN INVALID OR HELPLESS

the patient. Holding these in place with one hand, draw out the soiled sheet and extra blanket. This blanket can then be placed over the other, if two are necessary. The bedding should then be tucked in at the foot and the counterpane placed.

While it is desirable that the bed should always look very nice and smooth, the patient's comfort is of more importance than the appearance of the bed, and the bedding should not be tucked in so snugly that the patient feels bound down and uncomfortable.

### **Points to Be Emphasized**

Bed should be of proper height and firmly put together.

Bed should be kept clean.

Springs should not sag.

Mattress should be firm and smooth; frequently turned and aired; properly protected.

There should be various sizes of pillows.

There should be sufficient linen, of proper size to keep bed clean.

Bed covers should be clean and light weight.

Clean linen should be at hand before starting to change bed.

Change bed with as little disturbance to patient as possible.

Take special care that pad, rubber sheet, and under sheet are smooth under patient.

**Demonstration.**— Making unoccupied bed; changing bed with patient in it.

**Supplementary Reading.** — "The Way to Health," pp. 429-436.

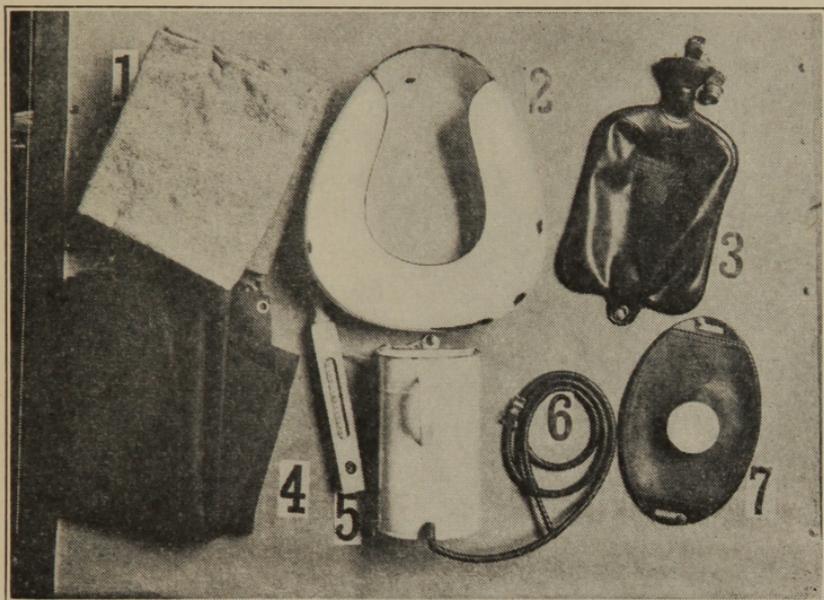
## LESSON IX — THE SICK-ROOM AND THE ATTENDANT

IN choosing and equipping the sick-room, the comfort of the patient must ever be first considered. Things which to well people seem quite unimportant may mean much to the one who is ill, and may help or retard her recovery. Anything which affects the patient's comfort, especially in serious illness, should be considered important. Her wishes as to where she is placed should be granted, if reasonable. In short, minor illnesses it is not advisable to make decided changes in the home, but if there is prospect of a long or serious illness, the room and equipment should be early arranged with care. A person's own room is often more restful than a strange one, unless there is unfinished work in sight which may cause worry. The attendant's convenience should be thought of in choosing and arranging the room, but this should always be secondary to the patient's comfort. The nurse must remember that in very few homes will she find everything ideal. She must use her own ingenuity and tact to make the very best of what is available.

**Location.**— Preferably the room should face southeast in summer and southwest in winter, where the sunlight reaches it most of the forenoon or afternoon. An upstairs room usually gets more light and air than one downstairs. It should be near the bathroom, and away from the odors and noises of the kitchen. Usually a patient does not complain of outside noises, especially those to which she is accustomed, so much as of the avoidable noises, such as the slamming or creaking of doors, flapping of curtains, rattling of windows, clink-

ing of dishes, etc. The other members of the family should remove their belongings from the room to avoid running in and out. There should be two windows to afford sufficient ventilation.

**Equipment.**—All unnecessary articles of furniture should be removed, unless the patient wishes them re-



#### UTENSILS FOR THE SICK-ROOM

- (1) Draw Sheet; (2) Bedpan; (3) Water Bottle; (4) Rubber Sheet; (5) Bath Thermometer; (6) Enema Can, with Tube; (7) Ice Bag

tained, especially if an old person. This will simplify the attendant's work and be more restful to the patient. The floor should be bare except for small, washable rugs. If absolutely necessary to have a carpet, it should be swept in such a way that no dust will be raised. The ideal method is with a vacuum sweeper, but a damp broom, or paper wet and torn into small bits and scattered over the floor before sweeping, does very well. Plain, soft-tinted wall paper is desirable.

The furniture should consist of a proper bed so placed that the attendant can easily get to both sides, a small table near the head of the bed, a dresser, two or three chairs, a couch or cot, screen, footstool, a larger table, a wall thermometer, and a rack or hook on which to hang the enema can. This equipment must be arranged and modified according to what is available.

If the patient is able to sit up, there should be a comfortable rocker with a high back. If necessary to have any upholstered furniture in the room, it should have a washable covering. Curtains should be plain and washable. Pictures on the walls should be restful, nothing exciting or of objects in motion. One or two potted plants or fresh-cut flowers add much to a room. These should have daily care. Flowers with strong odors or heavy perfume should not be used.

**General Care.**—The room should be well ventilated at all times (unless during treatment or when the patient must be exposed), and this must be done without a draft on the patient. One window opened at the top and another at the bottom is a good arrangement. The screen or a sheet pinned over a chair back is useful in protecting the patient from drafts. The room temperature should be from 65° to 68°, except during treatment, or when the patient is sitting up, then about 70°. No open gas stove or oil heater should be used. The room ordinarily should be kept light, but the bed should be so placed that the light will not shine directly in the patient's eyes.

**The Attendant.**—By far the most important factor in time of illness is the care given by the attendant or nurse. The physician may be ever so skilled, yet if there is no one to carry out his orders intelligently, he can do but little. On the other hand, if the nurse does her work in an intelligent, tactful manner, the patient

will unconsciously overlook much that may be unfavorable in her surroundings.

During any serious illness there should be one person who is responsible for the receiving and carrying out of orders. This will avoid confusion and duplicating or omitting orders.

The nurse should be cheerful, but quiet and soothing in manner; neat in dress and arrangement of hair. She should never talk of sickness and disease, of former patients, or of anything that will cause unpleasant thoughts or excitement on the part of the patient. She should direct the patient's thoughts into cheerful, hopeful channels, offering all the encouragement possible. No one, however, is ever justified in falsifying to a patient, even though it may apparently encourage her. Honesty is always the best policy, even with an irrational person. If the patient inquires about her own condition, better evade the question by tactfully changing the subject or referring her to the physician. The nurse's work is to make the patient comfortable and to follow the doctor's direction, not to diagnose, prescribe, or give out information to or about the patient. She should also remember that she need not constantly *entertain* the patient, for the patient should have as much time as possible to rest and be quiet.

The nurse must be tactful in dealing with the patient and the family, and with visitors. She must be able to persuade, not command, the patient to do the things which are good for her. The family must be kept from showing their anxiety, from telling family troubles, or unpleasant neighborhood happenings, in the sick-room.

Great discretion should be used in allowing visitors. If they are admitted, it should be during the latter part of the forenoon or the early part of the afternoon. They should be cheerful, but not exciting. One at a time is best. They should sit where the patient can easily

see them. No one outside the family should visit during mealtime. With intimate friends, and especially with members of the family, it is well to leave the patient alone at times. If the attendant notices that a visitor is worrying or tiring the patient, he must be tactfully gotten out of the room, but great care must be used to give no offense to either patient or guest.

There should be no whispering in or near the patient's room. She is sure to think she is being discussed. Do not rock in the room. Be careful not to jar or bump against the bed, and never sit on the bed. The rattling of newspapers or clicking of knitting needles is very annoying to one who is ill.

The nurse must ever keep the patient's comfort in mind. She should be able to anticipate the patient's wants, and to do before being asked, and without fuss, the little things which make for comfort.

Many people who think they would like to go to bed and "stay for a month" find it a most tiresome place after a few days. It is the duty of the nurse to make it as comfortable and restful as possible.

The care of the pillows is very important. The rubber sheet, pad, under sheet, and draw sheet should be kept free from wrinkles. Watch that no crumbs get down in the bed, and that the under sheet does not become damp from perspiration. Keep the bed looking nice, but do not make the patient afraid to move for fear of disarranging the covers. It is often desirable, when a patient is confined to bed for a long time, to change occasionally to another bed, a cot, or a wheel chair. This is very restful to the patient and affords the attendant an opportunity to turn the mattress and give the bedding a thorough airing.

Many families hesitate to employ a nurse because they think she will make more work than she will save. A nurse who does this has missed her calling. She

should wait on herself. She should be careful of furniture and rugs, and economical of supplies and linen. She should be quiet in closing doors, and in passing back and forth through the house. She should care for the patient's room and tray, preparing articles of food which are not included in the family menu. When the care of the patient and her own health will permit, she should not feel it outside of her duties to help with other household work when the mother is ill or overworked and help impossible to secure.

**Morning Toilet.**—The face and hands of the patient should be washed, the finger nails carefully cleaned, and the teeth brushed. A small basin should be held close to the patient and a glass of water or mouthwash in which she can dip her toothbrush, and the pillow protected with a towel. If she is too ill to wash her own teeth, the nurse should make several swabs by covering the ends of small flat sticks with gauze or cotton, and wash the teeth and gums with the mouthwash. If she has artificial teeth, they should be removed and scrubbed thoroughly by the nurse, and the mouth rinsed. The hair should be combed at least once a day and braided in two braids back of the ears. It is not always best to do this before breakfast if the hair is long and heavy, as it may be too tiresome for the patient, but it should at least be brushed back from the face. The bedclothes should be straightened out and the pillows shaken and turned.

**Changing Gown.**—Flex the patient's knees, draw the gown up under the hips and back to the shoulders, remove one sleeve, lay front of gown up over the patient's head, lift head and shoulders and draw off the other sleeve. Put on one sleeve of the clean gown, put gown over patient's head, bringing back of gown down under patient's neck, put on other sleeve, and draw gown down under back and hips and over the

knees. If the patient is heavy or very ill, it saves a great deal of lifting to split the gown up the back to the yoke. In changing the gown of a patient who has one arm which is painful if handled or moved, remove the soiled gown from the affected arm last and place the clean gown on this arm first.

### **Points to Be Emphasized**

In choosing and equipping the sick-room the nurse must make the best of what is available.

Room should have sunshine, and be well ventilated.

Furnishings should be simple.

Proper care of patient is most important factor.

One person should be responsible for orders.

Nurse should be cheerful, but quiet, tactful, able to anticipate patient's wants.

Nurse's work not to diagnose or prescribe, but to make patient comfortable and to follow physician's orders.

Discretion must be used in allowing visitors.

No whispering in or near patient's room.

Nurse should lighten rather than add to household work.

**Demonstration.** — Morning toilet; changing gown.

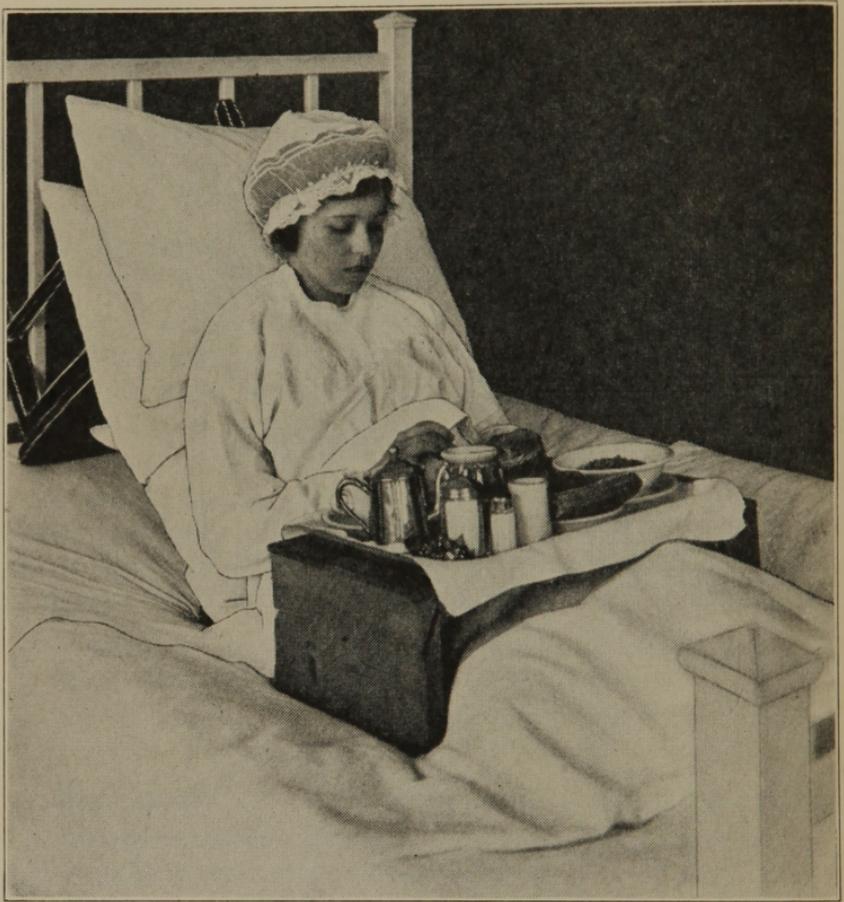
**Supplementary Reading.** — "The Way to Health," pp. 425-429, 454, 455; "The Ministry of Healing," pp. 219-224.

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"OPEN the door, let in the sun,  
 He hath a smile for every one,  
 He hath made of the raindrops gold and gems,  
 He may change our tears to diadems,—  
 Open the door."

## LESSON X — REVIEW

THE review may cover such ground as the teacher thinks best, or it can be a review of the "Points to Be Emphasized," as given at the close of each lesson.



A HOMEMADE BED TABLE AND IMPROVISED BACK REST

For sick or well, that saw is best  
Which counsels, "Never eat in haste."

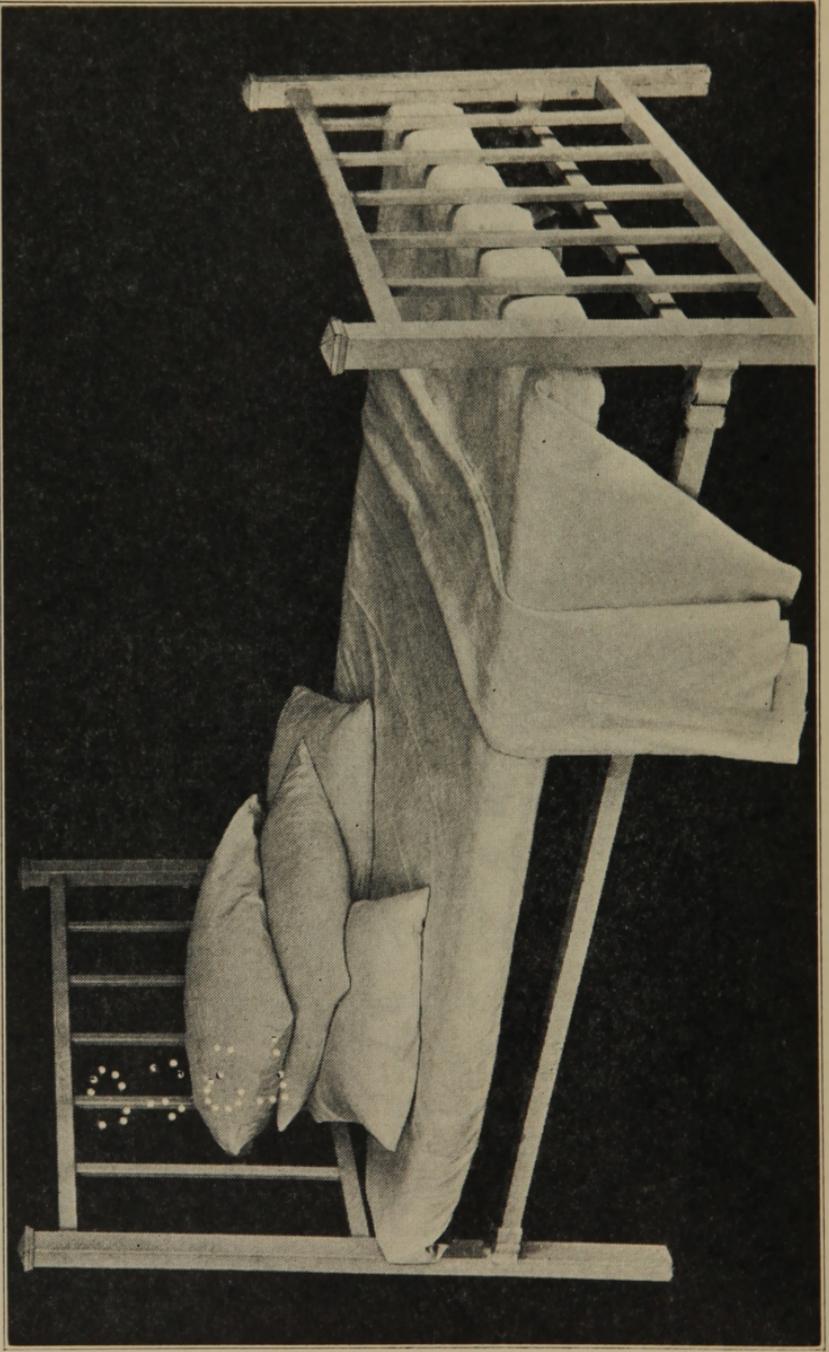
# LESSON XI — GENERAL CARE OF THE SICK

## USE OF APPLIANCES

**Back Rest.**—Simple appliances for the sick-room mean much to both patient and nurse. One of the most useful is the back rest. If the illness is prolonged, it may be thought advisable to purchase a back rest, but for a short illness a straight-backed chair serves the purpose very well. The chair should be turned down on the bed with the legs toward the head, the back forming an incline toward the patient's back. The incline should be well covered with pillows, and pillows should support the patient's arms. Care should be taken to see that the chair does not mar the head of the bed.

**Bedside Table.**—For the patient who is able to sit up at mealtime, a bedside table is indispensable. This can be homemade. Procure a box the size of an ordinary soap box, knock out the sides, leaving only the bottom and ends. See that the ends are securely nailed to the bottom. Give this a coat of light-colored paint or cover with pretty wall paper. The painted finish is better because it can be washed. This fits nicely over the patient, giving room for her to move, and keeping the weight of the tray off her lap. As a temporary table a lapboard may be placed across the bed, the ends being supported by large books.

**Arrangement of Pillows.**—For any patient, especially for one who is confined to bed for a long time, it is absolutely essential that the nurse be able to arrange the pillows comfortably, and to change them occasionally in a way that will rest the patient. When



ARRANGEMENT OF PILLOWS

two pillows are desired under the head, the lower one should come down a little under the shoulders, the upper one just to the shoulders. The pillow should not be so soft that the head will sink into it, especially when the patient is on her side, for it will give her a smothered feeling. To elevate the head and shoulders, arrange several pillows in an inverted V, with a small pillow across the apex for the head, the side pillows coming down to support the arms. When the patient is on her side, tuck a pillow close to her back, place a small pad or pillow between her knees, or a larger one under the upper knee and leg. When on her back and the knees are flexed, a firm pillow folded and placed under the knees, with a small pad to brace the feet, will add to her comfort. It is restful occasionally to have a pillow placed under one arm, or under the forearm and hand.

All pillows should be shaken up frequently, the slips being put on smoothly, and so placed under the patient that she will not feel ridges or lumps. These apparently little things mean very much to one who is weak and ill, especially if the nurse thinks of them before being asked.

**Devices for Support.**—The patient, when partly sitting up or when the head of the bed is elevated, is inclined to slide down in the bed. This can be avoided to some extent by placing a firm pillow, or a quilt folded and covered with a pillow slip, at the foot of the bed so that the patient can brace her feet against it. Or a padded board with ropes fastened to the ends and tied to the sides of the bed, may be used. A sling may be made from a sheet folded diagonally and the far corners tied at the sides of the bed.

**Cradles.**—It is sometimes desirable to keep the weight of the bedclothes from a certain part of the body because of injury or extreme tenderness. A very

good cradle may be made by cutting a barrel hoop in two, or in even smaller pieces, and fastening the pieces together at right angles. This should be placed under the bed covers so that it will not touch the body, but will allow the patient room to move. If the hoop is not clean and smooth, it should be scrubbed and wrapped with old muslin.

**Bedsore.**— Great care should be taken to avoid bedsores. They are caused by continued pressure which interferes with the circulation and nutrition of the part. They usually occur where the bones come near the surface, as the heels, hips, end of the spine, elbows, shoulder blades, back of the ears or head. Contributing causes are moisture, wrinkles in the gown or bedding, and lack of cleanliness. There is much more danger with patients who are thin or undernourished and with old people. By frequently turning or changing the position of the patient, keeping the bed dry, smooth, and clean, rubbing the part with alcohol and dusting with powder, using cotton or rubber rings to relieve pressure, bedsores can be prevented. *They are much easier prevented than cured.* If a bruised or a very red spot is found, it should be reported to the physician at once.

**Bedpan.**— Any request for the bedpan should be attended to at once. Very few things make the patient feel her helplessness as keenly as this part of her care. The pan should always be warm, but not hot. It can be warmed by running hot water over it for a moment, and drying thoroughly. Flex the patient's knees, pull up the gown, slip a newspaper covered with a towel or old sheet under the hips, lift the hips with the left hand, place the pan under the hips with the right hand. A pad should be put over the end of the pan under the hips. This is especially necessary if the patient is thin. If the patient is helpless and cannot assist in lifting herself, the nurse must have some one to help her.

After cleansing the patient, remove the pan, cover at once, pull down the gown, and make the patient comfortable. In placing the pan and removing it care must be observed not to bruise the end of the spine and not to knock the pan against the patient's hips and feet. The pan should be emptied at once and washed thoroughly. It should be cleansed at least once a day with soapsuds. A clean pan is odorless.

**Water Bottles.**—Water bottles and ice bags will last a long time if given proper care. Most of them are ruined by careless use rather than long use. Water bottles should never be filled more than one third or one half full. Before screwing in the stopper, lay on a flat surface and allow the water to come to the neck, thus forcing out all air, and screw the stopper in before raising up. This avoids strain on the bottle and makes it more pliable.

While the water bottle is one of the most useful articles for the sick-room, it has probably done more harm by burning patients than any other one thing. Burning a patient is *inexcusable*. Boiling water should never be used, both because of the danger to the patient and because it ruins the bottle.

The bottle should always be covered with a fitted cover or wrapped in a soft towel. Never use pins in the cover. If the patient is old, helpless, paralyzed, unconscious, or a child, the nurse should try the temperature of the bottle before it is covered, on her bare arm. Even then the bottle should be so placed that it will not lie directly against the patient's body. It takes very little heat to burn a debilitated or unconscious person. As substitutes for water bottles, glass fruit jars or heated bricks, well wrapped, may be used.

**Ice Bags.**—Ice bags should be filled about half full with finely mashed or chipped ice, the air pressed out, and the cap screwed on. The washer should fit well so

that the water will not leak out as the ice melts. The ice bag should be removed every fifteen or twenty minutes, and the surface warmed by friction or a short fomentation.

**Drinking Tube.**—Drinking tubes should be kept clean by washing in running water immediately after use. A small tube brush which can be procured at the drug store should be used for thorough cleansing. In using the drinking tube the lower end must be kept constantly under the surface of the liquid. In giving a drink from either a tube or a glass, the nurse should stand on the right side of the patient, slipping the left hand under the head, and holding the glass in the right. Tip the glass enough so the patient can get a good swallow, but remember that she must take a breath occasionally.

**Care and Administration of Medicine.**—Every drug should be looked upon as an element of danger, and should be plainly labeled. The bottles or packages should always be kept out of the reach of children, and poisons and substances for external application should be kept in a separate place from medicines for internal use. Medicine should never be prepared or poured in a dark or dimly lighted room, or when the nurse cannot give her entire attention to the task in hand. Orders for administering medicines should be given by the physician *in writing*. The nurse should read the physician's order and the label twice before pouring the dose and again before giving it. The dose should be measured accurately, given at the hour ordered, and recorded. If there is *any* doubt in her mind in regard to any particular, she should omit the dose until she can obtain explicit directions from the doctor. Liquid medicine should usually be diluted with a small amount of water. In pouring from a bottle, liquids should be

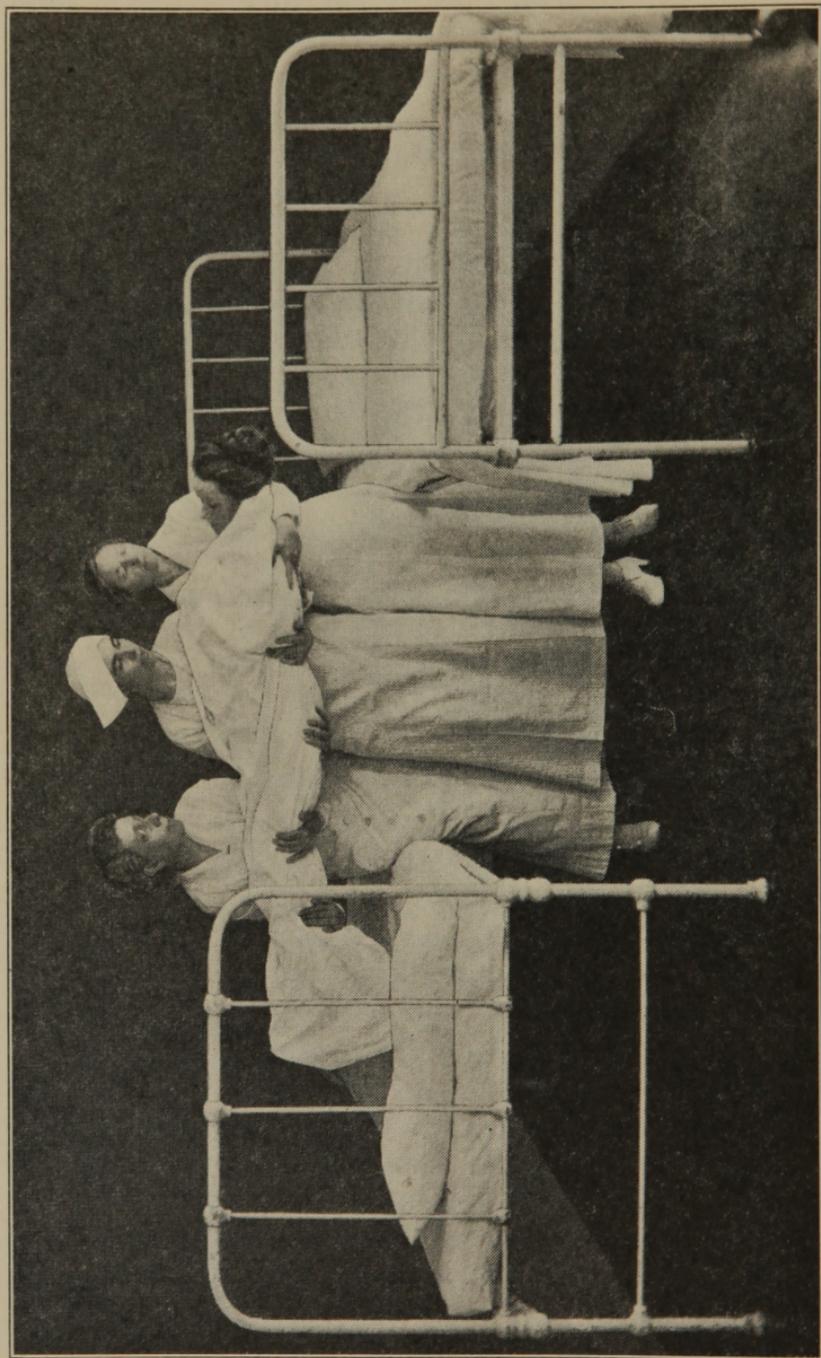
poured from the side opposite the label to avoid soiling the label.

**Lifting.**—To lift the patient from one bed to another there must be two helpers besides the nurse. Draw the patient to one side of the bed, and fold the arms over the chest. The gown should be pulled down and the room warm enough so that all the covers may be folded back. One attendant should support the head and shoulders, another the middle of the back and hips, and the third the feet and legs. *All must lift together.* The hands of the attendants should be kept flat but not stiff. Do not dig the fingers into the flesh of the patient. When all are ready, lift carefully but firmly, all moving together, and carry patient to other bed. If the other bed or cot is side by side with the patient's bed, the foot of the one should be to the head of the other, so that as the attendants turn, the bed will be in the right position to lay the patient down.

To lift the patient up in bed, flex the patient's knees, place one arm under the head and shoulders, one under the hips, and draw up to the head of the bed. If the patient is able she should assist by bracing the feet and pushing upward.

**Turning Patient.**—To turn a patient who is helpless the nurse should slip her arms under the hips and shoulders and turn the patient, seeing that the hips are drawn well back and the feet and legs in a comfortable position.

**Carrying.**—For moving a patient up or down stairs, or some distance in the house, if able to sit up, a straight-backed chair makes a convenient carrier. The chair should be one that is strongly built and has no loose joints. Two attendants are required. After placing the patient in the chair, the attendants, one on either side, grasp the side rounds of the chair with one hand



**LIFTING A HELPLESS PATIENT FROM ONE BED TO ANOTHER**

Notice that the head of one bed is turned in the opposite direction from that of the other

and the back of the chair with the other. If necessary to pass up or down a narrow stairway, one attendant should take the back of the chair, the other the front legs. In raising it from the floor and carrying it, the chair should be tilted backward slightly, which makes it easier for the patient to ride without feeling that she is going to slip out.

### **Points to Be Emphasized**

The nurse must know how to use simple and improvised appliances.

Arrangement of pillows is very important.

Bedsore can and should be prevented.

The bedpan should be so clean that it will be odorless.

The patient's wants should be attended to promptly.

Injury to end of spine by careless use of bedpan may cause bed sore.

Water bottles should not be too full, should not be filled with boiling water; all air should be expelled before closing.

Burning a patient is inexcusable.

Ice bags should not be too full.

Ice bags should not be left on for more than fifteen or twenty minutes without warming the surface.

In giving a drink, watch the patient and tip the glass properly.

When lifting a patient, all work together.

**Demonstration.** — Chair as back rest; homemade table; arrangement of pillows; pads to avoid pressure; placing of bedpan; filling water bottles and ice bag; turning and lifting patient.

**Supplementary Reading.** — "The Way to Health," pp. 436-441, 445-450.

## KNOWLEDGE AND IGNORANCE

KNOWLEDGE holdeth by the hilt, and heweth out a road to conquest;

Ignorance graspeth the blade, and is wounded by its own good sword.

Knowledge distilleth health from the virulence of opposite poisons;

Ignorance mixeth wholesomes unto the breeding of disease.

Knowledge is leaguered with the universe, and findeth a friend in all things;

But ignorance is everywhere a stranger, unwelcome, ill at ease, and out of place.

— *Tupper*.

## LESSON XII — DIET AND NUTRITION

**Body Building.** — The body is composed of certain elements which are supplied in the food eaten. All the body tissues, its organs, glands, and fluids, are made of the material taken into the body. The quality of food eaten determines the quality of the building material entering into the body. Good blood cannot be made of poor food. Whatever is lacking in the diet in essential body-building material will be wanting in the body, for it has no means of making up what is not supplied it; it does not manufacture food material.

**Heat and Force.** — The body may be likened to a furnace which requires fuel for making heat. The body keeps approximately at a temperature of  $98.6^{\circ}$ , winter and summer, in the cold North and the warm South. This constant heat is supplied by the burning, or oxidation, of the food we eat by the oxygen in the air we breathe.

The body is also like an engine in that it develops or uses energy. It is capable of doing a large amount of work, and makes use of considerable power or force. Here also it is dependent upon the burning of the food by oxygen.

The constant motion of all parts of the body means the expenditure of energy and the loss of heat. The body tissues are constantly being broken down and under normal conditions are constantly being fully repaired. This continued loss of heat and energy and repair of tissue is made good by the fuel and building material in the food eaten. The food does not, however, all go directly into making heat and repairing tissue. Only so much as is needed is thus used, the rest is stored in

fat cells, like the coal we put in the cellar waiting to be used. The amount of tissue repair in an adult is comparatively small.

**Food Energy.**—The energy in food, which can thus be transformed into human energy, comes from the sunlight and is stored up only in plants. All animals must take energy through the plants, being unable to take it directly from the sunlight. Whatever energy or strength is found in any animal food, comes from the plant, and may be had first-hand without the animal medium. Some animal-food products, as milk and eggs, present modified forms of nutritive elements, which, when taken from healthy animals and fowls, are desirable for use.

**Minerals.**—Growing plants store up within themselves certain mineral elements in the form best adapted for assimilation by man. These elements are very essential to full nutrition. They should be taken in the form presented in vegetable products, instead of the drug store preparations of iron, lime, sulphur, phosphate, etc.

**Food Elements.**—Food elements are classified in accordance with their suitability to the various needs of the body, and comprise five distinct elements, as follows:

**Proteins.**—Proteins are foods used for tissue building in the growing body and for the repair of tissue waste in the regular body wear and tear. They are found in various foods under different names; namely, the *albumen* in the white of egg; the *casein*, or curd, of milk; the *myosin* of lean meat; the *gluten* in wheat; the *legumin* in peas and beans; and the *gelatin* in bones. While protein is a tissue builder, it is also used by the body for fuel and energy.

**Carbohydrates.**—The energy foods, or fuel foods, that cannot build tissue, are the starches and sugars,

known as carbohydrates, and the fats and oils. Starches and sugars are closely related. Starch changes to sugar in the process of digestion. In green corn the starch is in sugar form; in the green apple the sugar is in the starch form; both are changed in ripening. Starch is found in such vegetables as potatoes, and in such cereals as rice, corn, tapioca, etc. Sugar is found in various forms, as fruit sugar in ripe fruit and honey; milk sugar in sweet milk; cane sugar in cane and sugar beets; and grape sugar in grapes.

**Fats.**—The fats and oils yield heat, create energy, and build up fatty tissue. Fat is found in cream, egg yolk, some grains, nuts, and the fat of meat. Olive oil, corn oil, and cottonseed oil are examples of vegetable oils. Mineral oils are not assimilated by the body.

**Minerals.**—The mineral salts are needed for building bone and other tissues and to keep the blood normal. They are found in many whole foods.

**Water.**—The body consists of about two thirds water. The food elements carried to various parts of the body must be carried in solution. The wastes that are eliminated must also be first dissolved. Water is the natural solvent for the body. It is found in all foods, but not in sufficient quantities for the body's needs, so we must drink enough to supply the necessary amount, three to four pints or even more a day being needed.

**Vitamines.**—It has recently been found that certain essential elements, which have been named vitamins, are present in the skin or covering and particularly in the germ of grains, in fresh fruit, raw milk, egg yolk, and fresh vegetables. Fine flour, polished rice, and many of the manufactured cereal products lack these elements, they having been eliminated in the process of manufacture. The lack of these important

elements leads to scurvy, beriberi, and possibly pellagra and other serious disturbances.

**Digestion.**—The body is nourished by the food which is digested, not simply by what is eaten. To serve the body needs the food must be absorbed through the walls of the alimentary tract and assimilated. Not until assimilation takes place does food really become a part of the body.

The alimentary tract may be viewed as a long tube passing through the body, with various bends, shapes, and enlargements. Food may, and sometimes does, go clear through this thirty or thirty-two feet of tube practically unaffected.

The process of digestion begins in the mouth, where the food is masticated, or chewed, and where the saliva begins its digestive action upon the starch. The first and last steps of digestion, chewing and evacuation, are the only voluntary ones. Teeth are provided for chewing, and no other provision is made in the system for masticating, grinding, or crushing the food. The stomach has no teeth. The more time the food remains in the mouth, the less time, within certain limits, does it need to spend in the stomach.

The food is next swallowed through a tube called the esophagus into the stomach, where it is moved about by the contracting muscular action of the stomach walls, and is mixed with the gastric juice, becoming more soluble. The digestion of the protein is partly effected by the chemical action of the gastric juice. Slight absorption of digested food through the stomach walls takes place.

The food passes little by little into the small intestine, coming in contact with the bile from the liver, the pancreatic juice from the pancreas, and the intestinal juices from the small intestine. The fats are di-

gested here, and the digestion of all the foods is completed. Absorption continues throughout the small intestine, and next in the large intestine, both of which present a large surface for absorption.

**Bulk.**—An important diet consideration is bulk. The alimentary tract requires a certain amount of mass material to give it work and keep it in running order. If it is not given work to do, it ceases to act, and constipation is the result. The cellulose, or woody fiber, of grains and vegetables affords bulk. It also gives stimulation to the muscular walls of the tube, so that they contract and keep up the rhythmic motion or peristaltic action. Such leafy vegetables as lettuce, spinach, celery, and cabbage are valuable in that they help to “sweep” out the digestive system like a broom.

**Simplicity.**—While a variety of foods is required in order to provide a balanced diet and supply all the elements needed, it should be provided at different meals with only a small variety at a single meal. Dishes into the composition of which many ingredients enter are not to be recommended. Simplicity in variety and preparation is one aid to good digestion. A good plan is to have one meal in which the fruits with cereals predominate, and another in which there are vegetables in abundance. One meal might consist largely of bread and milk or cereal and milk. This would give variety without improper combinations.

Among the improper combinations are fruits and vegetables; large quantities of milk and sugar; and for some persons acid fruit and milk. Many of the vegetable “roasts” and other combinations of a number of ingredients are difficult of digestion for any but vigorous stomachs. Nuts should be used sparingly, either raw or in combination with cooked foods.

While food should be simply prepared, free from grease, spices, and rich seasoning, it should be well pre-

pared and palatable. A good part of food digestion is in its enjoyment. It has been shown, both with animals and man, that the state of mind influences greatly the character of the digestion. Any unfavorable emotions retard digestion. For this reason everything connected with the meal that is pleasant and attractive will make for better digestion.

**Hasty Eating.**—One of the most serious faults is hasty eating, bolting the food without proper mastication, and perhaps washing it down with water or other fluid. There are two extremes as regards the rapidity of eating: bolting and Fletcherizing. There is a happy medium.

**Drinking at Meals.**—This practice does not make for the best mastication of food, and in many cases the addition of fluid is a hindrance. It is much better to drink between meals.

### **Points to Be Emphasized**

It is the actual nourishment contained in food that nourishes the body, not our likes or dislikes.

Nothing can be substituted for food elements.

All food elements are found originally in vegetable or plant form. The cow has a better apparatus for digesting grass than man, so we let the cow eat grass for us, and we get the salts and vitamins in a concentrated form in the milk and other dairy products.

Drug-store preparations of lime, phosphate, or iron do not take the place of the natural mineral elements found in foods.

We may control, to a degree, the rest of the alimentary tract if we control the first three inches.

Swallowing bits of unchewed food means trouble—about thirty feet of it.

Don't be anxious about keeping the hands busy while at the table; let the jaws do most of the work.

It is better to eat less food, but to eat it more.

**Demonstration.** — Sample menus, simple balanced and complex unbalanced; natural and denatured foods.

**Supplementary Reading.** — “The Way to Health,” pp. 71-98.



PRODUCTS OF GARDEN AND ORCHARD

## M E N U S

THE family menu will be much better balanced, and at the same time cheaper, if it is built around a nucleus consisting of a liberal amount of bread (or cereal) and milk. Dietitians are usually agreed that not less than a quart of whole milk a day should be furnished for each member of the family. Milk and its products constitute the best and cheapest source of animal protein, besides containing other necessary nutrients which are deficient in meats and cereals. In addition, the diet should, as far as possible, contain a liberal quantity of green vegetables.

The following skeleton menus may be used to develop a large number of balanced menus. Following the skeleton menus are given a few sample menus.

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### SKELETON MENUS

Breakfast: Cereal and Milk (or Cream), Bread, Butter, Fruit, Cereal Coffee.

Dinner: Soup, Vegetables (two or three), Salad, Dessert, Bread, Butter.

Lunch: Bread or Cereal, Milk (or Cream), Fruit.

## SAMPLE MENUS

## BREAKFAST

Cracked Wheat with Milk or Cream  
 Whole-Wheat Gems with Butter  
 Fruit            Cereal Coffee            Almonds

## DINNER

Cream of Celery Soup  
 Bean Croquettes, Brown Sauce            Baked Potato, Egg Gravy  
 Tomatoes            Bread            Butter  
 Fruit Mold

## LUNCH

Bread and Milk            Dates

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## BREAKFAST

Omelet            Nut Cream Toast            Milk  
 Corn Bread            Butter  
 Cantaloupe

## DINNER

Vegetable Bouillon  
 Browned Potatoes            Green Peas  
 Lettuce and Cottage Cheese Salad  
 Graham Bread            Butter            Cereal Pudding

## LUNCH

Shredded Wheat and Milk            Banana or Raisins

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## BREAKFAST

Cereal and Cream            Fruit Toast            Cottage Cheese  
 Whole-Wheat Sticks            Grape Fruit or Orange

## DINNER

Cream of Corn Soup  
 Spinach with Egg            Buttermilk  
 Bread            Butter  
 Apple and Celery Salad with Golden Dressing  
 Strawberry Fluff            Olives

## LUNCH

Cereal or Bread and Milk            Figs



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PICKING CURRANTS

## LESSON XIII — DIET AND DISEASE

THE importance of a balanced dietary has already been considered in part. Diet as a whole plays a large part in the production of health or disease. In sickness, food and feeding are of the highest importance, for the diseased tissues must be rebuilt by suitable food prepared so that the body can digest and assimilate it.

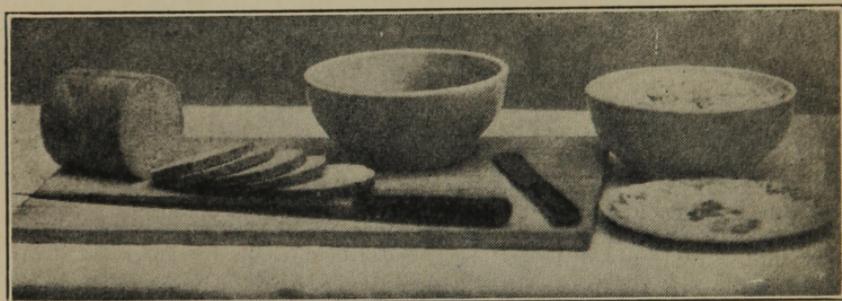
**Health and Food.**— Perfect health is dependent upon proper nutrition. It is now known that many diseases, especially some of those most difficult to cure, are the result of inadequate nutrition. Diet and nutrition are recognized as essential subjects in the education of the nurse. A knowledge of food values and of the proper preparation of food is essential to every woman having any responsibility in the feeding of others. Every individual who eats should know the fundamental principles of nutrition for his own sake. Every nurse, whether home or graduate, should be prepared to give instruction on what and how to eat.

Some foods, especially among the grains, contain most of the elements of nutrition needed in the body. Other foods are very rich in certain elements, and are wholly lacking in others. A varied diet of fruits, grains, nuts, and vegetables, supplemented by good milk and eggs, will furnish a complete and wholesome dietary, providing all the elements of nutrition. Every condition of season, climate, and occupation can be met by a wise selection from the wide variety of good things here offered.

Good sense should be exercised in selecting food suited to individual taste and needs. Food fads should be carefully avoided. Extreme notions should not be

allowed to rob one of needed food elements; too much is dependent upon proper feeding to risk untried experiments. Other things being right, a well-balanced diet, properly prepared and eaten as it should be, will keep one in health. All other things being right will not make up for an inadequate diet.

**Food Preparation.**— With the question of the composition of food must be considered that of its preparation, for perfectly good food may be spoiled by poor



Making Round Cottage Cheese Sandwiches

cooking. Foods may be overcooked and their nourishing properties more or less destroyed. While a number of foods are better eaten raw, others are improved by cooking, but such foods should be cooked sufficiently.

**Grains.**— Grains should be cooked long enough to break up the starch cells to permit of the salivary digestion of the starch. The saliva acts very slowly on raw starch. Cooking grains only enough to moisten and thoroughly warm them makes them more likely to ferment than if they are eaten raw. Oatmeal and other cereals should not be sticky, as this shows the presence of partly cooked starch. They should be cooked at least forty minutes. They are better cooked several hours, for then the starch is more nearly dextrinized, or changed to sugar, making their digestion easier. The

use of a double boiler permits the cooking of grains any length of time. They may be cooked at a previous meal or set on the warm stove the evening before they are to be used.

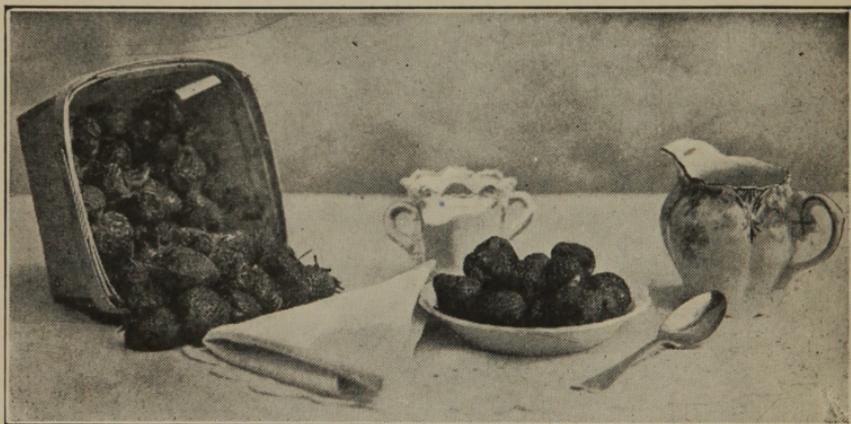
**Grease.**—The free use of grease in cooking is objectionable, especially in the cooking of starchy foods. The coating of the starch cells with grease makes them impervious to the action of the saliva. Fat is not digested until the food leaves the stomach; thus the starch digestion is delayed, giving rise to fermentation and other digestive troubles. Intestinal digestion is made more difficult. If grease is used boiling hot, as in frying doughnuts, it is less objectionable than otherwise, as it immediately forms a crust and prevents the grease from soaking into the food.

**Spices.**—Spices and condiments destroy the natural delicate and distinct flavors of foods, which flavors would be pleasing and beneficial to the normal appetite and digestion. The appetite in time loses its taste for the true flavors of grains, fruits, and vegetables, and becomes dull, thus demanding increased prodding or stimulation by vinegar, mustard, pepper, and salt. Instead, the appetite should find zest in the natural and delicious food flavors. The use of salt is largely a habit, and when excessive is harmful. Spices, condiments, and too much salt cause irritation and inflammation of the sensitive linings of the alimentary tract. They add no food value.

**Soda.**—In the study of conditions causing pellagra it was found that unneutralized soda at high temperature destroys certain of the vitamins. It also decreases the secretion of the pancreatic juice. It is a chemical, not a food, and its use is harmful, causing inflammation of the stomach lining and poisoning of the system. It may be argued that soda is neutralized by sour milk

in the making of breads; but it is difficult, outside of the laboratory, to combine soda and sour milk in just the right proportions to do this effectively.

**Pickling.**—When cucumbers, which ordinarily are not difficult of digestion, are pickled in vinegar, they become indigestible, and are treated by the body as foreign substances. Pickling is a preserving process, the fibers of the fruit being hardened by vinegar or salt in brine, so that germs cannot attack them. This pick-



Strawberries with Cream

ling process may have more or less the same effect on the tissues and cells within the system. Vinegar is not a natural element for the body.

**Sugar.**—While sugar is a concentrated food, being 100 per cent carbohydrate, it may in solution be changed by fermentation, forming alcohol. Starches are naturally converted into sugar. A properly balanced dietary supplies all the sugar that the body needs. The free use of candy, sirups, sweet puddings, pastries, jellies, jams, etc., gives an excess of sugar. Acidity in the stomach, gastric catarrh, liver and kidney disorders,

are the result. Large quantities of milk and sugar in combination should especially be avoided.

**Dietetic Errors.**—Not only *what* we eat, but *how* we eat is important. Overeating is perhaps the most harmful of all our dietetic errors. As we have already learned, it is the food that is digested that nourishes. An excess imposes a burden upon the digestive organs, and adds to the work of various other organs, especially those of elimination. These overworked organs are unable to do their normal work, and in consequence both functional and organic disease may result. The fermentation of excess and putrefying food produces poisons affecting the entire system. Probably more diseases are caused by overeating than by any other one thing.

Eating between meals is destructive to any digestive system. Flatulence and other digestive disturbances may not be due so much to the food eaten at the regular mealtime as to the way it is eaten and what is eaten between meals. The stomach is a muscular organ, and it needs periods of rest the same as other muscles. The gastric glands also require time for the formation of their juices, essential both to the recuperation of the glands and to the normal strength of the digestive juices. A good digestion requires regularity in habits of eating. Irregularities upset the normal appetite and take away the real enjoyment of eating.

Hasty eating prevents thorough mastication and encourages overeating. Late and large suppers impose too long hours on the digestive organs, and interfere with sleep. Food or drink taken very hot is debilitating to the stomach, much in the same way that prolonged hot baths are weakening.

**Tea and Coffee.**—These offer no nutrition, except in the sugar and milk which they may contain. They are not foods, but contain stimulating poisons, which at

first exhilarate and excite the nerves of the stomach, then of the brain, the heart, and the entire system. The after-effect is weakness in proportion to the stimulation. The demand for them constantly increases, and a habit is formed that is difficult to break. This in itself should be sufficient warning against the use of these beverages. The repeated stimulation of the nervous system to forced energy means overwork. Nervous vitality is drawn upon until general nervousness results. Headache, sleeplessness, heart palpitation, indigestion, and various other ills are caused by the use of tea and coffee.

**Flesh Foods.**—The value of flesh as food is greatly overestimated. Meat is recognized by many authorities as unnecessary, all the elements of nutrition being found in nonflesh foods. The animal builds tissue out of what it eats, and adds no nourishment to that contained in the foods upon which it lives. On the contrary, the growth and energy of the animal draw upon the food thus used. When man eats the flesh of the animal, he gets but a small part of the nutriment contained in the original grain which the animal ate.

While meat is minus the nutritive elements required for the sustenance of the animal, it has a plus quantity of impurities derived from the broken-down animal tissues. Some of these impurities are highly stimulating, but not nourishing. The nourishment of meat is in the muscular fibers, and not in its juices. The poisons contained in the extractives of meat add to the work of the eliminative organs of the meat user. Normally, these organs have full work in the elimination of the normal body wastes, which include the products of tissue breakdown. The added work of disposing of the waste products contained in a flesh diet is productive of disease of the eliminative organs.

Many animals are diseased; and while some measures are taken toward meat inspection, they are not rigid, and much meat is placed on sale that is more or less unfit for use, even from the standpoint of its disease risk. Tuberculosis and cancer are among the diseases sometimes directly traceable to flesh eating.

### **Points to Be Emphasized**

Common sense is a splendid thing to use in menu making.

Cooking is a high calling, worthy of any woman's study.

Eating is more than a mere matter of putting food into the stomach two or three times a day.

Substituting vinegar, pepper, mustard, and spices for the natural flavors of foods, is no improvement. Neither does it remedy poor cooking.

Stimulants act as whips to the system. Whipping a horse gives him no strength.

Tea and coffee are drugs, not foods.

The "savory" flavors of meat are in the meat juices. If the meat were placed under running water until washed white, these flavors would be missing, and the meat would not be much relished.

**Demonstration.**—Laxative foods — agar-agar, bran, etc.; properly and improperly cooked cereals; 100-calorie portions of various foods.

**Supplementary Reading.**—"The Way to Health," pp. 105-118, 157-168.



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WELL NOURISHED, AND READY FOR A FROLIC

## LESSON XIV — FEEDING OF INVALIDS AND CHILDREN

**Responsibility of the Nurse.**— The proper feeding of the sick is one of the most important duties of the nurse. This includes the choice, preparation, and serving of the food. Failure in any one of these particulars may mean loss of the patient's appetite; and upon the



An Invalid's Tray

appetite depends much of the power to digest; and upon the proper digestion and assimilation of food depends much of the patient's chance for recovery. The nurse should take personal supervision of the patient's diet. She may choose articles from the family menu, but extra dishes should be prepared by her, and she should set the tray.

During any illness the digestive function is more or less impaired, even though the disease may not directly involve the stomach or intestines. The forces of the body are being taxed to fight disease, and should not be

called upon to perform as heavy duties as usual in connection with the ordinary bodily functions. For this reason the diet should be simple yet nourishing, and such as can be easily digested.

Diet for the sick is classed as liquid, soft or semi-solid, light, and general. The diet should be prescribed by the physician in all serious illnesses.

**Liquid Diet.**—This is used in cases of fever, disease of the stomach and intestines, and in any disease accompanied by great weakness and prostration; also for the first day or so following a surgical operation or confinement. Liquid diet includes milk, albumen water, broths, strained soups, thin gruel, and fruit juice. Liquid diet should be given at more frequent intervals than solid foods, and at regular times. The patient can usually take six or eight ounces every two or three hours, but the home nurse should obtain specific directions from the physician as to the amount and times of feeding.

**Semisolid, or Soft Diet.**—This includes milk toast, soft-cooked eggs, thoroughly cooked cereals, ice cream, custards, junket, and gelatin. This diet is usually allowed such patients as are not suffering from disease of the alimentary tract, or do not have a high fever.

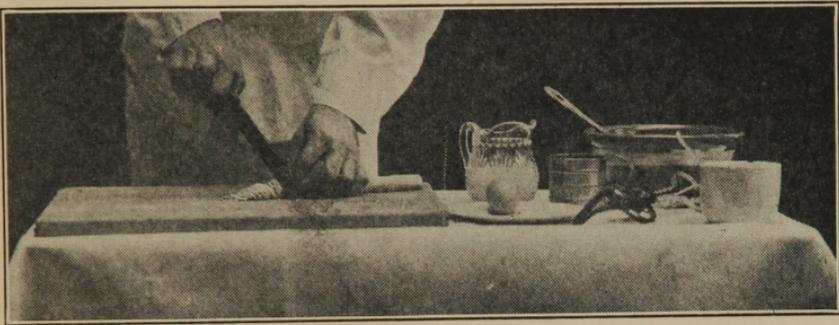
**Light Diet.**—This includes the articles mentioned under liquid and soft diets, with baked or mashed potato, simple dessert, fruit, bread, crackers, and vegetable purée. Light diet is given during convalescence.

**General Diet.**—This includes all foods except those most difficult to digest, such as beans, cabbage, etc., and is allowed in such cases as fracture.

In some cases overfeeding must be guarded against. The amount of food taken daily should be accurately recorded and reported to the physician, that he may order either decrease or increase in amount. Great patience and tact will be needed on the part of the nurse

to induce some patients to take sufficient nourishment. She must study her patient's appetite, tempting it in every way possible. Surprises often appeal to a delicate appetite, when the patient would refuse the food absolutely if she knew what was coming and had time to think about it. Simple dishes are much better than complicated mixtures, both because they are more easily digested and because they are more tempting.

**Preparation of Food.**—After choosing food which is nourishing and may be easily digested, the preparation is very essential. Perfectly good food may be



Cutting Noodles

ruined in its preparation. It should be well cooked and properly seasoned. Better have too little salt than too much. Baked foods should be served as soon as done. Hot foods should be served in heated dishes, cold foods in chilled dishes. To insure crispness, celery and lettuce should be thoroughly washed and kept in a damp cloth in the refrigerator until time for use. Fresh fruits should be well washed.

**Serving.**—After food has been carefully chosen and well prepared, it must be nicely served if it is to appeal to the patient. Many times a sick person is turned against food because it is served in too generous helpings. It is better to serve in moderate or small serv-

ings, and have the patient ask for a second helping of some favorite dish, than to serve too much. Everything about the tray should be attractive and dainty. The dishes should be thin, prettily decorated china. In prolonged illness it is well to have enough dishes so that the set may be changed occasionally. The silverware should be kept polished, the linen immaculate. In homes where perfectly clean linen is not always available, it would be better to use white or dainty paper napkins. The tray should be large enough so that the dishes need not be crowded or set one upon another. The dishes should be arranged similarly to a place at the table, and in such a manner that the patient may easily reach those articles most frequently needed, such as the cup and saucer, drinking glass, salt shake, and butter chip, while the bread plate, the creamer, and the sugar bowl may be placed at the left. A delicate spray of flowers, the color of which will harmonize with the coloring of the dishes or the food, will add much to the beauty of the tray.

**Feeding the Helpless Patient.**—When the patient is too ill to feed herself, the nurse should prop her up slightly, place the tray at the head of the bed, protect the gown and pillow with a napkin, and feed her, taking care to feed slowly enough so that the patient will not feel hurried. Watch the patient to see how she likes her food, whether she wishes all of one kind and then another, or part of one and then another. If possible have the tray where the patient can see it. In putting food into the patient's mouth, put it well in so that she will not have to reach out for it.

**Feeding Children.**—Infants thrive best by far on mother's milk. The next best source of food is a healthy wet-nurse. It should be ascertained for certain that she does not have some communicable disease. Third in

value is the milk of some animal, usually the cow, modified so as to be as near like mother's milk as possible, and possibly Pasteurized or boiled. Pasteurizing consists in bringing the milk to 167°, keeping it there for twenty minutes, then cooling rapidly to 45°. With cow's milk there is danger of disease from a diseased cow, or through germs getting into the milk when it is handled. When boiled or Pasteurized milk is used, scurvy is prevented by giving the juice of an orange daily.

When the teeth begin to appear, we may know that some starchy food will be tolerated. First there is added a little cereal to the milk, given first in liquid form, later in solid form, the proportion of cereal being gradually increased. For the first five years the child should receive about a quart of whole milk each day, in addition to whatever other food is taken. Soon after cereal is given, it is proper to add a little fruit juice; then later, if the baby is not disturbed by it, a little fruit pulp, mashed so that there are no lumps. Most troubles with fruit are due to the small lumps. Later a little vegetable pulp may be given. Cauliflower is good for this purpose, or squash, or potato, as they are easily mashed.

The diet of the school child should consist largely of milk, cereals, fruit, and vegetables, in proper combination. The less of sweets and pastries, the better. Candies in any quantity unbalance the diet, and destroy the appetite for more wholesome food.

Children should be early taught that the mouth is for food and drink only, and never for anything that has been in any other mouth, even mother's. They should also be taught that they do not need to "piece" between meals, but to eat at regular times of the foods that are good for them, not just what may meet their fancy. There is no reason why a child should not enjoy

good, wholesome food if he has not been eating sweets, pastries, drinking soft drinks, and so on, between meals.

### **Points to Be Emphasized**

To prepare food for the patient is one of the nurse's most important duties.

Food must be simple and easy of digestion, as the digestive function is impaired by illness.

Food for the sick is classed as liquid, soft, light, and general.

Patients seriously ill should have liquid diet; those not so ill, soft diet; convalescents, light diet.

Nurse must guard against overfeeding as well as underfeeding patient. Should keep accurate record and report to physician.

Do not tell the patient beforehand what she is to have.

Serve simple foods rather than complex mixtures.

Food must be well prepared and nicely served.

Plenty of time and care must be taken in feeding helpless patients.

Mother's milk best for babies.

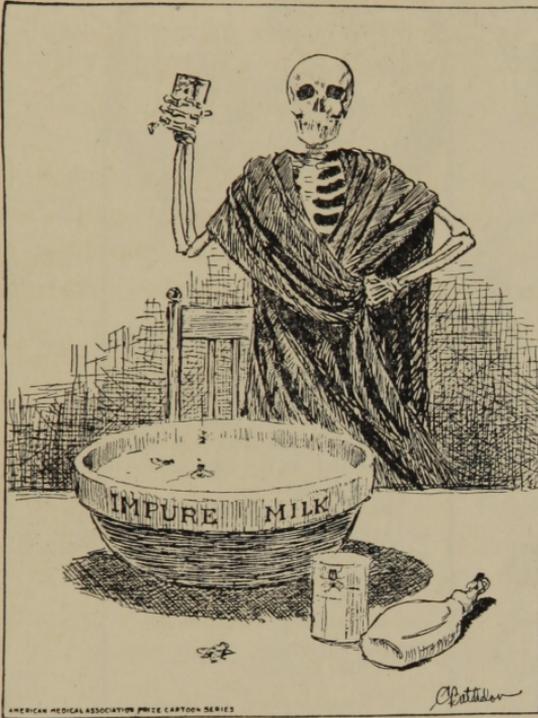
Appearance of teeth an indication that foods other than milk may be given.

School children should have a diet of milk, cereals, fruit, and vegetables, and should avoid sweets and pastries.

Children should not eat between meals. They should be taught to like what is wholesome.

**Demonstration.** — Samples of liquid, soft, light, and general diet — last two may be sample menus only; setting of the tray; feeding the helpless patient.

**Supplementary Reading.** — "The Way to Health," pp. 110-116, 118-120, 127, 128, 439-444.



AMERICAN MEDICAL ASSOCIATION PRIZE CARTOON SERIES

"I DRINK TO THE GENERAL DEATH OF THE WHOLE TABLE"

**IMPURE MILK**

# MOTHER'S MILK FOR MOTHER'S BABE COW'S MILK FOR CALVES

(God's Plan)



## The Long vs. The Short Haul

70 percent of city babies get their food through a tube 60 miles long.

It takes about 36 hours—often 42 hours—for the milk to run from the cow end of the tube to the baby end of the tube.

This tube is open in many places and baby's food is frequently polluted. It is often wrongly kept in overheated places.

Then there may be a diseased cow at the country end of the tube.

And Yet Some People Wonder Why So Many Babies Die!

On the other hand the mother-fed baby gets its milk fresh, pure and healthful—no germs can get into it.

To Lessen Baby Deaths Let Us Have More Mother-Fed Babies.

You can't improve on God's plan.

For Your Baby's Sake—Nurse It!

By Courtesy of Chicago Board of Health.

## LESSON XV — CARE OF THE BABY

BABIES and young children are much more susceptible to environment and disease than are adults. The mother is responsible for the health of the helpless infant, and she should acquaint herself with the simple rules governing food, clothes, rest, exercise, bathing, elimination, and environment. Instinct is not a safe guide for any mother. Men who raise fine live stock do not depend on instinct, but make a study of the care and raising of these animals. Babies are more important than animals, and need at least as intelligent care as do cattle, hogs, and chickens. There is no animal so helpless and dependent on mother-care at birth as the baby.

In the registration area of the United States 14 per cent of the babies born die before they are one year old, and in some of our large cities the rate is as high as 25 per cent. Most of these deaths could be prevented by proper care and feeding. Ignorant mothers and contaminated milk are the chief causes of these deaths.

**Prenatal Care.**—The care of the baby should begin nine months before birth. It has been demonstrated that proper prenatal care lowers the death rate of babies very materially. As soon as a woman knows that she is to become a mother, she should place herself under the care of a competent physician. Any symptoms which she may not understand should be reported at once. Especially should she see him at once should she have severe headache, with dizziness, blurring of vision, nausea, and puffiness of the face. These symptoms may indicate trouble with the kidneys, which would cause the death of both mother and child if not promptly cared for.

During pregnancy the woman should take even better care of herself than usual, for she is now responsible for two lives. Her food should be simple and nourishing; she should have plenty of rest, and daily outdoor exercise; her environment should be pleasant and free from worry.

The layette for the baby should not be so elaborate that the making of it takes the time that the mother needs for rest and exercise. The old idea that a child may be marked by a mother's unsatisfied craving for some article of food, by fright, or by some very unpleasant sight, is not well founded. The entire life and character of the parents has more to do with the appearance and character of the child than the nine months just prior to birth.

**Birth Registration.**— The birth of every child should be registered, whether required by law or not. The physician should do this, but if he does not, the parents may do so. There is a registrar in each district who will issue a birth certificate when the birth is registered. This should be done within ten days after birth.

**Care of Eyes.**— As soon as the baby is born, the eyes and mouth should be cleansed with a saturated solution of boric acid. This solution is made by dissolving as much boric acid powder or crystals in sterile water as the water will take up. The navel should be dressed with sterile dressing, and the body cleansed with warm olive oil or albolene. The doctor should then put drops of silver nitrate solution in the eyes. If he does not do this, he should be asked to do so, but the home nurse should *never* attempt to do it herself. This care of the eyes is most important. It is estimated that at least 25 per cent of the blindness in this country could have been prevented by proper care of the eyes at birth.

**Clothes.**— The baby's first clothes should be simple, consisting of band, shirt, diaper, flannel skirt, and slip.

The band should be of soft flannel, five inches wide and fifteen to eighteen inches long. This should be torn off, or pinked on the edges, not hemmed. It should be put on smoothly, and snug enough to support the abdomen and navel, but should not constrict the bowels or lungs. After the first two or three months this may be replaced by a knitted band to be worn until the baby is eighteen months old. The skirt should be of silk and wool, or linen and wool, as all wool shrinks badly and might be irritating. The diaper should be of soft, absorbent material, and so adjusted that it does not bind. Great care should be taken in washing the napkins, to see that every trace of soap is rinsed out, and that they are thoroughly dry before using. Napkins insufficiently rinsed will cause irritation and chafing. The skirts and slips should be made to hang from the shoulder, and loose enough to allow the baby to move his legs and arms freely. The first clothes should not measure more than twenty-seven inches from the shoulder. The baby should always be kept dry and warm, but not so overdressed that he will perspire, for he will then be liable to take cold. At bedtime the clothing should be changed throughout.

**Weight.**—The usual weight at birth is from seven to seven and one-half pounds, and during the first week there is usually a slight loss in weight. After the first week the baby should gain from four to eight ounces a week. The weight is very important in judging as to the baby's progress. He should be weighed once a week during the first six months. There may be times during the hot summer months or when the baby is teething, that he will just hold his own; but if any marked deviation is shown from the normal course, it should be reported to the physician.

**Excretions.**—Care should be taken to see that the bowels and kidneys act during the first twenty-four

hours. The fluid in the mother's breasts at the time of confinement acts as a laxative to the baby, and for this reason he should be put to the breast after the mother has had a few hours for rest. After the first few days the bowels should move two or three times daily.

**The Bath.**—At some convenient time during the first twenty-four hours, and thereafter daily, the baby should have a soap-and-water bath, using castile soap, and water at about 100°. Everything should be within easy reach before beginning the bath. The room should be warm and without drafts. If the baby is laid on a pillow covered with a blanket, and the pillow placed on a table, the mother or nurse will have both hands free with which to work and the baby will feel more secure than on the lap. The eyes and mouth should be cleansed with boric acid solution, the head and face washed, then the body. Until the navel heals, the bath should not be given in a tub, for the cord must be kept dry. When the tub bath is given, after washing the head and face, soap the body over thoroughly and then lower the baby into the water, supporting the head and neck with the left hand. After thoroughly rinsing off all soap, lift him out, wrap in a soft absorbent towel, and dry thoroughly by patting. The groins and armpits should be especially dried and dusted with powder. Should any chafing occur, use stearate of zinc powder, for this forms a waterproof covering for the skin. After the shirt, diaper, and band are on, slip the petticoat inside of the dress, and draw the two on over the feet together. The bath should never be given within an hour and a half after feeding, as it will interfere with digestion. The soap, towels, and wash cloths used should be kept for the baby's use exclusively.

**Sleep.**—During the first few months the baby should sleep most of the time. He should have a well-aired, sunny room, and be taken out of doors each day unless

it is stormy or windy. His eyes, both when awake and asleep, should be protected from bright light and the direct rays of the sun. He should also have a comparatively quiet place, for even though he may not be awakened by noise, his nerves are very sensitive and will be affected. Drafts and sudden changes in temperature should be avoided. He should always be protected from flies and mosquitoes. Pacifiers are positively injurious, for they cannot be kept sterile, and the constant sucking overstimulates the flow of saliva and interferes with digestion. Thumb sucking is injurious for the same reasons, and both habits misshape the mouth, disarrange the teeth, and predispose to adenoids. Soothing sirups should never be used; they have killed many babies.

**Feeding.**— Mother's milk is by far the most ideal food for babies, and unless the mother is suffering from an infectious disease, or has breast abscess, or the milk persistently disagrees with the child, every baby should have the advantage of this food for at least the first few months. Three times as many bottle-fed babies die as breast-fed. If for some good reason bottle feeding is necessary, a formula suited to the baby's age and needs should be obtained from the physician. Great care must be taken also of the bottles and nipples. As soon as a bottle is used, it should be washed and rinsed thoroughly, and boiled before refilling. It is most convenient to have as many bottles as feedings during the twenty-four hours. The bottles can then be boiled once daily, filled with the proper amount for each feeding, stoppered with absorbent cotton or sterile corks, and kept in the ice box until needed. The nipples should be washed inside and out, and kept in a saturated boric solution.

When ready to be used, the bottle should be warmed by setting it in a quart cup or pan of hot water. The

temperature of the milk can be tried by dropping a drop on the back of the hand. Never should the mother or nurse put the nipple in her own mouth. Care should be taken to see that the milk fills the nipple entirely while the baby is eating, and the bottle should be removed as soon as empty, to prevent the baby's swallowing air.

The feedings during the first six months should be at intervals of two and one half to three hours during the day, with one or two feedings at night. After six months the daytime interval should be lengthened to four hours, and not more than one feeding should be given at night. Regularity should be observed in the time of feeding, and the baby should not be left at the breast or bottle for more than fifteen or twenty minutes. Cooled boiled water should be given two or three times a day, either with a spoon or from a bottle. A drink of warm water will sometimes satisfy the baby if he awakens and seems hungry before his regular feeding time.

**Indigestion.**—Should curds frequently appear in the bowel movements, or other signs of indigestion persist, or if the infant does not show a normal gain in weight, the milk should be analyzed by the physician and the composition of the milk changed by regulating the mother's diet. Usually any food which agrees with the mother will cause no indigestion with the baby. This applies to acid fruit as well as other fruits and vegetables. It should be remembered that belching up of soft curds soon after nursing generally means that the baby has eaten a little too much, and does not indicate indigestion.

**Colic.**—If the baby has colic, the cry will be sharp, the knees drawn up, the abdomen distended, and the feet usually cold. The treatment for colic is removal of the cause. The feet should be warmed, and a warm flannel or water bottle placed over the abdomen. If

he has just eaten and has gas in his stomach, he should be held over the shoulder and gently patted on the back, which will usually give relief. If the trouble is in the bowels, a small warm injection should be given. For the injection, use a fountain syringe, hung about a foot higher than the baby, and a soft rubber catheter, which will allow the water to run in and out without distending the bowel.

**Crying.**— It should be remembered that part of the baby's necessary exercise is crying. He should not be picked up every time he cries. If on taking him up he immediately becomes quiet, one can be quite certain that that is what he wanted, and he should be taught a lesson. Be sure, however, that his clothes are comfortable and his feet warm, that he is not thirsty, and that he does not have the colic, before deciding to let him "cry it out."

**The Bed.**— The baby should have a bed to himself. This is absolutely essential to his health. For the first few weeks a clothesbasket makes a very good and inexpensive bassinet. While the basket is being used, a firm pillow may be used as a mattress, but for the bed a hair mattress is best. This should be protected with rubber sheeting and a quilted pad. The covers for the bed should be light weight, and so tucked in that they will not come loose during the night, yet will allow room for the baby to kick and move about. The bedding should be aired and sunned frequently, and the rubber sheet and pad kept sweet and clean by washing.

**General.**— In lifting the baby, the neck and head should always be supported by the hand. Not until he is seven or eight months old is he able to sit up, and he usually begins to walk between fifteen and eighteen months. A child should not be *urged* to walk before he is inclined to try. The bones are pliable during infancy, and bowlegs are often caused by allowing a baby

to stand or try to walk before his legs are sufficiently strong to bear his weight.

A baby should never be kissed on the mouth. The less handling and kissing the better, especially by those outside his own family. Jumping and jouncing may excite the baby and seemingly make him happy at the time, but is hard on the nerves and very tiring. Toys should be simple, without sharp edges or points, easily cleaned, and without paint or wool which the baby can get into his mouth.

### **Points to Be Emphasized**

Babies are more dependent on maternal care than other young animals.

Care of baby should begin nine months before birth.

Birth registration is important.

Proper care of eyes at birth prevents most cases of blindness.

Baby clothes should be simple, easily adjusted, and should not constrict the body or restrict the movements.

Weight is an important sign in the baby's progress, and should be tested weekly during the first months.

Mother's milk is the best of all baby foods.

Colic should be remedied, not doped.

Baby should sleep by himself.

**Demonstration.**—Baby's bath; simple clothes.

**Supplementary Reading.**—"The Ministry of Healing," pp. 379-387.

## LESSON XVI — COMMON AILMENTS

### COLDS

**Causes.**—No one thing can be said to be the cause of a cold, though bacteria or germs may probably always be considered *one* cause of every cold. Lowered resistance is another. Every person has some resistance or immunity against a cold, some much more than others; and this resistance may be diminished or increased. Probably most persons harbor in the nose and throat some germs capable of causing a cold in susceptible persons, so that any influence that causes one to lose his resistance will be followed by a cold, without any infection from the outside. Then there are more vigorous types of germs present in times of epidemic and in many persons suffering from colds, that are able to overcome a much more complete resistance than other types of germs. When a person succumbs because of lowered resistance, we say that his cold came as a result of sitting in a draft, or from wet feet, or from overeating, or from some other indiscretion. But when one succumbs to the more vigorous, or epidemic, type of germ, we say that he caught the cold from Mr. A. or from Mrs. X. Perhaps most of us are familiar with both methods of “catching” cold. Some persons assert that colds are caused by some circulatory disturbance; others that they are caught from germs. Both are probably right in part.

A cold is always the result of more than one cause. We may give as causes of colds:

1. *Bacteria*: (a) The milder types usually present in the nose and throat of healthy persons; and (b) the

more vigorous types present in epidemics and in the throat and nose of certain "carriers."

2. *Lowered bodily resistance*, due to (a) exhaustion from overwork, loss of sleep, excesses, etc.; (b) digestive disturbance and faulty nutrition from overeating and free use of sweets, etc.; (c) circulatory disturbance, caused by drafts, wet feet, etc.; (d) circulatory disturbance, through overheated rooms, and wearing excessive clothing while in the house; (e) irritation and congestion of the nose from impure and overdry air.

3. *Anatomical change*, favoring the harboring and development of disease germs; (a) by wrongly shaped air passages, deviated septum, enlarged turbinates, etc., affording places where mucus and débris collect and germs multiply; (b) by cavities in teeth and crypts in diseased tonsils, affording breeding places for disease germs.

**Preventive Measures.**—*Bacteria.* Avoid close contact with persons having a cold, or with members of their family or their close associates, who may be carriers, remembering that germs are coughed out into the air, and one standing in front of an infected person may get infection in that way. The germs may be passed from mouth to mouth by cups, spoons, or other eating utensils; or by hands, door knobs, and other objects. Hence avoid public drinking cups, soda fountain glasses, etc. Even the spoons in restaurants may not be adequately sterilized. Fruits and foods eaten raw may convey the germs by having been handled by a carrier. In time of epidemic, especially of la grippe, influenza, and the like, keep away from crowds as much as possible, for every crowd is liable to have some carriers.

**Resistance.**—Avoid all excess work, etc., that may lower resistance. Keep in good condition. Avoid digestive disturbance from faulty eating. Avoid other

causes of lowered vitality — overheated rooms, overdry air, drafts, wet feet, etc. Increase the circulatory resistance and the white blood cells by cold mitten friction or cold bathing.

**Defects.**—Have any anatomical defects of teeth, tonsils, and nose attended to.

**Treatment.**—*First Stage.* It is well to fast during the first stage of the disease, especially if the patient has been accustomed to hearty and perhaps careless eating. The presence in the body of surplus food material makes one an easy subject of colds, and the sooner this surplus is removed, the more favorable for the patient will be the course of the cold. It is well at the very beginning of a cold to empty the intestine. A high enema is good. Perhaps a brisk purge is even better, for it causes elimination from the blood vessels into the bowel. The next procedure is some form of sweating treatment, a full hot bath, a hot foot and leg bath, or a hot foot and sitz bath (the patient in either case being well protected with a blanket), some form of steam bath, or a dry blanket pack. The object is to get the patient into a vigorous perspiration, which will restore the circulation to the surface and relieve the local congestion. From the bath the patient should get into bed. To take such a treatment and go out into the air, is to undo the good of the treatment; in fact, a patient with a hot treatment, who is exposed afterward, may be worse off than if he had had no treatment. The patient may continue to perspire after getting into bed; have him wrap up in a blanket, thus forming a dry pack for the continuation of the other treatment.

There is a question whether a nasal spray is of benefit in the first stage of a cold, though a gargle with salt water (a teaspoonful of salt to a pint of hot water) may help to relieve the congestion. In case of epidemic

cold which may prove to be influenza or something else serious, it may be well to use an antiseptic spray to both nose and throat. This may be a saturated solution of borax or boric acid; or peroxide of hydrogen, one part to four of water for the throat, one part to eight of water for the nose.

*Second Stage.*— The thin, colorless discharge has now become thicker, white or yellowish, and more profuse. A cleansing solution is necessary to keep the nose free from secretion. Prompt treatment will often prevent the cold from reaching this stage. Spray the nose with a solution made from an alkaline tablet (obtainable at the drug store), or else make up a solution by adding a teaspoonful each of salt and baking soda to a quart of hot water. Smaller quantities can be made up if desired, in the same proportions. The spray should be used as warm as is comfortable. This same solution may be used as a gargle. It is better not to spray the nose just before going out of doors, or if it is necessary to do so, the cleansing spray should be followed by an oil spray, which may be made up of camphor, one part; menthol, one part; mineral oil, 100 parts. If this seems a little irritating, it may be diluted with an equal part of mineral oil. It is not necessary to continue the fast during the second stage, but the patient should be careful to eat sparingly, and not to eat anything which might cause indigestion.

## INFLUENZA

**Symptoms.**— The symptoms are those of a common cold; a chilly sensation; tired feeling; lameness; sore feelings all over the body; pain in the back, legs, and arms; cold in the head; sneezing; watery, red eyes; loss of appetite; probably constipation; and rapidly rising temperature.

**Treatment.**—Put the patient to bed at once, and keep him well covered. Give a cathartic or enema. Let him drink freely of water, and hot, slightly sweetened lemonade.

It is important that the patient remain in bed for a while after the temperature is normal, preferably as many days as he has had fever. Care should be taken for some time after getting up, to avoid exposure or overexertion.

Influenza is a peculiarly exhausting disease. Deaths from the disease usually result from complications, and are more frequent among those who do not go to bed early enough in the disease or who get up too soon.

**Prevention.**—As a precaution against taking the disease when it is prevalent, keep out of crowds as much as possible; avoid close housing, and the use, so far as consistent, of public facilities. Caution should be exercised to prevent infection of other members of the household. Isolate the patient, have only one person to attend him, and sterilize his dishes, napkins, towels, etc.

**Diet.**—The diet should be soft nutritive,—milk, malted milk, soft eggs, gruels, fruit juices, stewed apples and pears. The food should be well chewed.

## PNEUMONIA

This disease in some cases is very mild, and in others very severe. Next to tuberculosis it shows the largest number of fatalities of any disease. In all cases of pneumonia, or suspected pneumonia, the patient should be under the care of a physician.

**Symptoms.**—The symptoms are usually chill, rapid breathing, and a sudden rise of temperature. Streaks of blood are sometimes present in the sputum. The

patient prefers to lie on the side most involved. Usually a grunting sound accompanies each expiration.

**Treatment.**—The patient should not be allowed to sit up, but should not lie in one position too long, as that would favor the collection of fluid in one portion of the lung.

Hot hip and leg packs; fomentations to the chest and back, followed by cold compresses, may be given. Sprinkle menthol crystals on the surface of a pot of boiling water, and let the patient inhale the vapor. Eucalyptus oil may be used instead of the menthol. Rub the chest and back with 25 per cent eucalyptus oil in olive oil or mineral oil. Apply an ice bag over the heart for ten minutes every two hours. If the skin is moist and the temperature above 103°, sponge with cool water, alcohol, or witch-hazel. If the skin is dry and the patient chilly, use very hot water for sponging. The bowels should be kept open.

Important measures are rest and fresh air. Visitors should be excluded. Sleep should be encouraged. While cool, fresh air is most beneficial, drafts should be avoided. An equable temperature should be maintained.

**Diet.**—For diet give eggs, milk, cereals, and fruit juices, and give plenty of water. Avoid anything which tends to produce gas.

## TUBERCULOSIS

Tuberculosis, sometimes called consumption in the later stages, is caused by a germ which most frequently attacks the lungs but which affects other tissues as well. It is not an inherited disease, though a susceptibility to it may be inherited. Practically all adults have at some time been infected with the germs of the disease. It is held by some that the germs may become walled in and held in abeyance and harmless as long as the indi-

vidual's vitality keeps up. If the vitality is lowered by exposure, insufficient nourishment, improper housing or working conditions, long hours, or overwork, the disease germs become active.

**Symptoms.**—The symptoms of the disease are not generally definite. Symptoms that may indicate tuberculosis may be those of some other ailment, such as cough, hoarseness, loss of appetite, pain in the side, a run-down feeling, tiring easily, expectoration, and night sweats. The presence of one or more of these symptoms, while not necessarily indicating tuberculosis, may be cause enough to demand a thorough examination by the doctor. Early treatment is of the most value, and if one has the disease it is important to know it. A cough is not always present in the disease, so this symptom should not be relied upon to indicate it.

**Treatment.**—The important measures of treatment are rest, fresh air, sunlight, and suitable feeding. Milk, egg yolk, cereals, fruits, and, if the digestion will permit, vegetables, should be used in abundance.

**Prevention.**—Tuberculosis is spread chiefly through the discharges from infected persons, especially of the nose and throat, and through milk from infected cows. Prevention of the disease lies in guarding against these two means of infection, and keeping the physical vitality high.

Great care should be taken to prevent infection of others. The patient should expectorate into paper bags, cups, or rags, and these should be burned. A damp cloth should be used in dusting the patient's room, never allowing the dust to be stirred up. The room should be well ventilated, day and night. In conversing with others the face should not be turned so as to permit the fine spray from the mouth to reach the face of the other person. In coughing, the mouth should be covered,

Food left by the patient should be destroyed. Spoons, cups, etc., should be boiled and washed with soap and water.

## CONSTIPATION

This is a very common ailment, and productive of much general disturbance of the health. The reabsorption of poisons from the retained putrefying mass affects almost all the organs and impairs their functions. The circulation is impeded and the quality of the blood is lowered. Headache is common. Piles often result. Through the poisoning of nerve centers the mind becomes depressed and things look "blue."

**Causes.**— Among the causes of constipation is the use of modern milled foods, such as white flour, white rice, and processed cereals, and too little bulky foods, such as the vegetables, especially the leafy ones. Sedentary habits, neglect of the bowel call, and the use of laxatives are other causes.

**Treatment.**— The cure is a regulation of the habits. When the call to move the bowels is not promptly heeded, the desire passes away, and the peristaltic action of the bowels forces the contents of the lower bowel upward out of the rectum into the bowel. By long-continued neglect the natural desire is lessened until it disappears altogether, and chronic constipation is the result. In many cases the bowel habit may be re-established, but it will require patience and careful attention.

The graduated enema may give relief in some chronic cases. This consists of each day reducing the quantity and the temperature of the water until finally it may be left off. Begin with two or three quarts at about 95°.

A regular time should be set for going to stool, timed to the after-meal peristaltic wave, preferably after

breakfast, and it should be carefully observed even when there is no particular inclination to stool. Straining should be avoided. Maintain a hopeful, expectant state of mind.

Self-administered colon massage is beneficial and may be used while seated at stool. Follow the colon up the right side with a kneading motion, across just above the navel, and down the left side.



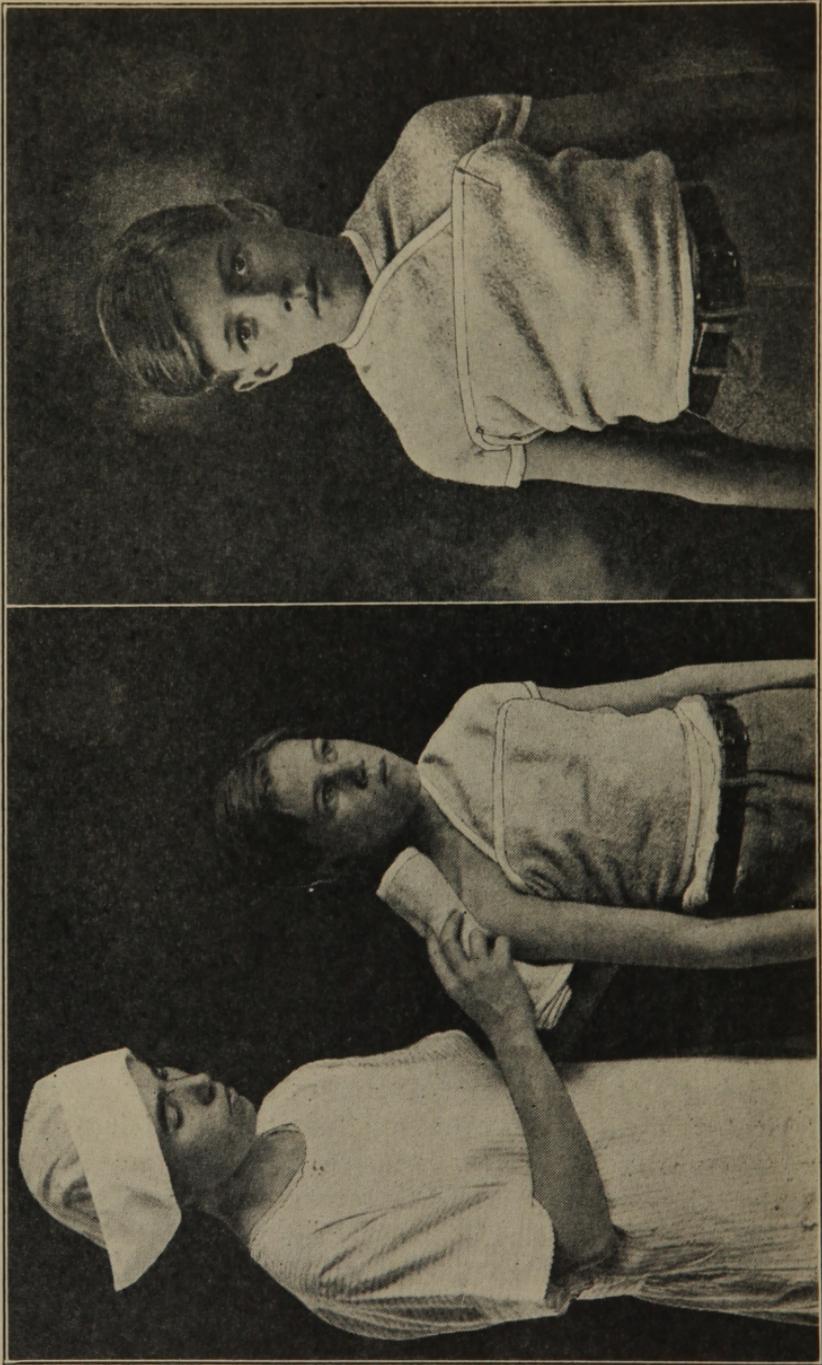
Compress to the Throat and Neck

Strengthen the abdominal walls by suitable exercises of the trunk, bending, leg lifting while lying, etc.

Pills and cathartics give only temporary relief. They act as irritants to the bowels, and as such are expelled together with the bowel content. In time the bowels become accustomed to the irritant, and are affected only by increasing doses. Thus the

demand for cathartics increases. In like manner the enema habit grows on one.

Drink freely of water. Drinking a glass or two of cold water or eating an orange before breakfast is sometimes helpful. Provide a laxative diet of whole-grain cereals, whole-wheat and bran breads, brown rice, figs, prunes, ripe olives, fruits, and fresh vegetables. Mineral oil (liquid paraffin) is recommended as a lubricant. It does not create a habit and is not absorbed. For one who is under weight, olive oil or other edible oil



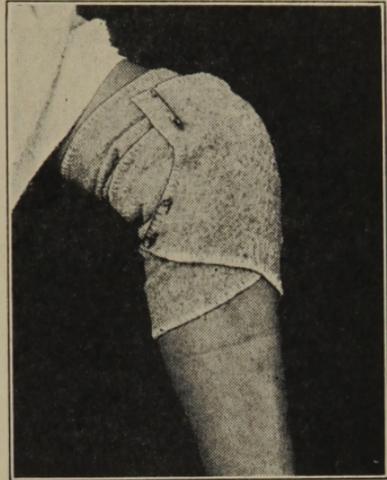
**ROLLER COMPRESS TO THE CHEST**  
Left: Applying compress. Right: The compress in place.

may be used. It will act as a lubricant, and will also be partially absorbed, and utilized.

## THE COMPRESS

**The Heating Compress.**—For the purpose of applying moist, mild heat to a given part, the heating compress is used. The articles necessary for giving this treatment are several thicknesses of gauze or two or three of thin cotton material, to be wrung from cold water, with a covering a little wider and longer than the gauze, of flannel, flannel and oiled silk, or some other impervious material.

**Chest.** — For the chest the gauze should be from three to five thicknesses, eight or ten inches wide and six to eight feet long. The flannel covering should be wider and longer than the gauze. Roll each separately. Wring the gauze roll quite dry out of cold water. Place one end over the right shoulder and breast, carry roll over shoulder, across back, under left arm, straight across front, under right arm, diagonally across back, and over left shoulder, tucking end under transverse part in front. Apply flannel cover in same manner, taking care that the gauze is well covered. This should be put on and pinned snugly so the air will not get under the flannel and cause chilling, but it should not be so snug as to compress the chest and interfere with breathing. The compress should become



Compress to the Knee

warm from accumulated body heat in a few moments. When it is removed, the chest should be thoroughly rubbed with cold water and dried.

If one does not have the material for making the roller chest pack, a pair of woolen drawers will make a very good substitute. Place over the chest a square of several thicknesses of gauze or thin cotton material wrung out of cold water. Over this place the seat of the drawers, the legs over the shoulders. Cross legs in back and bring under arms and pin securely in front. The chest should be treated the same in removing this as in the roller pack.

**Throat.**— The throat compress is very useful in sore throat, tonsillitis, hacking cough, quinsy, etc. The gauze compress should be about three inches wide and long enough to go round the neck twice; the flannel a little wider. This should be put on snugly, the flannel well covering the gauze. The neck should be bathed in cold water when the compress is removed.

**Joints.**— Joint compresses should be prepared on the same principle as the compresses described above, the size being suited to the part to be treated. Instead of the flannel, absorbent cotton may be used to cover thoroughly the moist compress, held in place with a roller bandage. Bathe the part with cold water, alcohol, or witch-hazel when the compress is removed.

### Points to Be Emphasized

Colds are infectious; the germs may be conveyed in the spray from the nose or mouth in sneezing, coughing, and even in talking.

Keeping the body strength at par is the surest safeguard against germ infection.

Treat colds, influenza, and other infectious ailments by eliminating the natural poisons of the system and

those of the disease, and building up the recuperative powers of the body.

A tuberculous patient is not dangerous if proper precautions are observed.

Failure to establish right habits is an important cause of constipation and of many other ailments. A cure calls for a reform and a return to the right way.

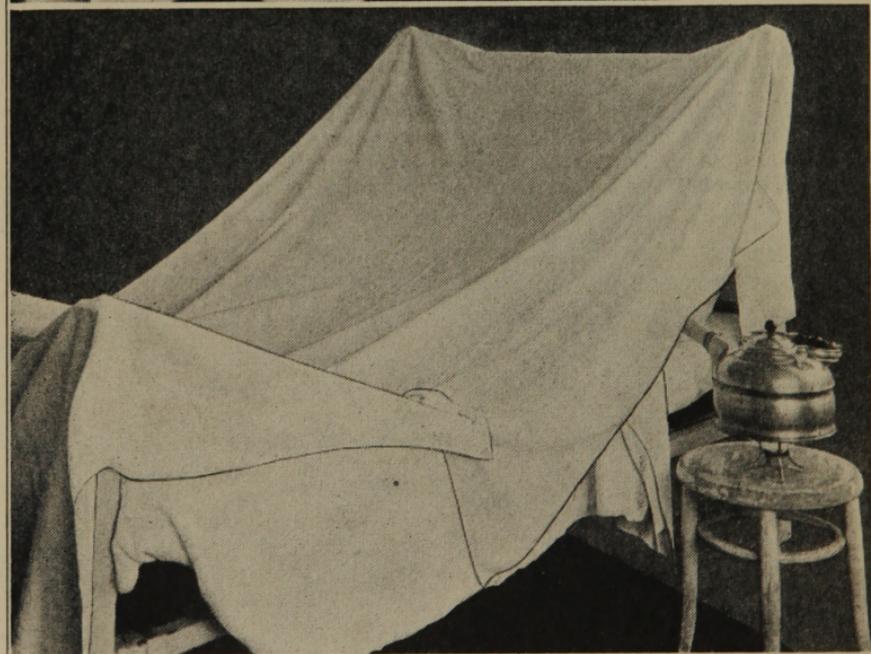
**Demonstration.**— Roller chest pack; chest pack with drawers; throat compress; joint compress.

**Supplementary Reading.**—“The Way to Health,” pp. 203-214, 97, 98, 479, 480, 482, 483.

### RESTFUL HOME

O HOME — restful home! theme of praise and of song!  
Where the heart has its refuge, unfailling and strong;  
Where the cares of the world sign a partial release,  
And the soul can lie down to a sweet sleep of peace!  
The mine where we dig out affection's pure gold,  
The fire where we warm our poor hearts when they're cold!  
The grand, tender chorus, by love's fingers stirred,  
Where all the sweet tones of the soul-life are heard!

— Will Carleton.



#### AN IMPROVISED CROUP TENT

Upper View: Sheet thrown back to show patient and tube for steam. Lower View: Croup tent closed. The teakettle is placed upon a small alcohol lamp, such as can be obtained at almost any drug store,

## LESSON XVII—CHILDREN'S DISEASES

**Mouth Breathing.**— Mouth breathing is caused usually by the presence in the upper throat of adenoids, which are spongy growths back of the nose cavities. These are found usually in children from one and one half to six years of age. When small, adenoids may cause no symptoms and are usually overlooked.

The results of the presence of adenoids are nasal discharge; snuffles; tendency to catch cold; cough, especially at night; snoring; mouth breathing; change in the shape of jaws and face, with a stupid expression; change in the voice, with imperfect enunciation; nose-bleed; bed wetting.

The only remedy for adenoids is to have them removed by a physician.

**Sore Throat.**— This is often caused by the child's getting his feet wet. Never should a child go to school in wet weather without rubbers. Sore throat may be the first symptom of scarlet fever, diphtheria, influenza, and other dangerous contagious diseases.

The only safe way in case of sore throat is to isolate the patient and call the doctor. In the meantime a hot foot bath may be given, a heating compress put on the throat, and the child put to bed.

**Earache.**— Commonly occurs in children suffering from nose and throat trouble, though it may occur in children seemingly healthy. The symptoms in very young children are restlessness, fever, crying, picking at the ear. Older children will indicate in some way where the pain is. Examination of the ear may cause distress. In some cases there is loss of appetite, fever, restlessness without evidence of pain, till finally there is

a discharge of matter from the ear, which gives temporary relief.

The treatment consists in applying heat to the ear with a small hot water bottle, or a salt bag made for the purpose. Salt is used because it retains the heat for a long time. The ear should be examined by a doctor.

**Croup.**—There are two varieties of croup,—catarrhal and diphtheritic. The latter is a form of diphtheria, and is very dangerous. In order to be on the safe side, it is better in case of croup to *call the doctor at once*, for if it proves to be diphtheritic croup, a little delay may be fatal.

Some children are subject to repeated attacks of catarrhal croup, and usually the mother learns what to do for the child. Sometimes there are premonitory symptoms—snuffles, slight cough, with some fever, followed at night or the following night by the alarming croupy cough. In other cases the croupy cough comes on about midnight without previous symptoms.

*Treatment for Catarrhal Croup.*—Put a heating compress on the throat; use a croup tent. The croup tent is made by draping a sheet or spread over the child's bed, fastening one side to the wall, and bringing the sheet down over the bed; or by fastening a short pole to each post of the bed and draping the sheet over the poles. The purpose of this tent is to make a small inclosure into which steam may be discharged from the spout of a teakettle which is kept boiling on a small oil or alcohol burner. A funnel of heavy paper placed over the spout of the kettle, should reach inside the tent. The warm, moist air will usually relieve the cough in a short time.

**Summer Diarrhea.**—This is the most frequent cause of infant deaths. It is caused by heat and unclean food.

The child may withstand one of these, but cannot combat both. All food should be stopped, giving only boiled water, and the physician should be called at once. While waiting for the doctor, a dose of castor oil should be given to help remove the offending food. This trouble is most common among bottle-fed babies. The artificially fed baby requires expert care and feeding, and should be under the supervision of a physician.

**Worms.**—Threadworms look like small bits of thread in the stools, and cause itching around the anus. Roundworm resembles an angleworm, and may cause colic, constipation, or diarrhea, and convulsions. The presence of worms cannot be diagnosed from the symptoms. Unless the worms are found in the stools, one may conclude that the condition is simple indigestion. If worms are suspected, it is better to consult the doctor. In any case, do not give a "vermifuge," or worm remedy, without the advice of a physician; for worm remedies are usually poisonous, and should never be given on suspicion.

**Teething.**—In itself teething is not a cause of disease. It may cause slight disturbance in a healthy child, more in hot weather, and especially if several teeth are coming through at one time. If the child is healthy and living on mother's milk or a good, clean substitute, the digestive disturbance will not be serious. But a combination of hot weather, teething, and dirty milk is very liable to prove serious. Usually the child on improper or unclean food is rickety, or otherwise low in resistive powers, and easily succumbs to the additional disturbance.

**Convulsions.**—Rickety and ill-nourished children are predisposed to convulsions. Digestive disturbances or the onset of an infectious disease are the chief causes. Convulsions may follow the eating of cake or pie, or

other articles of food which are difficult to digest. They are caused occasionally by worms, and rarely by teething, though in this case there is probably some digestive disturbance in addition. The doctor should be called at once.

Meantime, put the child in a full warm bath, at a temperature of 105°, with cold to the head, until relaxed. Then get the child to vomit, if possible, and give a large, warm soapsuds enema, followed by a dose of castor oil. As an emetic, use sirup of ipecac, one teaspoonful, repeated in twenty minutes if necessary. Keep the patient quiet after this treatment, with cold to the head and heat to the feet. Give no food for at least twenty-four hours, but plenty of water.

**Rickets.**— This disease is due to malnutrition from wrong feeding. The child is under weight; bones imperfectly developed; head square. The fontanels close late; teeth appear late, and are soft and decay easily; the chest is narrow; legs are bowed; joints are enlarged and back weak, so that the child is not able to sit up. In some cases the child is not under weight, but fat and flabby. Mental development is inferior; the child is restless, and has a tendency to convulsions.

The diet should be changed. Avoid condensed milk and proprietary foods; give breast milk if possible, or pure cow's milk modified according to a formula given by a physician.

**Scurvy.**— This is indicated by hemorrhages into the skin, painful, swollen joints, suggesting rheumatism, and swollen, bleeding gums. It is caused by wrong feeding, usually overcooked milk. If Pasteurized or boiled milk must be used, give also the juice of one orange daily.

**Crying.**— A baby does not cry just for amusement, but there is usually some discomfort or pain, unless he

has been spoiled and constantly wants to be taken up. Crying is usually caused by colic, earache, irritated skin, heat rash, erupting teeth, heat or cold, or discomfort from a soiled diaper. The cry is a warning that he is not receiving proper attention. By allowing the baby to cry before attending to his needs, the mother is giving him his first lesson in crying for what he wants. It would be better to make him comfortable before he cries. Older babies may cry from lonesomeness and want of occupation.

**Communicable Diseases.**—In case of communicable diseases, such as diphtheria, scarlet fever, typhoid fever, etc., the patient should be isolated at once in order to protect others. The room in which the patient is taken ill should be used, if suitable, in order to avoid infecting another room. It is best to have a room as far from the rest of the family as possible, and near the bathroom. All carpets, rugs, upholstered furniture, bric-a-brac, books, toys, and other articles which cannot be disinfected, thoroughly fumigated, or burned, should be removed. The chief danger of infection is from contact with the patient or the discharges.

The nurse should be careful not to let the patient breathe or cough in her face. She should wash her hands thoroughly with soap and water and a disinfectant after touching the patient or anything about the bed; this is especially necessary before eating. She should keep her hands away from her face; should never eat in the sick-room; should wear a cap and an apron which completely cover her hair and dress, and remove these when leaving the room. All discharges from the nose and throat of the patient should be burned; discharges from bowels and bladder should be disinfected before disposal. All linen must be soaked in a disinfectant solution for one hour before sending to the laundry. The floor should be gone over daily

with a cloth wrung from a disinfectant. Food, whether it has been touched by the patient or not, should not be left in the sick-room, but should be burned. Dishes should be boiled after each using.

When quarantine is to be lifted, both the nurse and the patient should take a thorough cleansing bath, including head shampoo, put on clean clothes that have not been in the infected room, and go into another room.

The infected room and all its contents must now be fumigated. All linen should be put to soak in a disinfectant, bedding, mattress, curtains, and other articles so placed that the gas from the fumigator can reach every part of them. Windows should be tightly closed, the fumigator lighted, the doors closed, and paper or old rags pressed into all cracks around the door and the keyhole. The room should remain closed for at least four hours. It is well to start the fumigator in the evening and leave the room closed until morning. The windows should then be thrown wide open, and the room left to air for a time before being straightened up, as the fumes are very irritating to the lungs.

Great care should be taken in using the fumigator, to avoid fire. A large washbasin or old dishpan should be placed in the middle of the room, away from all bedding or anything which might take fire, a little water placed in the pan, and then a brick on which the fumigator may stand. The number of fumigators, or candles, used will depend on the size of the room. One is usually sufficient to disinfect one thousand cubic feet of space.

For disinfecting discharges, chloride of lime may be used. Make a solution by adding six ounces to one gallon of water. Add an equal amount of this solution to the discharges, stir thoroughly, and let stand for one hour before disposal.

Solution for disinfecting bedding and linen may be made by adding seven ounces of carbolic acid to one gallon of water. The acid should be added to the water when the water is hot, and the solution shaken thoroughly to dissolve the acid.

Bichloride of mercury solution, 1-500, may be used for linens, 1-1000 for the hands and wiping the floor and furniture. This is usually bought in  $7\frac{1}{2}$  grain tablets, one of which added to a pint of water makes 1-1000 solution.

### **Points to Be Emphasized**

Adenoids cause mouth breathing and are a serious disorder. They should be removed by a surgeon.

A child with sore throat should be isolated; it may indicate the onset of infectious disease.

Restlessness and crying in a young child may indicate earache.

Physician should be called in case of croup; delay may prove fatal.

Diarrhea usually results from using dirty milk.

Worm medicine should not be given on suspicion, but only on advice of doctor.

Teething is a natural process; in a healthy child it will not cause serious disturbance.

In case of convulsions, call the doctor; give warm bath to relax child; empty stomach and cleanse bowels.

Rickets is due to malnutrition.

Scurvy results from wrong feeding.

Crying usually indicates discomfort; cause should be removed.

In case of communicable disease, patient should be isolated; great care should be taken to prevent spread of disease.

**Demonstration.**—Croup tent; preparation of room for fumigation; lighting of candle; show common disinfectants and explain use, emphasizing caution in handling.

**Supplementary Reading.**—“The Way to Health,”

### NO TIME TO LOSE

'Tis not for man to trifle! Life is brief,  
And sin is here.  
Our age is but the falling of a leaf,  
A dropping tear.  
We have no time to sport away the hours,  
All must be earnest in a world like ours.

Not many lives, but only one have we,  
One, only one!  
How sacred should that one life ever be,  
That narrow span!  
Day after day filled up with blessed toil,  
Hour after hour still bringing in new spoil.

— *Dr. Bonar.*

## LESSON XVIII — ACCIDENTS AND EMERGENCIES

**First Aid** consists in rendering simple care in case of accident or emergency, which will relieve the patient while awaiting the arrival of the physician. Every one, especially mothers, should know how to give this aid intelligently, for sudden illness and accidents are frequently occurring around us, and there is no time to get out the doctor book and study the matter up.

The attendant must above all keep cool. The patient, and those around him, will be excited and nervous, and it means much to have some one take charge of affairs who can quiet the excitement and render intelligent help. If in a public place, people must be prevented from crowding around, thus shutting out the air and increasing the nervousness of the patient. If possible, the injured one should be removed at once to a quiet place away from curious eyes.

Unless it is a very simple injury, a physician should be called at once, and should be given an accurate statement of the condition of the patient. The patient should not be left alone. While awaiting the doctor, the attendant may loosen or remove the patient's clothing, meantime making careful observation of the extent of the injuries. The attendant, however, must guard against assuming too much responsibility, for more harm than good may be done. If in doubt as to the right thing to do, it is safer to wait until the physician comes and can give directions. In removing the clothing from the injured part, the garment should be cut or ripped, avoiding exposure of the patient, especially if he is unconscious. The patient should be kept warm.

**Fractures** are classified as simple and compound. Simple fractures are those in which the bone is broken but does not pierce the flesh; compound fractures are those in which the bone is broken and is forced through the tissues and the skin. The symptoms of fracture are pain, tenderness, inability to move the part normally, and sometimes the sound of grating of the broken ends of the bone. There may be some discoloration of the surface due to injury to blood vessels and the accumulation of blood in the tissues. The physician should be called at once. If there is hemorrhage, it should be controlled, and the part kept absolutely at rest. If the patient must be taken to the physician or to his own home, the injured limb should be supported by a temporary splint. If the arm is broken, it can be protected in a sling; if the leg is broken, the patient should be carried on a stretcher.

**Hemorrhage.**—Hemorrhage results from injury to a blood vessel. If from a vein, the blood is dark red and the flow is steady; if from an artery, the blood is bright red and comes in spurts. Hemorrhage is controlled by pressure over the blood vessel either below or above the injury, or by temporarily shutting off the circulation from the limb. If hemorrhage is from an artery, the blood is coming from the heart, and pressure should be applied above the injury; if from a vein, the blood is going toward the heart, and pressure should be below the point of hemorrhage. To cut off the circulation from either arm or leg, a tourniquet may be used. Hemorrhage in the foot or lower part of the leg may be controlled by elevating the leg, putting a pad back of the knee, flexing the knee, and binding the lower part of the leg to the upper part, thus cutting off the circulation of blood that passes through the large vessels under the knee. Hemorrhage from small blood ves-

sels may usually be checked by pressure directly over the injury.

*Hemorrhage from the lungs* is usually the result of tuberculosis. The blood appears bright red and frothy. The physician should be notified. The patient should be kept quiet with head and shoulders elevated, having plenty of fresh air, and may be given chipped ice to swallow, and an ice bag should be placed over the chest. Hemorrhage from the lungs does not usually indicate immediate danger.

*Hemorrhage in the stomach or intestines* is first indicated by sharp pain, quickening of the pulse, fall in temperature, pallor of the face. The blood appears in vomited matter in small, dark-red clots, or in the excreta as "tarry stools." It should be reported at once to the physician, the specimen saved for his inspection, and the patient kept very quiet. The patient should not be told, however, that anything unusual has occurred.

**Nosebleed** occurs in congestive conditions of the head, as the onset of infectious disease, catarrhal conditions, and sometimes without any apparent cause. The head should be held back, a cold compress placed over the bridge of the nose and one to the back of the neck. If this does not stop the bleeding, the nostril should be carefully plugged with absorbent cotton. Placing both hands in cold water, or stretching both arms straight up over the head, may stop nosebleed.

**Burns** are among the more common accidents to be met in the home. They may result from contact with fire, hot substances, or caustic, and vary in degree from superficial to deep burns. There is always more or less destruction of tissue. In case of fire the flames should be smothered out by rolling the patient in a rug, blanket, or quilt, taking care not to force the flames up into the face. If the burns are severe from any cause, a phy-

sician should be called, and the clothing not removed until he arrives. With a smaller burn the clothing may be removed by the attendant, cutting or ripping the garment if necessary. The wound is already sterilized by the heat, and if kept clean will not become infected. It should be bathed in a solution of baking soda, then dressed with a paste of soda and water, and covered with a sterile cloth or absorbent cotton, and a loose bandage used to keep the dressing in place. Instead of the soda paste the burn may be covered with white sterile vaseline, or a soft sterile cloth wet in carron oil (equal parts of limewater and linseed oil).

For a burn caused by a corrosive, apply a neutralizing substance at once. For an acid burn, use baking soda; for an alkali burn, use vinegar or lemon juice; for a carbolic acid burn, use alcohol. After thoroughly neutralizing, apply sterile vaseline and dress.

**Wounds** from cuts and bruises where the skin is broken should be cleaned with a mild disinfectant, as a saturated solution of boric acid or iodine diluted one half with water. The wound should then be dressed and kept sterile. Lockjaw may result from even a small wound if it is not properly cared for.

Injury from a **rusty nail** or other sharp instrument, especially if it does not bleed freely, should at once have the attention of a physician.

**Fainting** is the result of lack of blood in the head, and is caused by sudden weakness of the heart, extreme exhaustion, excitement, and injury. The patient's head should be placed low, cold water sprinkled in the face, smelling salts held near the nose, but not too near, and half a teaspoonful of aromatic spirits of ammonia given in half a glass of water. The clothing should be loosened, and the patient given plenty of fresh air.

In case of **epilepsy** or **spasm**, the patient should be kept from injuring himself by falling. To keep him

from biting his tongue, a clothespin or spoon handle wrapped in cloth may be placed between the teeth. The clothing should be loosened, especially the collar, and the patient kept quiet and induced to rest after the attack.

**Apoplexy** is caused by hemorrhage from one of the small blood vessels of the brain. While the home nurse cannot be expected to diagnose or treat such a case by herself, she should be able to recognize the symptoms and care for the patient until the physician arrives. Symptoms are flushed face, heavy, blowing breathing, and unconsciousness. The head and shoulders should be elevated, the patient kept very quiet, and a cold compress or an ice bag applied to the head, with heat to the feet. Do not burn the patient.

**Sprains or strains** should be given applications of heat and cold, either by bathing or by applying compresses. The part should be put at rest, and a heating compress applied. Before any attempt is made to use an ankle which has been sprained, it should be supported by a firm bandage, or by straps of adhesive plaster.

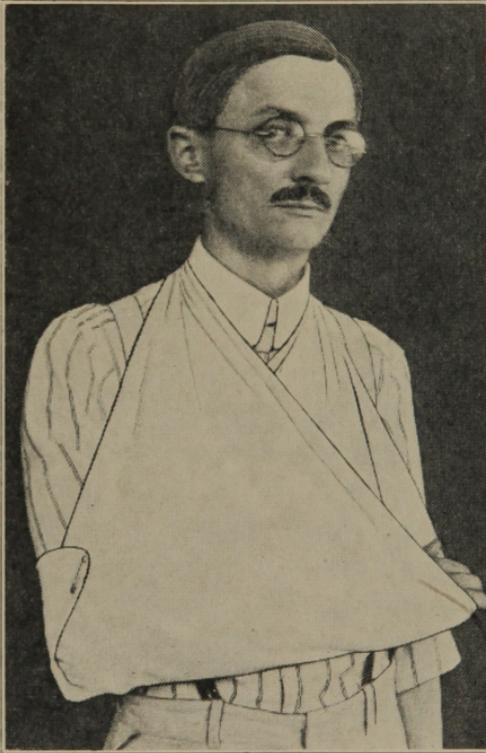
A simple **tourniquet** may be made by tying a large handkerchief around the arm or leg, leaving it loose enough so that a stick may be placed inside the handkerchief. The stick should then be turned until the handkerchief binds the limb tightly enough to cut off the circulation. This should remain only long enough to con-



Tourniquet Improvised  
with Handkerchief  
and Stick

trol the hemorrhage, never more than half or three quarters of an hour.

The **sling** should be of firm material, about one yard square, and folded once to form a triangle. Put one end of the triangle over the shoulder opposite the injured arm, with the point under the elbow of the arm to be supported, bring the other end over the other shoulder, tying the ends back of the neck. Bring point forward and pin in front, thus giving support to the elbow.

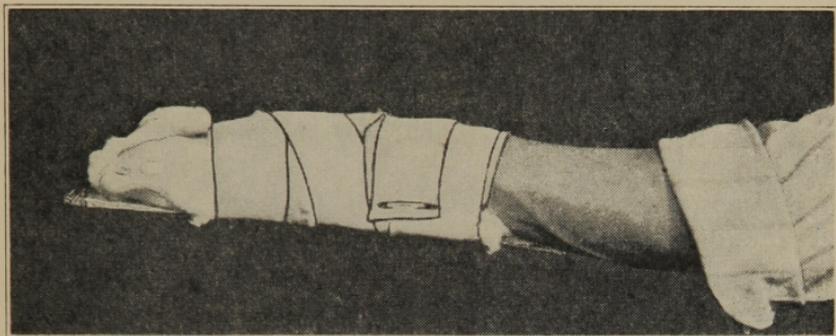


Arm in Sling

A temporary **splint** may be made of a board, preferably a little longer and wider than the limb to be supported. This should be padded, slipped under the broken arm or leg, and large handkerchiefs or pieces of cloth tied around both splint

and limb, snug enough to avoid any movement but not tight enough to cut off the circulation. If a board of the right size is not available, an umbrella, cane, barrel stave, or anything to which the limb may be tied, can be used. Whatever is used, it should be as long as the limb in order to prevent movement of the broken bone.

**Dressings** for home use may be made of old linen, soft muslin, or gauze. The material should be torn into suitable sizes, and wrapped in muslin, two or three pieces to the package. To sterilize, place the packages in a colander over a kettle of boiling water, cover tightly, and boil until the packages are thoroughly steamed



Improvised Splint for Broken Forearm, Padded with Cotton

through. Remove from the colander and place in a flat pan or tray, and bake in a slow oven until dry. Keep wrapped until used.

### Points to Be Emphasized

Every one should know how to render simple first aid.

In case of accident or emergency, *keep cool*.

The fractured limb must be kept absolutely at rest.

Hemorrhage is controlled by pressure over the blood vessel; arterial, above the injury; venous, below the injury.

In case of nosebleed, keep head back; apply cold to bridge of nose and back of neck.

Disinfectants are not necessary with burns, only sterile soothing dressings.

Wounds should be cleansed and kept clean. Serious wounds should be under care of physician.

In fainting, lower patient's head, sprinkle cold water in face.

Protect person in spasm from injury from falling and from biting tongue.

In case of apoplexy, keep head and shoulders elevated, cold to head, heat to feet.

Keep sprains and strains at rest; treat with hot and cold applications, and heating compress.

The tourniquet is used to bring pressure over an injured artery or vein. It should not be left on too long.

Splints should be so applied that they will prevent movement of broken bone.

**Demonstration.**—The tourniquet; sling; improvised splints and their application; simple dressings.

**Supplementary Reading.**—"The Way to Health," pp. 305-308; 336, 337; 249-253; 51-56; 247; 245, 246; 243; 333, 334.

### A GOLDEN TREASURE

"Good health! What a rare golden treasure!  
We mourn it the moment it's gone;  
We compass the world to reclaim it,  
And, failing, are wretched, undone.

"When with us, we value it lightly,  
We treat it as though it were clay;  
Too often, a slave to our pleasure,  
We bind it and fling it away.

"Yet always 'twould give us good service  
If its laws we would only obey;  
But by constantly breaking its precepts  
We wilfully drive it away."

## LESSON XIX — ACCIDENTS AND EMERGENCIES — Continued

**Foreign Body in the Ear.**— Children, before they are old enough to realize the discomfort which will result, often put beans, beads, grains of corn, and other things in the ear. In such an emergency, if great care is not exercised, permanent injury may be done. If the object is a bean, a grain of corn, or something which will swell when moistened, warm oil should be poured into the ear, holding the ear upward, when the offending substance will float to the surface and can be removed. If it is a bead or some substance which will not swell, the ear should be carefully syringed out with warm, soapy water, inclining the ear downward, that the substance may fall out.

Great distress is sometimes caused by insects getting into the ear. They may sometimes be brought out by holding the ear to a bright light, which will attract the insect. If this is not effectual, fill the ear with warm oil, then syringe with warm soapsuds.

If the foreign body is not removed by these simple measures, the child should be taken to a physician. Never should hairpins, wire needles, or the finger be put into the ear at such a time, as the foreign substance is most likely to be forced farther in.

**Foreign Body in the Eye.**— Cinders, particles of dust, sand, or small insects may usually be removed from the eye by simple means. First of all, the eye must not be rubbed, but kept closed. The upper lid should be brought down and outward from the ball and over the lower lid. Then an effort should be made to wink both eyes. This will usually bring the particle to the edge

of the lid or to the corner of the eye. If the foreign particle is lodged under the upper lid, the lid may be inverted as follows: The patient should look downward, the edge of the lid should be pulled forward and down, then away from the eyeball and turned back over the end of a pencil or knitting needle. The particle may now be gently wiped away from the eye with a twisted corner of a piece of clean linen or clean handkerchief. Everything used should be clean, and nothing sharp or stiff should be used near the eyeball.

If some particle should become imbedded in the covering of the eyeball, it should be removed by a physician, for in such case infection and loss of sight is liable to occur.

Should lime get into the eye, the eye should be immediately flushed with a warm solution of vinegar or lemon juice, a teaspoonful of either to a cup of water. Castor oil dropped in the eye will also give relief.

Acid splashed into the eye should be quickly neutralized by washing with a solution of baking soda, one teaspoonful to half a glass of water, or with limewater or milk.

**Foreign Body in the Nose.**— This usually occurs in childhood. The child should be induced to sneeze by tickling the nose with a feather. If the child is old enough to follow directions, hold the opposite side of the nose closed and tell him to blow. If the object is far up in the nose, he may be made to snuff it back into the mouth. If none of these efforts prove successful, the aid of a physician should be obtained.

**Foreign Body in the Throat.**— This may be the most serious of any of the emergencies considered thus far in this lesson, if the object is large enough to interfere with breathing. If it is securely lodged and cannot at once be removed, a physician should be called and given

an accurate statement of the situation in order that he may bring necessary instruments with him. In the meantime the patient should lean forward, face downward, and be slapped briskly on the back. If a child, he should be held up by the feet and slapped on the back.

If a coin, fruit stone, or pin has been swallowed, the child should be given a quantity of soft bread or mashed potato to eat, but no liquid for several hours, and no purgative. Close watch should be kept to see if the object is passed from the bowels.

**Stings of insects** should be bathed with ammonia water, baking soda solution, or salt and water.

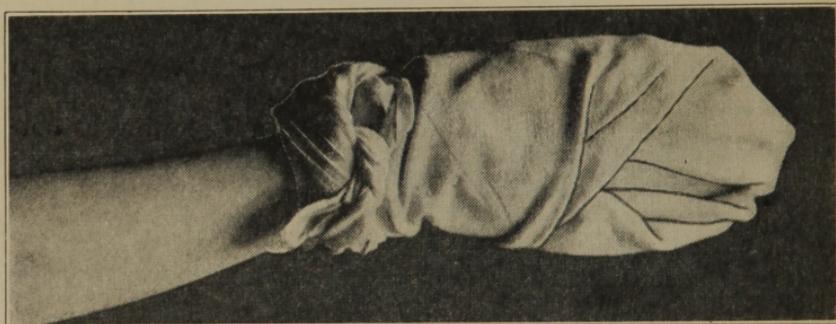
**Frostbite** or freezing of any part of the body should be treated with cold, not heat. The person should be kept in a cold room and the frosted part rubbed with snow or ice, then with a rough towel, until the circulation is fully restored.

**Prickly heat** occurs most frequently in infancy. It is seen usually during hot weather with children who are fat and are too warmly dressed, especially when the garment next the skin does not easily absorb the perspiration. The treatment is removal of the cause. The clothing should be light and absorbent. The irritated surface should be bathed with a solution of baking soda, one teaspoonful to the pint of water, this allowed to dry, and the skin dusted with a soothing powder.

**Poisoning from Ivy.**— This is much better prevented than cured. The symptoms are burning of the skin, itching, blistering, and eruption. One who is susceptible to such poison should, after being in the woods, wash his hands and face with strong soapsuds. This will remove the irritating oil from the skin and may prevent further trouble. In case the eruption does appear, the surface should be kept covered with cloths wet in

bicarbonate of soda solution, dilute grain alcohol, or saturate solution of Epsom salts. A very efficient remedy, if applied early, is a solution of ten grains zinc sulphate to an ounce of water. Moisten cloths with this and keep over affected part. The juice of milkweed seems to have a marvelous effect in controlling the inflammation of ivy poisoning.

**Bandages** are most frequently used by the home nurse to keep dressings in place. They are also used



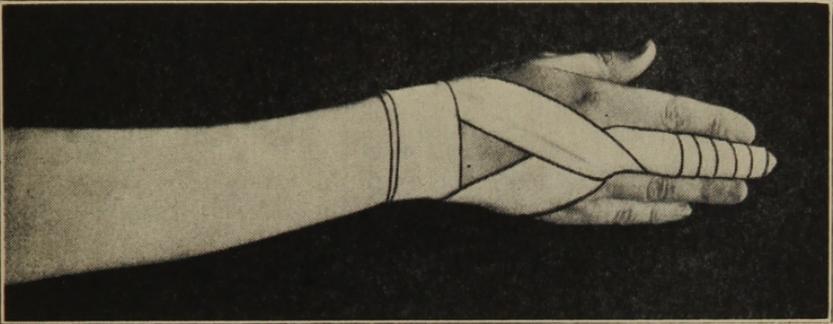
Manner of Bandaging an Injured Hand

to give support, to keep splints in place, and to apply pressure, as in the case of varicose veins. Bandages for home use are usually made of old muslin or linen, but gauze or flannel may be used. They should be torn the proper width and rolled tightly. They should be applied so that the pressure will be evenly distributed; not so tight that the circulation will be cut off, which will be indicated by puffiness and blueness of the surface below the bandage. When applied to the extremities, the bandage should begin at the smaller part and work toward the body. The last end should be fastened with a safety pin, or by splitting the end and tying around the part, or with adhesive tape.

The simple **spiral bandage** is begun by making several turns around the limb to secure the end, then in-

clining the bandage slightly upward, overlapping each turn about two thirds over the previous turn, until the desired part is covered. It should be finished with several turns around the part, one over the other. Bandage for arm or leg should be about two inches wide.

**To bandage a finger or thumb**, secure the end of the bandage around the wrist by two or three circular turns, carry bandage across back of hand, then with several spiral turns to end of finger. Apply several



The Simple Spiral Bandage

circular turns to end of finger, then descend with overlapping spiral turns, carry across back of hand and around the wrist to secure. Bandage for the fingers should be about one inch wide.

The **triangular bandage** is made of cloth, thirty-six inches square, folded once from corner to corner. A large handkerchief may be used. This bandage may be used in many ways in this shape, and may also be folded into a narrow bandage.

*To apply to hand*, spread triangle out, place hand in center with wrist on lower border, point beyond fingers; draw point up and over back of hand, bring ends around wrist over point, and tie.

*To apply to foot*, spread out triangle, place foot in center, with toe toward point; draw point up over foot;

bring ends up and around ankle over point in front, and tie.

This bandage may be used in other ways, as will be demonstrated by the instructor.

### **Points to Be Emphasized**

Foreign bodies in the ear should be brought out with warm oil or syringing, not by picking at the ear.

In case of foreign substance in the eye, the eye must not be rubbed but kept closed, when the particle may be washed out by flow of tears.

Lime in eye should be neutralized with weak solution of vinegar or lemon juice.

Foreign body in the nose can usually be forced out by blowing or sneezing.

In case of foreign body in throat, the head should be lowered and the patient slapped on the back, and coughing induced.

Bathe insect bites with ammonia water.

Treat frostbites with cold, not heat.

Prickly heat should be kept dry; remove cause.

For ivy poisoning, apply baking soda solution, dilute alcohol, saturate solution of Epsom salts or zinc sulphate, ten grains to the ounce of water.

Bandages should be applied with even pressure; should not cut off circulation; should be applied from end of extremity toward body.

**Demonstration.**—Procedures mentioned in lesson; spiral bandage to arm and finger; triangular bandage to hand, foot, head, elbow, etc.

**Supplementary Reading.**—“The Way to Health,” pp. 313-318; 63, 64; 394, 395; 339-344; 361-364.

## EXAMINATION QUESTIONS

1. How should we regard our bodies?
2. Describe briefly the framework of the body.
3. What two classes of muscles are there?
4. By what means is nourishment carried to the tissues?
5. What are the principal organs of elimination?
6. How is the blood purified?
7. What is the best way to meet disease?
8. Name five things essential to life and good health.
9. Name ways of depriving oneself of sufficient air, and describe simple means of ventilation.
10. What is the use of water in the body, and how much should one drink each day?
11. Mention principal points essential to proper clothing.
12. What is the normal state of the body, and how may health, under normal conditions, be assured?
13. How is disease carried, and why does it at times overcome our body defenses?
14. What is the main entrance of disease to the body, and what are some of the ways germs are carried to this entrance?
15. What is a disinfectant? Name the best natural disinfectant.
16. What is one very important organ of elimination, and how should it be cared for?
17. Name five points mentioned in the proper furnishing and care of the home.
18. What is hydrotherapy, and what may result from its use?
19. What is one of the chief properties of water?

20. By whom and under what conditions only should hydrotherapy be used in case of serious illness?
21. Name necessary articles for giving fomentations.
22. Tell how to give fomentations.
23. In what conditions may the hot foot bath be used, and how is it given?
24. By what means are the impressions on the surface of the body carried to the internal organs?
25. What should always result from a cold application, and what are some things which will bring about this result?
26. Name one of each of the following treatments: Tonic, eliminative, derivative, reflex.
27. Tell how to give a sitz bath to produce perspiration.
28. Name five points to be remembered in connection with the use of the enema.
29. When is bathing especially essential, and why?
30. What precaution should be taken before beginning any treatment, especially a cold application?
31. What articles are necessary for giving a bed bath, and what are some of the precautions to be observed?
32. Tell how you would give a sponge to reduce fever.
33. How should a neutral bath be given?
34. What are symptoms, and what is the duty of the home nurse in regard to symptoms?
35. What are some points to be observed in regard to pain?
36. What symptoms besides pain may be present in illness?
37. What is the normal temperature? pulse? respiration?
38. Describe taking temperature by mouth; by rectum.
39. When should the temperature not be taken by mouth?

40. Describe an ideal bed to use in case of illness.
41. Mention some things to be taken into consideration in selecting a bed.
42. How may the bed be made the proper height?
43. Name the articles necessary for making a sick-bed.
44. How would you protect the mattress if no rubber sheet is available?
45. What special precaution should be observed in arranging the bedding underneath the patient?
46. What sort of room would you choose as a sick-room?
47. How should it be furnished?
48. Describe the general care of the room.
49. Name ten important points in the qualifications and conduct of the attendant.
50. What are the duties of the attendant?
51. How would you prepare your patient for breakfast?
52. Name two simple appliances which may be used in the sick-room to add to a patient's comfort.
53. What is a cradle, and how would you arrange one?
54. What usually causes bedsores? How would you prevent them?
55. How would you fill a water bottle, and what precaution would you take in using it around a sick person or a child?
56. How should an ice bag be filled, and how long may it remain on any part continuously?
57. What determines the quality of the building material in our bodies?
58. In what three main divisions are foods classified? Name three foods, each one representative of one of these food elements.
59. Describe briefly the process of digestion.
60. Name three important points to be considered in arranging the diet.

61. Mention three habits in eating which should be avoided.
62. Among what classes of foods may we find all the elements of nutrition?
63. Why should much grease, spices, or soda not be used?
64. What may result from the free use of sugar?
65. What is the effect of tea and coffee?
66. Why is meat neither necessary nor advisable?
67. Why should an ill person be fed in a manner different from well people?
68. What three divisions do we make in classifying diet? Name two or three articles under each.
69. Name five points to be observed in setting and serving a tray.
70. What is the best food for babies?
71. What indicates that food other than milk may be given a baby?
72. In general, what should be the diet of a school child?
73. Who is most responsible for the baby's health, and with what should she acquaint herself? When should the care of the baby begin?
74. What care should be given the eyes at birth, and why?
75. Describe briefly the first clothes of a baby.
76. What care should be given bottles and milk in artificial feeding?
77. What should indicate to you that a baby has colic, and how would you treat it?
78. Name some causes of colds.
79. How may colds be prevented?
80. What treatment would you give to break up a cold?
81. What is the first and one of the most important things to do in case of influenza?
82. Name some causes of constipation.

83. How should constipation be treated?
84. What is often the cause of mouth breathing, and what should be done to correct it?
85. What should always be done in case of croup?
86. What is the most common cause of death in infants, and what should be done to prevent it?
87. How would you treat a child troubled with worms? Would you give worm medicine?
88. How would you treat convulsions in a child?
89. What precautions must be observed in communicable disease?
90. How would you fumigate a room?
91. What is first aid, and what is all-important in case of accident?
92. What would you do to check nosebleed?
93. How would you treat and dress a burn? a wound?
94. What would you do for a person who has fainted?
95. How may sterile dressings be prepared at home?
96. What may be done to remove a foreign body from the ear? eye? nose? throat?
97. What would you do for lime in the eye? acid in the eye?
98. What treatment would you use for frostbite?
99. How may prickly heat be prevented and how treated?
100. For what purpose are bandages used, and what material is commonly employed?

## PRACTICAL PROCEDURES

Methods of Ventilation.

Methods of Sweeping.

Fomentations.

Foot Bath in Bed.

Sitz Bath with Washtub.

Witch-hazel Rub.

Taking Temperature, Pulse, and Respiration; Drawing  
Chart.

Making Unoccupied Bed.

Changing Bed with Patient in It.

Changing Patient's Gown.

Arranging Back Rest and Pillows.

Filling Water Bottle.

Preparing Balanced Menu.

Setting and Placing Tray.

Roller Chest Pack.

Throat and Joint Compresses.

Croup Tent.

Preparation of Room for Fumigation.

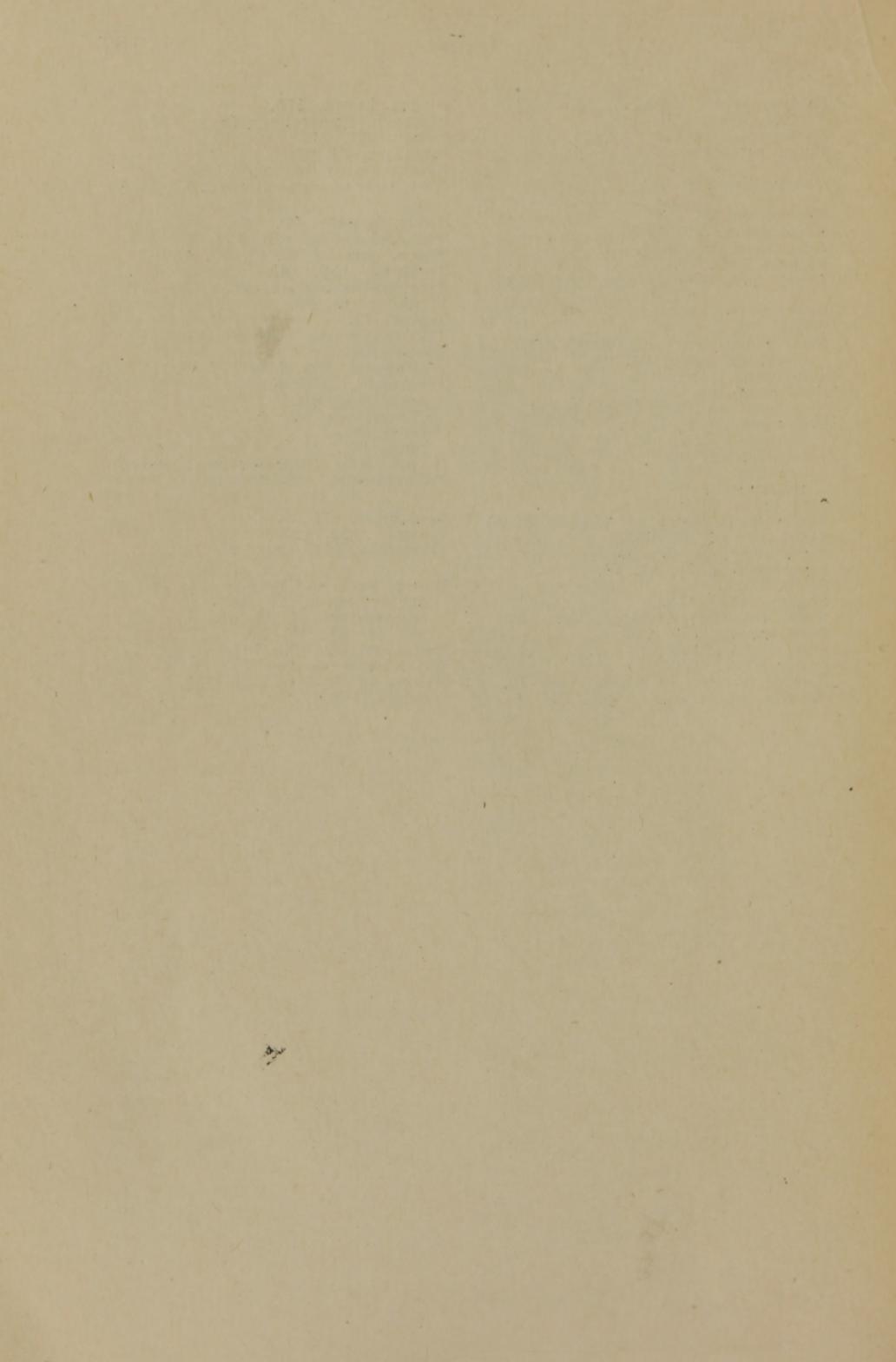
Apply Tourniquet; Arrange Sling; Temporary Splint;  
Spiral and Triangular Bandages.

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