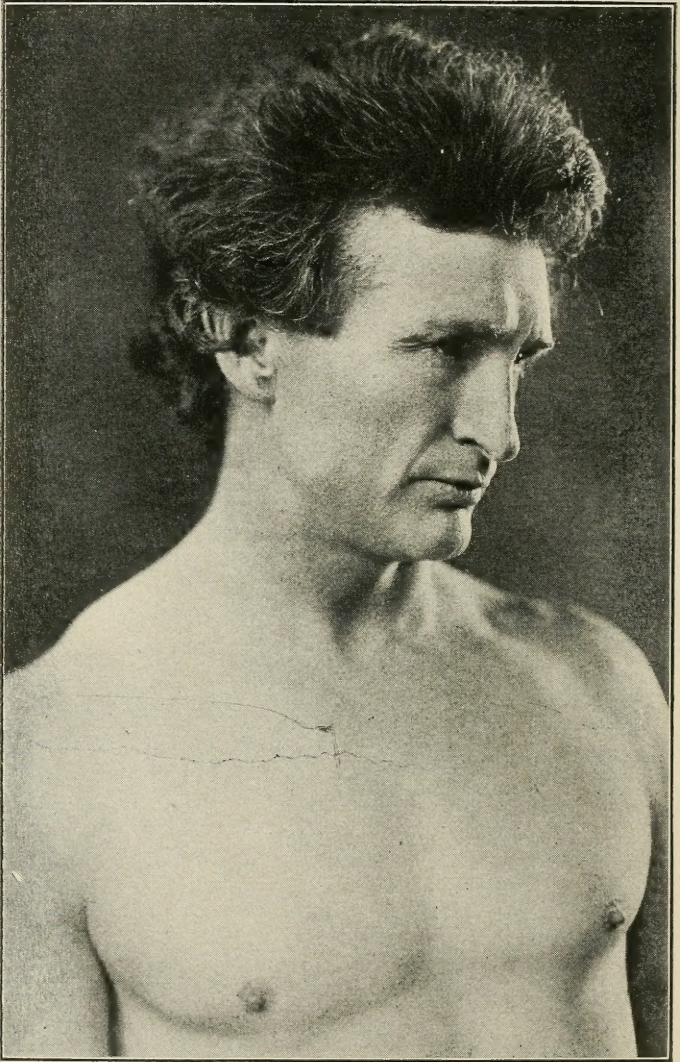




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Portrait of the Author

The Book
of
HEALTH

BY
BERNARR MACFADDEN

AUTHOR OF MACFADDEN'S ENCYCLOPEDIA OF PHYSICAL CULTURE,
EATING FOR HEALTH AND STRENGTH, STRENGTHENING THE EYES,
HAIR CULTURE, CONSTIPATION, TOOTH TROUBLES, MIRACLE OF
MILK, PHYSICAL CULTURE COOK BOOK, HEADACHES, STRENGTHEN-
ING THE SPINE, AND OTHER WORKS ON HEALTH AND SEX

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How to GAIN WEIGHT

NORMAL WEIGHT—WHAT IT IS

PART ONE

IN judging the health and physique of an individual, the weight is commonly regarded as the most important characteristic. While this rule does not invariably hold good, the weight is nevertheless the most dependable guide that casual observation affords to the physical condition. It need hardly be said that it is neither desirable nor necessary that all men and women of a certain height should be of equal weight. It is none the less true that they are not physically at their best when they vary to the extent of a score of pounds or more from the weight regarded as normal for their particular stature.

In the sphere of physical training, the athlete's condition is usually adjudged by his weight, and in the treatment of almost every disease, the maintenance of normal weight is one of the most important objects of the treatment applied. Of course, the presence of excess flesh is not favorable to the highest degree of strength and endurance. Too much weight ultimately means a diseased condition, although the ability to add fatty tissue is really a sign of health. It means good assimilative organs. It means that a large part of the food that is eaten is absorbed and used by the system.

Fat simply represents stored energy. The hibernating bear secretes enough energy during the summer, in the form of fat, to last him all winter. His assimilative organs, through generations of habit have developed the particular characteristic which enables him to prepare

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for this contingency. Any animal, human or otherwise, that is well-fed and in a healthy condition, if not required to take too much muscular exercise, will "get fat." A farmer has no difficulty in fattening his pigs, for instance. All he has to do is to enclose them in a pen where they cannot run around too much, and feed them all they can stow away. He rarely finds an animal that cannot be fattened in a similar way, and when he finds one that does not respond to this treatment, it is because of ill-health. It is suffering from some disease.

Now, practically the same thing applies to the human animal. If one places himself under right conditions, i. e., feeds himself properly, takes but a small amount of exercise, and the functional system being in normal condition, he will get fat, and if this result cannot be secured, then there is something wrong with one's habits of life, or the vital organism.

Failure to attain to the standard of weight usually accepted as the average need give no cause for alarm. Many persons are "thin"—but are in splendid health nevertheless. In the first place, some persons are remarkably small-boned; and, no matter how much "covering" they possessed, they would never be as large as some of the other people about them. We must remember, too, that people tend to run in "types"—just as dogs and other animals do. There is an old saying: "Did you ever see a thin pug-dog or a fat greyhound?" The reason is, simply, that they tend to run into that particular "mould"—no matter *what* their diet may be; and to a great extent it is the same with human beings. Thin people are generally the active, wiry, energetic, nervous people; fat people are the placid, phlegmatic, happy type. And, as Dr. Felix Oswald said years ago: "Energy and emaciation seem to go hand in hand." Thin people are generally the world's workers. At the same time, this side of the question can be pushed too far. There is slenderness and there is real emaciation—and the two are very different. One is natural, the other is not. One's normal weight is the point at which one possesses the greatest degree of strength, endurance and vitality. For instance, a fat

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man, as his weight is reduced, gradually grows stronger; the thin man, as his weight is increased, gradually grows stronger. Unquestionably, the man or woman who is under weight will develop these qualities hand-in-hand with the gaining of healthy, muscular tissue. And it is the purpose of this discussion to point out plainly just what methods should be adopted to bring one's weight to such a point as to be in the finest physical condition possible.

PART TWO

LACK OF WEIGHT—ITS CAUSE, EFFECTS AND CURE

A statement of the causes of the loss of weight or underweight is in order at this point, for in understanding what the condition is due to, one can more intelligently initiate steps to remedy it. With chronic disorders, such as catarrh, various forms of nervous disorders and constipation, thinness often goes hand in hand.

Many diseases, as in the instance of catarrh, are caused mainly through improper elimination of wastes, and in constipation a most important avenue for the elimination of body wastes is blocked, resulting in a retention of wastes which clog and poison the system.

As a result the blood is perverted, and its nutritive powers impaired.

It is inevitable that in disorders of the stomach and intestines that emaciation should develop. It is from food that we secure the material for building up the body and repairing the daily losses which the manifold vital process and our mental and muscular work cause. And when the organs which must prepare (digest and assimilate) the food for the body are weakened by disease and rendered incapable of the proper performance of their functions, the blood is not supplied with the materials for the nourishment of the tissues. Hence the body is semi-starved and extreme thinness results. One cannot expect to increase in weight to any great extent while such diseases continue. This diseased condition may be largely induced by one's habits of life. Eating in excess of the digestive capacity, the failure to take sufficient exercise to keep the muscular and vital organism in proper condition, overwork, etc., clog the system with wastes which the normal channels of elimination cannot take care of, weaken the digestive organs and lower the general health. All these things must be taken

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into consideration if one is suffering from excessive thinness. As a rule, if there is no apparent disease, the defect is one of assimilation. Not enough food is being assimilated. It is not what one eats but what is assimilated that gives strength, and adds tissue to the human body. A grave mistake is made by many who are desirous of gaining weight, in thinking that the more they eat the more chance there is of increasing in weight. In the majority of cases, the reverse condition obtains, that is,



Exercise 1.—Stand with legs about fifteen inches apart, holding the hands above the head, body balanced. Bend at the waist and touch the ground between the legs at a point a little beyond the heels. Return to erect position and repeat eight times.

HOW TO GAIN WEIGHT

a reduction in the amount of food is actually required to enable them to gain in weight. You must remember that every human body possesses a certain amount of nervous vigor. You can eat so much that it makes you thin to digest it.

Every vital organ of the body calls upon the nervous system for its share of the nervous energy. Of course, muscular efforts consume a great amount of nervous energy, but as a rule they increase the supply by increasing the general vital vigor. Now, for instance, when food is eaten, a certain amount of nervous energy is transmitted from the nerve center to the stomach and intestines for digesting and assimilating this meal. If more food is consumed than the digestive organs can easily handle, if one eats more than is needed to nourish the body, this surplus supply requires an additional amount of nervous energy in order to eliminate it from the body. It has to go through the entire alimentary canal, and has to be acted upon by all the various juices that are required in the digestive process. Therefore, over-feeding represents perhaps the most prevalent evil among those who are lacking in weight. The average person suffering from emaciation remains in that condition in many cases solely because of the habit of eating more than is needed to nourish the body. And when this is the case to gain in weight lessen the quantity of food by about half, and although the first week there may be indicated a slight decrease in weight, thereafter in nearly every case the weight will gradually increase, and of course with an increase in weight of this character there will also be an increase in general vitality and functional vigor.

Of course, some cases are due to lack of sufficient nourishment. Starvation does sometimes occur. But, in our modern civilization, it is indeed a rare phenomenon; and in the vast majority of cases, emaciation has been induced by excessive eating, and not the reverse. (Which of the two is correct in any particular instance may be elicited by the history of the case.)

PART THREE

IDEAL DIETS AND EXERCISES FOR GAINING WEIGHT

Diet and exercise are the chief factors in gaining many articles of flesh-forming quality be mentioned, peas, legumes in general, particularly wheat,

exercise are the chief factors in gaining weight. There are diet which possess qualities, among which may beans, lentils and the Most of the cereals—oats and corn, and



Exercise 2.—Stand erect with arms outstretched at sides. Then stoop and swing right arm to the side and back of right leg as far as possible. Keep left hand extended at full length. Resume standing position, then swing left arm to side and back of left leg in same manner. Again resume standing position and repeat exercise, using both hands alternately for twelve or more movements.



Exercise 3.—Standing erect, incline body forward until chest touches wall. Then push backward until body assumes erect position. Repeat ten times or more.



Exercise 4.—Recline full length on the floor with hands clasped back of neck. Then slowly bring body up to sitting position as illustrated. Repeat movement eight or ten times, or until muscles involved are slightly tired.

HOW TO GAIN WEIGHT

bread and other preparations into which they enter in their natural, unbleached and unadulterated state, are likewise valuable in this respect. Also many of the starchy foods, like potatoes, when properly combined with other materials richer in protein, such as milk, cheese and eggs, are of value. Nuts of every sort are useful in this respect, as are sweetmeats and other products of sugar which are free from adulteration; also all sorts of fresh and preserved fruits. Olive oil, if it is relished, should be used plentifully on salads. One might even form the habit of drinking a teaspoonful of olive oil at different times during the day.

To those who insist on the use of meat as an article of diet, and who do not feel that they are well nourished otherwise, it may be stated that fat meats are not the most productive source of bodily tissue. Lean, well-cooked beef is best adapted for use in the mixed meat-and-vegetable diet.

Many favor the use of raw eggs for gaining weight. They can, of course, be combined with the ordinary foods with advantage. They can be taken in the form of egg-nogs, in which they are shaken up with milk, or can be combined with a fruit juice of any kind and thoroughly shaken. Grape juice or apple juice, with an egg shaken or beaten thoroughly, or stirred with an eggbeater, makes a splendid drink, which is appetizing as well as nourishing. A very appetizing way of preparing raw eggs is to beat the yellow and the white separately and then stir them together with the addition of a little sugar or the small quantity of whipped cream. This combination with whipped cream tastes very much like the filling of a charlotte russe, and as one can well realize, it contains a very large amount of nourishment.

A mistake that is made by nearly everyone who is desirous of increasing weight is eating too frequently — “piecing” between meals — following out the idea that the more food eaten the greater will be the tendency of the functional system to deposit additional tissue. If you want to gain in weight, never piece between meals. This deprives the stomach of its rest. It



Exercise 5.—Assume position here illustrated. Then sharply kick out backwards with both feet until body is at full length. Again bring feet up to position shown, then repeat movement a dozen times or more.



Exercise 6.—First stand erect, feet together, and arms at sides of chest with fists clenched. Bend knees and bring body down to position illustrated, meanwhile thrusting arms above body vigorously. Resume first position; repeat movement sixteen times.

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takes between four to six hours to digest a heavy meal, and therefore meals should be at least five or six hours apart. Never eat unless you thoroughly enjoy your food. Avoid eating as a mere duty. It is the thorough enjoyment of food that accelerates the activities of the functional processes which supply the digestive juices. Therefore, when you thoroughly enjoy a meal, it is attacked by these juices immediately upon its entrance to the stomach and the process of digestion and assimilation go on easily and harmoniously.

Now, in order to more thoroughly carry out the idea of enjoying your food, it is suggested that the number of meals be lessened each day, for instance, instead of eating three meals a day, eat only two meals daily. I have never found a thin individual who has not been benefited by eating two meals a day instead of three. In practically every case they would be able to eat more and enjoy more, and of course, digest more, when eating two meals a day than when eating three. Following out the theory of never eating unless you enjoy food, you will find that if you wait for your breakfast until ten or eleven o'clock you will have a keen appetite and every bite of food will taste delicious, and under such circumstances, it does you far more good than when you eat as a duty or just because it is meal-time. If too tired do not eat a heavy meal, as when the body is fatigued the digestive organs lack the energy required to properly handle a full meal.

Try to arrange your tasks so that taxing work of any kind, physical or mental, will not immediately follow a meal. After a meal, the blood is needed at the stomach, and it cannot be spared for the muscles or brain sufficiently to enable one to do good work.

Do not eat for at least two hours before retiring. During sleep the vital processes work slowly, and the half digested food retained in the stomach will disturb sleep.

Thorough mastication is important, for the poor assimilative powers of many men and women are due to the vicious habit of bolting food. The practice of wash-



Exercise 7.—From erect position bring hands down and attempt to touch floor at right hand side of body, keeping legs straight meanwhile. Resume erect position, then swing to left in the same manner. Repeat movements until you have thoroughly exercised the muscles involved.

ing down food with water or other fluids is also antagonistic to thorough digestion and assimilation, although water should be drunk freely at mealtime and on all other occasions when there is healthful thirst for it. These general facts should be kept in mind by those who seek to gain weight, but a more effective method of attaining the end desired will be found in a regimen similar to the course about to be prescribed in Part IV.

In many cases of thinness, the simple change from the unwholesome, innutritious fare of the average table to a diet which modern knowledge approves will work wonders. Instead of meat two or three times a day, potatoes, white bread, pie, or other pastry, etc., substitute cereals, whole wheat bread, eggs, milk, cream, cheese, vegetables in season, fresh fruits and nuts.

The next step in attaining a well-nourished condition is physical activity. Exercise of the entire muscular system is absolutely essential. There is no need of having

HOW TO GAIN WEIGHT

an elaborate system of exercise, but every muscle in the body should be used with a certain amount of regularity. All those who are well nourished are not always heavily muscled, but those who are muscularly developed are invariably well nourished. Think this over, and it will be plain to you that to encourage the assimilative organs, and to give the body its proper physical tone, a certain amount of exercise is essential. The building of increased muscular energy adds to the supply of electrical or nervous



Exercise 8.—First stand erect, then swing back body from waistline as far as possible, keeping legs straight. Next swing forward as far as you can. Swing body back and forth in this manner until you tire the muscles of the lower abdomen.

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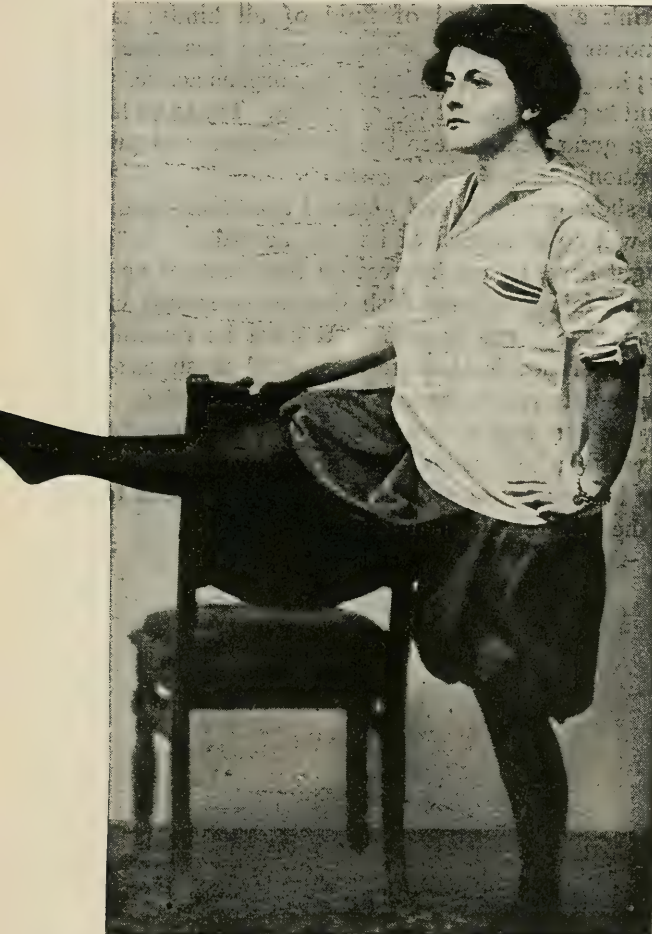
energy deposited in the nerve centres, and from these nerve centres one secures the nervous energy that is needed to digest the food and distribute it throughout the entire body. Long walks, for instance, are especially valuable in the building of general vital vigor, and these when combined with deep breathing exercises, are in nearly all cases warranted to increase the functional power and the result is an increase in the fatty tissue deposited. Outdoor exercises of all kinds are especially recommended. You cannot secure too much oxygen. As nearly as possible you should actually live out of doors. You ought to sleep next to an open window, or if possible right in an open window. Foul air has a devitalizing influence upon the body. A plentiful supply of oxygen builds increased vigor. Not everyone has at command facilities for exercising outdoors or in a gymnasium. The exercises depicted in the accompanying illustrations have been supplied for use in such cases. They may be taken in one's bedroom, or elsewhere, after arising each morn, or before retiring for the evening. Those able to do so will find it of advantage to perform them even more than once daily.

To gain in weight, one must be mentally satisfied. You cannot expect to add fatty tissue to the body if you are worried about anything. No one ever gained anything by worrying, in fact the tendency to worry is to a certain extent the sign of a nervous disorder. Develop a feeling of mental calmness, of mental satisfaction. Practice a little auto-suggestion, and get yourself into as serene and cheerful frame of mind as possible. Worry may work weight off, but not on. The state of mind may be due to the condition of the body, but thinness is pre-eminently a case of the effect on the body of the mind—those subjected to much anxiety or of a worrisome disposition lose in weight. Many people who are thin hold responsible positions in offices, and confuse brain work with worry. Work and thought will get one somewhere, usually will enable one to attain his object—but worry will stand in the way of one's success, yes, and set one back, and injure body and mind in the bargain.

Get plenty of rest and sleep. I will not say take a

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rest, for most individuals are so situated as to make this out of the question, but secure all the rest and sleep needed each day, as far as possible. Especially does this injunction apply to that type of nervously energetic girl or woman who wears herself down through her excesses in hustling and bustling, using up about twice as much



Exercise 9.—Grasping chair or table firmly with right hand, bring up right leg on level with hips, keeping it rigid meanwhile. Repeat movement at least ten times, then reverse position and bring up left leg an equal number of times while grasping table or chair with left hand.

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energy as would a phlegmatic individual to accomplish the same amount of work.

In brief, the regime or mode of living that will build healthy flesh, fill out a peaked, sunken face, and improve the contour of the figure comprises chiefly: A proper diet, careful eating, sufficient rest and sleep, fresh air and exercise.

Drink a great deal of fluid of all kinds; take a fair amount of exercise; breathe deeply; masticate thoroughly; keep the skin and depurating organs active. Keep the mind hopeful; do not worry or fret. Try to be happy. Laugh a great deal. Keep the bowels open and prevent constipation.

In short get into *good physical condition*—and your weight will go to normal of its own accord.

Right here, let me impress on the skeptical or those who have failed to gain flesh despite strenuous efforts to do so, that it can be done. It must be remembered that perseverance is absolutely essential to success, and that immediate results cannot always be expected. Still, even when the weight does not show an appreciable increase within a reasonable time, any really valuable methods for increasing the weight may be relied upon to improve the **general physical tone**.

PART FOUR

SPECIAL INSTRUCTIONS FOR INCREASING WEIGHT IN VARIOUS CASES

To cover the variety of circumstances of different individuals, three regimes have been planned. In cases of extreme emaciation, Regime No. 1 will be the most beneficial. Not only will the weight be rapidly increased under this regime, but vitality also, and in cases of this kind to build up the vitality is all important. This regime is also of great value in cases of digestive or intestinal diseases, coupled with undue thinness. The digestive system will be greatly strengthened and the assimilative powers increased. Regime No. 2 is to be advised when it is not possible to follow the exclusive milk diet as required by Regime No. 1.

REGIME NO. 1

No matter how strange it may seem to you, note in the beginning that no more effective method of preparing to take on healthy flesh exists than by fasting. Do not permit unwarranted and unreasonable doubts to cause you to reject this statement. Thousands of men and women have proven its truth. If you are really desirous of gaining flesh; if your mind is broad enough to be convinced by actual experience; if you have sufficient manhood or womanhood to restrain your physical appetite for a few days, you will gain rich rewards for your self-denial. Fasting destroys effete tissues quickly—whets the assimilative powers to a wonderfully high degree of efficiency—attunes the blood-making organs of the body to their highest pitch, and enables every blood vessel to assume its greatest degree of effectiveness in conveying nutriment where the system most needs it.

The fast should be of not less than three days' dura-

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tion. It may last as much longer as inclination may dictate. Depend upon it, the longer the fast, the greater will be the increase in weight, provided the fast is properly broken and is followed by a diet of a suitable sort. In breaking the fast, fruit juices, or some very light broths should be used for the first day or two.

After the fast is broken, should follow the adoption of the most effective food for increasing weight that is within the reach of man. And that is milk—the most complete, the most satisfying, and the most useful of all flesh-forming foods.

Beginning the first day, take one glass (half pint tumbler) per hour. On the second day take one glass every three-quarters of an hour. On the third day, one glass every half hour. On the fourth day take from one to one and a half glasses every half hour in accordance with desire. From four to eight or ten quarts of milk, depending on the size and weight of the individual, must be taken daily.*

It is sometimes of advantage to use hot milk at the beginning of the diet. The diet should be continued for ten days at least, and in serious cases of emaciation where the vitality is greatly depleted six weeks and longer is advised. Mind you, absolutely no other food must be taken in connection with the milk, except that the juice of some acid fruit—preferably lemons or oranges—should be used in cases when constipation is present, or the use of the milk becomes distasteful. The milk must not be gulped down hastily, but should be sipped slowly and thoroughly insalivated in the mouth.

Taken properly, the milk will thoroughly flush every vessel and organ of the body with life-giving nutriment—will fairly surcharge the tissues with nourishment of an ideal sort. It will stimulate the circulation and impel the growth of new tissues, and will also replace the old effete tissues with new life-cells—for with the use of this diet, after a fast properly taken, the body is literally

* Note.—My book "*The Miracle of Milk*" gives needed particulars on how to follow this diet.

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born anew. Temporary fullness or bloating, and increased activity of the excretory organs need not alarm those taking the milk diet, for the body will gradually accustom itself to the ingestion of the unusually great amount of liquid.

You need have no fear in prolonging the exclusive milk diet for several weeks, or even months. Men and women have thrived upon it.

When circumstances make it impossible or inconvenient to continue the milk diet, or the milk diet having been followed out and normal weight attained, the use of the ordinary mixed diet should be resumed gradually. As an intermediary step between the exclusive milk diet and the use of foods in ordinary use, adopt what might be called a combination milk diet, or a milk and fruit diet. Begin with the use of acid fruit or fruit juice (orange, grape or apple), two or three times a day, and two or three days later include figs or dates. Following a few days of this regimen it might be well to adopt the plan of following the milk diet for a part of the day, for instance, consuming a glass of milk every half hour up until one o'clock, and then, at six P. M., eating a meal of simple, wholesome foods that your previous experience has proven to be such as to agree with you. Or perhaps you would find it convenient to make one meal of milk in the morning, one meal of solid foods at noon, and another meal of milk at supper time. In this case you should use at least a quart of warm milk at the breakfast and supper hours, having it warm, because the introduction of so much cold milk at one time would tend to lower the temperature of the stomach and interfere with perfect digestion.

Following an exclusive milk diet it is often well to take up an uncooked diet, and when commencing the use of one meal of solid food, as suggested, it would be well to include uncooked rolled oats or flaked wheat, served with milk or cream and figs or dates, together with portions of tomatoes, celery, lettuce and other green salads, nuts and plenty of fruit. After a couple of weeks on such a combination diet one may gradually abandon the

HOW TO GAIN WEIGHT

use of large quantities of milk. It is not necessary, thereafter, to follow out the uncooked diet, though it is generally to be recommended. If desired, one may resume the use of the foods that he has always been accustomed to, though observing care to avoid overeating and unwholesome or indigestible dishes.

While following the milk diet, only mild if any exercise should be taken. Short walks at moderate pace is about the best exercise at this time. But when the milk diet is discontinued, exercises should be taken up as pointed out in Part Two.

REGIME NO. 2

This regime has been planned for cases where the conditions of work and other factors forbid the adoption of the exclusive milk diet. A thoroughgoing regime such as this will if faithfully followed, effect a gratifying increase in weight, and improvement in health and strength also. The results in the way of increase in weight will not perhaps be so speedily apparent as when following the milk diet, yet marked benefits will be in evidence in comparatively, so short a time as to be encouraging.

As in the instance of the milk diet, and for the same reasons, more satisfactory and speedy results will be secured if this regime is inaugurated with a fast of from one to three days. If the fast were continued to six or seven days, more pleasing results would be secured than from a fast for a shorter period. If the fast is continued longer than three days the amount of food that is prescribed below for the first meal should be decreased from one-half to three-fourths for the first two days after you resume eating, and if the fast is continued to seven days, the quantity of food should be decreased by seven-eighths for the first eating day, and even if the fast is continued for the shorter period, it might be safer to reduce the amount by half.

The daily regime is as follows:

(1.) Immediately upon awakening in the morning, take exercises such as are illustrated in this booklet. Fol-

HOW TO GAIN WEIGHT

low this with a dry friction bath, which can be taken with friction mitts or two soft bristle brushes. If these are not available, a rough towel can be used.

(2.) A few minutes following this, eat some acid fruit and drink from one pint to one quart of sweet milk. For your acid fruit, you can select ordinary apples, peaches, plums, or any fruit of this nature.

(3.) Some time during the day, walk until at least slightly fatigued. The distance, of course, will vary in accordance with the individual strength. All the time during this walk take deep breathing exercises, breathing abdominally.

(4.) Take your first real meal at noon. This should consist of bananas (very ripe), raw rolled oats or rolled wheat.

Please remember when securing bananas that they should be very ripe. In a thoroughly ripened banana the skin is not much thicker than paper, and the blacker the skin is the better, provided, of course, the "meat" of the banana is solid. The best kind of bananas to buy are those that are ripened with black spots all over them, similar, in a way, to freckles. These bananas, if allowed to ripen in a fairly cool place, will be delicious and can be easily digested in all cases.

Most any brand of rolled oats will be satisfactory provided it is fresh and clean. See that it is not wormy or "stringy," and that it has no "musty" odor.

Pour the rolled oats or wheat into a bowl and add raisins, dates, prunes, figs, or any other fruit that you desire for flavoring. Make your meal of the bananas and the rolled grain. It is better to eat this rolled grain without moistening, though if you are unable to do this, you can add cream or milk, if you find it appetizing. However, it is far better if you do not moisten it, for you can then depend upon its being thoroughly masticated. You can drink at this meal from two to four glasses of sumik, according to desire.

(Sumik is beaten sour milk. It is prepared as follows:

Allow ordinary whole sweet milk to stand in an air-

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tight vessel (an ordinary milk bottle is satisfactory). Keep it in a room of moderate temperature until it has clabbered. It can be used as soon as it is clabbered, or it can stand several days before using. When desirous of using it, stir the cream and the milk together and stir thoroughly with an eggbeater until it assumes the condition of a frothy foam or something like whipped cream. It is then ready for use.)

(5.) The evening meal should consist of similar foods to the second meal, though you can have whatever variation you may care for in the way of fruit, and you can add nuts of any kind to this meal, as you may fancy. Nuts are very rich. Don't eat too many of them. You can also have a raw egg, in any form you may care for it at this meal, and drink sumik to the extent of your desire.

(6.) Before retiring at night, if you can enjoy buttermilk or sumik, a glass or two could be taken advantageously.

When following out this diet, if you are not hungry at mealtime, always wait until the next meal. Do not force food upon the stomach that you do not need, for in this way you entirely defeat the object of the diet. Before retiring, I suggest that you take three or four minutes exercise.

REGIME NO. 3

This regime for gaining weight has been devised for those whose circumstances render impracticable the adoption of the exclusive milk diet or radical changes such as essential for the observance of Regime No. 2.

To follow Regime No. 3 it will not be necessary to make radical changes in your present diet except to insure that it is both healthful and nourishing. The suggestions that have been made in Parts Two and Three regarding a proper diet and right eating should, however, be carefully observed in this connection.

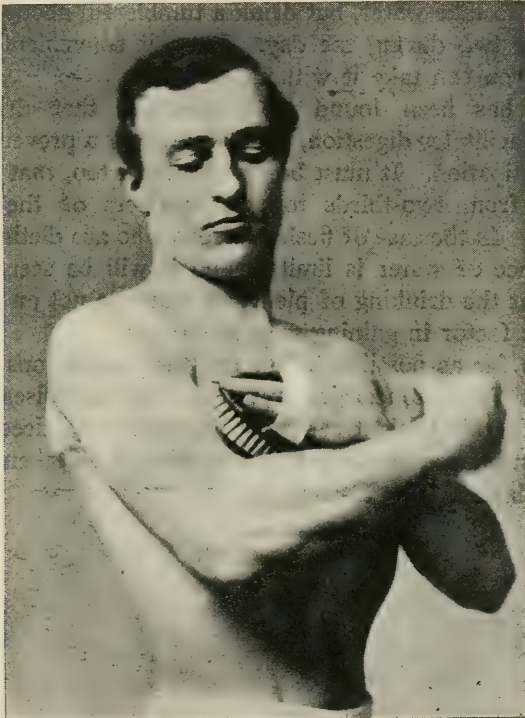
My first suggestion is that you very carefully determine just what your food requirements are and eat that amount and no more, for then you will not be wasting

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nervous energy in the manner that I have previously described.

Then I would advise eating only two meals a day, instead of three. If you find it difficult to go without breakfast, take a cup of hot water, with a little lemon juice in it, an apple, a peach or a pear, or a small amount of any acid fruit you desire. After a time, by following this policy, you will find that you can very easily go without breakfast.

When the time comes around for your first meal, you will then be able to thoroughly enjoy it. Your appetite will be keen and every morsel of food will taste delicious to you. That means that it will be digested and assimilated, but, mind you, be careful of overeating. In-



A dry friction bath may be taken by means of flesh brushes or Turkish towel.

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stead of drinking coffee or tea, I would suggest at this meal that you drink fresh milk or sumik. (See Regime No. 2 for information on how to prepare sumik.) This can be drunk at meals, using from one to three glasses according to desire.

The second meal can be taken at the ordinary time in the evening, though usually it is advisable to take the second meal about six hours after the first. At the second meal also use milk or sumik. Just before retiring take from one to three glasses of sumik. To those who are especially fond of buttermilk, it can be used instead of sumik, though of course it is not nearly so valuable as a means of building flesh.

Cultivate the habit of drinking a moderate amount of water daily. I do not mean that one should force oneself to take water, but drink a tumblerful about every hour or two during the day. Have it conveniently by, where you can take it without trouble.

It has been found by experiment that drinking water facilitates digestion, and is moreover a preventative of constipation. It must be remembered, too, that water forms from two-thirds to three-quarters of the body weight. In the case of fleshy persons who are dieting, the allowance of water is limited, and it will be seen from this that the drinking of plenty of water is not an unimportant factor in gaining weight.

As far as possible follow out the instructions given in Part Three concerning exercise. The exercises illustrated in this booklet can with benefit be practiced once daily and if conditions permit they should be taken twice every day.

HOW TO REDUCE WEIGHT

How to Reduce Weight

PART I

The Foolishness of Being Fat

It is utterly and inexcusably foolish to be fat. The only exception in human form is the case of the super-fat folks of the circus side-show; they are professionals and make their living by being fat—but there is nothing in it for the amateur. Among our four-footed brothers, the corn-fed pig makes his living in the same fashion, but his razorback cousin can't afford the luxury of surplus lard, for the razorback has to hustle for his living and fat is a handicap to a hustler.

The bear and similar hibernating animals find an exceptional utility in fattening up in the fall so they can go all winter without eating; and they also set us a very excellent example in reduction, for they are slim in the spring. The fat man defending his condition might argue that he keeps warmer that way, but fat is an expensive form of overcoat and a difficult one to shed when he comes into a warm room or must sit fanning and sweating on a July day.

So obviously hopeless and illogical is any defence of obesity that it seems needless to waste words on the subject. The very fact that you are reading this booklet indicates that you wish to rid yourself of more or less of this human handicap. But I want you to realize fully and forcefully just how strong the argument against fat stands, because to change your weight you will have to change your habits, and habits are stubborn things and it takes a little will power to change them.

Fat Folks Are Not Handsome

The most obvious argument for getting rid of surplus weight is that fat is ugly. Fat puppies are comical and cute, but fat people are ridiculous and are laughed at. The grace and beauty of the human form is covered up and lost in mere rotundity. The expression of the face loses its distinction and charm. The fat man's smile is good-natured but it is inane; a fat lady in tears stirs no

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man's blood to chivalrous defense of her wrongs, at best he only pities her; there can be no righteous bash of anger from a fat man's eyes.

Excessive obesity has never been considered handsome or desirable. But in times now gone by a moderate amount of fat has been more admired than it is at present. This was due to ignorance of its evil effects, to the hiding of the body with excessive coverings and to the gluttonous pride of displaying the fact that one had plenty to eat. Then, too, there was another defence of obesity in women due to the development of the perverted sense of beauty by Oriental ideas of voluptuousness.

In our modern western world these influences are now dead. Fat in any form is out of style. Women with excessive hips lace them in instead of displaying them. Ankles must be slender, uncorseted waistlines neat and trim; the human body must hold its form by the muscles within and not be bound about with hoops and staves like a bale of cotton.

The Weakness and Clumsiness of Fat

Muscular efficiency for work or play or appearance demands a fat-free body. The fat man is weak and clumsy. Every time he moves he must lift a lot of useless weight. It is even worse than if he had a sack of flour strapped on his back, because the sack of flour would at least be out of his way. But the fat is all through and about him; he cannot pick up his collar button from the floor because his "stomach" is in the way; the only way he can ever clear his decks for action is to throw over the useless cargo. More seriously, the fat man cannot breathe properly because there isn't enough room for air in his chest; and in time fatty tissues accumulate around his heart and the great blood vessels until he gets palpitations and heart failure.

The fat man becomes lazy because motion is too much of an effort. And the fatter he gets the lazier he gets; and the lazier he gets the fatter he gets—a mighty vicious circle which takes will power and courage to break.

The more extreme ill effects of obesity are not so noticeable in the body that is but slightly overweight, but some handicap to physical efficiency is always there—a fact that all athletes realize when they *train down* for

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contests to the minimum of fat and the maximum of muscle. The best condition for muscular efficiency is even more exacting than the condition for the best bodily appearance, for the best muscular efficiency means the elimination of nearly all bodily fat.

The Loss of Mental Efficiency

Fat folks are easy going, good natured and agreeable. In other words, they are mentally lazy and would rather be imposed upon than to defend themselves. Part of this effect comes from their physical laziness and habits of inactivity; and part of it from a direct deadening effect upon the brain, due to the presence of surplus food material in the blood. A heavy meal makes one dozey and sleepy. It is easier to sell a man a bill of goods he doesn't really want after he has had a good dinner, because his critical faculties are asleep.

A hungry animal puts up the best fight, and a man whose blood stream is free from surplus nourishment is most alert in a battle of wits as well as a battle of fists. As the Germans quickly discovered at the beginning of the war, reduced waistlines mean higher brain power. It might even be questioned whether the war would have not been more quickly won if, instead of trying to starve the enemy, we would have inundated him with bacon and butter!

The fat plutocrat sitting in his swivel chair clipping coupons might seem evidence that a fat paunch makes a fat purse; but the cause works the other way round. The fat man may continue to collect on his investments but the real wealth-creating thinking of the world is done by the wiry chaps. "Yon Cassius has a lean and hungry look, he thinks too much, such men are dangerous." Dangerous indeed to the fat man trying to hold the lid down on his caskets of gold!

Increased Susceptibility to Disease

Obesity is itself a disease, for it is an abnormal and inefficient condition of the body. Moreover, fatness causes other diseases, or what amounts to the same thing the causes of fatness also are the causes of disease, and the cure of fatness is the cure for the diseases so caused.

The popular phrase, "How fat and healthy you are looking," is an expression of ignorance. The idea that fat indicated health was a careless assumption, based on the fact that a very sick man is often very thin. There-

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fore, in superficial logic, it seems to follow that the fat man looked healthy. Careful analysis of the actual facts of the prevalence of disease shows the opposite to be true.

There are seeming exceptions, as dyspepsia and tuberculosis. But the obesity, even in these cases, is not what protects against the disease. The man who cannot digest or assimilate his food cannot be fat, and the man who is fat can digest and assimilate his food; therefore he is not susceptible to disease due to a failure of these functions. But the same man would have the same defense against such diseases if he kept a normal weight—and what is of greater importance, he would be free from the more numerous diseases that are associated with or caused by obesity.

Practically all diseases of the kidneys, liver and heart are caused by or accentuated by obesity. Gout, rheumatism and apoplexy are fat men's diseases. Diabetes and cirrhosis of the liver are from three to five times as prevalent among the obese as among the slender.

Death Before One's Time

Fat men die young. This fact is abundantly proven by insurance statistics. One rarely sees very fat old people, and those one does see have taken on weight late in life. Men who are fat in their youth, and particularly in middle life, rarely if ever reach a ripe old age. The death rate among those excessively fat in the forties and fifties is about twice as high as among those who have no excess fat at those age periods.

Not only is this a fact proven by statistics, but what is of even more significance, the man of *average* weight in later periods of life has a death rate about thirty per cent. higher than the thin wiry man. In other words the average man is too fat.

The fat man's heart beats faster and his blood pressure is abnormally high. He burns himself out before his time because of the burden of excess food and excess tissue; he has to work harder internally to live at all, and he has less vital energy left for external useful work of either mind or body. So he dies younger and is less efficient while he lives.

False Notions as to the Cause of Obesity

We like to shift the cause of our misfortunes to others, and dislike to admit to ourselves that we are to blame. Hence the prevalence of the notion that obesity is in-

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herited. The chief inherited factor in obesity is a good digestive apparatus, and properly used this is an asset not a liability. The indulgence of the appetite together with lack of exercises are the only causes of obesity. Both of these errors are habits, and habits that are easily corrected. The only blame that one can attach to his parents in the matter is the setting of a heavy table and a bad example.

If one's ancestors and relatives are fat, it is because they ate too much and exercised too little. To resign oneself to a similar fate on the grounds of heredity is silly nonsense—one might as well refuse to swim when the boat upset because his grandfather was drowned at sea.

Wrong Ideas as to the Cure

Medicine Is Worthless

Of all the stupidities of the so-called science of medicine, taking "reducing pills" is about the least excusable and the most criminal. Those prescribed by charlatans—and no reputable physician will prescribe them—are either inactive substances that have no effect and are merely catch-penny schemes for dupes; or they are virulent poisons that destroy the digestive functions. A milder degree of this same mal-practice is the use of purgatives after a heavy meal. It is more offensive than effective, and no person having any respect for his body would indulge in the habit.

Fat Cannot Be Sweated Out

The supposed efficacy of the Turkish bath as a means of reduction is based on a simple illusion. One goes to a Turkish bath and steps upon the scales before and then after the bath and appears to lose weight by the process. What has been lost is, of course, water; and the weight will be restored as soon as thirst has been fully satisfied. The amount of possible variation in the water content of the body is only a few pounds. This can be lost either by a sweating process or by abstaining from water and liquid foods—and both schemes are erroneously believed to reduce fat. The weight so lost does not even come from the fatty portions of the body, for fatty tissue has the least moisture. The "fat" of the beer drinker was caused both by a water bloated condition of the tissues and by actual fat derived either from the non-

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alcoholic elements of the beer, or from ordinary food, for beer drinkers are also usually gluttons.

The few pounds that may be eliminated from the body by abstention from water drinking or sweating is meaningless as a method of real fat reduction, and such practices are stupid efforts to dodge effective and healthful cures.

Not Rubbed Off

The art of massage has many genuine applications, but the reduction of body fat is not one of them. Fat cannot be rubbed off or mechanically dissipated. It must be burned up by chemical combination with oxygen and excreted from the lungs in the form of carbon dioxide gas. There is no other way one can get fat out of the body, and even if one could dislodge it by rubbing or pounding it loose, it would only float around in the blood and be redeposited.

Nor Squeezed Out by Rubber Corsets

Trying to squeeze out fat is even more futile than efforts to rub it off. In massage there is a little exercise involved and some benefit to the health of the skin and underlying tissue from the stimulation of circulation. The rubber corset or other bandage or lacing may restrain the fat and make it less apparent but it does not remove an ounce of it. The idea of such meaningless squeezing of the fat is usually combined with the idea of sweating by an airtight garment, and even this is an illusion for the sweat only appears because it does not evaporate.

The Real Cure Is Simple and It Works

Having rid your mind of all these dodges and tricks you should be ready to consider the real cure for obesity and the sane and healthful way to lose your surplus weight. I have spoken of these other ideas, which are based on false reasoning, because I want you to make up your mind once for all that to lose weight you have to diet and exercise. Otherwise you are apt to get lazy and go back to your former habits of indulgence under the excuse that you will either try some less strenuous method or else decide to remain fat and pass the blame back to your fat grandmother.

But while you must make up your mind that effort is required, I would be defeating my own ends if I made you think the effort unduly painful or at all uncertain.

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No one is asking you to live the rest of your days in a state that is either unnatural or unpleasant. It is your fatness and the habits that caused it that are truly unnatural and unpleasant. You have to change those habits and in the changing process you will have to be persistent and firm. But once you have established correct habits you will find that eating for the true needs of the body will give you greater pleasures of the palate than will gormandizing for obesity. Likewise an active muscular life is a great pleasure once you have brought the body into that fitness where the muscles are efficient and the general vitality peppy and sparkling.

But above all remember there is no question as to whether the cure will work or not. All other ills of the body may sometimes fail of cure even when the best known methods are applied. Not so with obesity. The cause and cure of obesity is a matter of mathematics and there is no argument about it. If you draw out more from your bank account than you put into it, the account will be *reduced*—and in like manner so will you be.

Fat enters the body when food is consumed in excess of one's needs; it can be removed by lessening the food intake or by muscular exercise. There is no other way for it to get in or get out. Therefore to lose fat, eat less food that makes fat, or take more exercise that consumes fat—or do both.

PART II

The Food Cure for Fatness

Anyone knows that he will lose weight if he refrains altogether from eating, and that obesity can be cured by fasting. But complete fasting is rather strenuous and its effect is only temporary. For a lady weighing two hundred pounds to fast until she weighed one hundred pounds and then eat as before until she weighed two hundred pounds again—well to say the least, her husband might object to the bills from the dress-maker.

The ideal method of reduction is one that will lead to permanent results. This means, as far as the eating part of it is concerned, a plan that can be used both to reduce the weight and to maintain it at the reduced figure after that has been reached. To work out and apply such a plan one must have a general understanding of the effects of food on the body weight. This effect involves questions of both food quantity and food quality.

Fattening Versus Reducing Foods

Strictly speaking, there are no actual reducing foods; by that I mean no foods which if eaten *in addition to* the other foods usually eaten would have a reducing effect. Another way to put it is to say that all foods are fattening foods, differing only in the degree of their fattening tendency.

It follows that if we ate, digested and absorbed enough of any food, we could gain weight upon it. Practically speaking there are reducing foods, that is foods of which we could not, or in practice would not, eat enough to gain or even maintain weight. To pick an extreme example, the quantity of lettuce, if eaten without dressing, that would be required to maintain the weight would be something like twenty-five pounds a day—and that is a lot of lettuce.

Now lettuce, eaten in moderate quantities, is a very excellent food for it contains an abundance of mineral salts, vitamins and cellulose, all important items in a healthful diet, and none of them fat producing elements. The same statement applies to all leafy foods; therefore this group of foods are reducing foods, par excellence.

At the other extreme of the food list, are the fats, either of plant or animal origin. A pound of pure fat in the food will, when deposited in the body, actually produce more than a pound of weight, because even in the fatty tissue added there is some water.

No other foods have anything like the fat producing power of the food fats or oils. The nearest approach to them is dry sugar, and it would take over two pounds of this to equal in fattening effect a pound of fat. Starches if eaten dry, as in crackers or dry cereals or cookies, are similar to sugar. Bread is about two thirds as effective in fat production as sugar, potatoes only one fourth as effective as sugar or only one ninth as effective as fats.

Therefore you can see how important it is to eat but very little fat of any kind in the reducing diet.

THREE GROUPS OF FOODS

Foods to Use Rather Freely

Apples	Blackberries
Apricots	Bran
Asparagus	Brussels sprouts
Beans, string	Cabbage

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Cantaloupe	Parsnips
Carrots	Peaches
Cauliflower	Pears
Celery	Pineapples
Cherries	Plums
Cranberries	Raspberries
Endive	Salads, of green vegetables and fruits
Grape fruit	Skim milk
Greens, all kinds	Spinach
Huckleberries	Squash
Kale	Strawberries
Lettuce	Tomatoes
Onions	Turnips
Oranges	Watermelon
Oysters	

Foods to Avoid [or Use Very Sparingly]

All fats, fried foods and oil dressings

Beans (all dry bean varieties)	Hominy
Beef (fat)	Lard
Bread	Macaroni
Buckwheat	Mutton
Butter	Nuts
Cake	Oatmeal
Cereals all forms	Oleomargarine
Chocolate and cocoa	Olive oil
Corn (meal, hominy, etc.)	Peanuts
Crackers	Peas, dry
Cream	Pork
Currants, dry	Pies and pastries
Dates	Raisins
Doughnuts	Rice
Dressings and "stuffings"	Sugar
Dumplings	Sweet potatoes
	Tapioca

Foods to Use but in Restricted Quantities

Bananas	Honey
Beef (lean)	Ice cream
Buttermilk	Junket
Cheese	Milk
Eggs	Peas, green
Fish (not fried)	Potatoes
Fowl—chicken	Prunes
Grapes	Sweet corn

You Must Also Control the Amount of Food

The working principle in all weight reducing diets is to replace the more fattening foods with less fattening foods. Effective reductions are oftentimes secured by this method alone, with nothing said at all in regard to the quantity of each food to be eaten. This method, however, fails to be effective when, as a result of the elimination of the most fattening foods, larger quantities of moderately fattening foods are consumed. Thus if one gave up butter and spread his bread with jam, and used more jam than he had butter, nothing would be gained.

Again, if we were considering the omission of a single item, it would be more important to omit bread than to omit butter, because, while bread is less fattening pound for pound, it is more fattening in practice for one eats much more bread than he does butter. The belief that potatoes are fattening is correct though in a food table based purely on chemical analysis they would not rank so; the practical point is that one eats so much more of potatoes than he usually does of other vegetables.

To reduce, one should cut out entirely, or cut down materially all those fattening foods in which he is in the habit of eating in any considerable quantities. Bacon is theoretically about three times as fattening as beefsteak, but it is no more fattening in practice for the man who eats a half a pound of beefsteak at a meal but only two ounces of bacon.

To Gain Vitality While Losing Weight

A fat man cannot starve—for fat, or for the food elements that make fat. But he can starve or suffer malnutrition because of the lack of the non-fat forming elements of food. In fact the typical over-refined diet of civilization is composed too largely of pure fats, sugars and starches, hence the man living upon it may be fat and yet be suffering from lack of other food essentials. Now if he attempts to reduce his weight by reducing the quantity of his food without changing the quality he is going to be ill nourished indeed.

The correct plan is to replace the fattening foods with those foods containing the non-fattening essentials. Then, while losing weight he will be well nourished and will gain strength and vitality. He will not even be

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lacking in fat so far as the energy needs of his body are concerned for he will be merely consuming his reserve supply.

The best foods for this purpose of keeping up the vitality while reducing the weight are:

First: A moderate supply of milk.

Second: An abundant supply of leafy green vegetables.

Third: Plenty of juicy fruits.

Fourth: Miscellaneous vegetables (including potatoes, if eaten sparingly).

Fifth: (If one cannot accept a non-meat diet), lean meats cooked without added grease.

The inclusion of milk at the head of the above list may seem astonishing to those who know that milk is the best food in the world for increasing the weight of those who are undernourished. The explanation is simply this, milk (and the same applies to eggs and cheese) is a food so complete and nourishing that a smaller quantity of it will supply the vital needs better than any other type of food. Milk is fattening only when used in excess of the consumptive demands of the body. A pint of milk a day will give you more vitamins, bone building salts and muscle building protein than you can get from any other source. To get these same vital elements from a miscellaneous diet you would have to consume a great deal more of fat forming substance and hence defeat the end sought.

A WEEK'S SAMPLE OF REDUCING MENUS

First Day

Breakfast

An orange (without sugar)

A poached egg

Two slices dry toast

Dinner

Boiled carrots

Lettuce salad with grated cheese

A corn muffin

A glass of butter milk

Supper

A vegetable soup

A salad of lettuce, chopped fruit sprinkled with
grated nuts

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Second Day

Breakfast

- A dish of soaked prunes
- A glass of milk eaten with a dish of boiled whole wheat

Dinner

- Green peas or corn
- Cabbage and onion salad
- Chicken
- A fruit juice drink

Supper

- Tomato soup
- A plain omelet
- Celery and apples

Third Day

Breakfast

- A baked apple
- A boiled egg
- Two slices of toast

Dinner

- A baked potato with very little butter
- Kale or other greens cooked with chopped beef
- Sliced tomatoes

Supper

- Lettuce-salmon salad
- Any fresh fruit

Fourth Day

Breakfast

- Half a grape fruit (very little sugar)
- A slice of toast
- A glass of milk

Dinner

- Ear or canned corn
- Cabbage
- Lean steak

Supper

- A baked banana
- A dish of junket (milk curdled with rennet)
- Berries

Fifth Day

Breakfast

- Half a cantaloupe
- A glass of milk eaten with a dish of boiled wheat

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Dinner

Beets or turnips
Cold slaw and cheese
Glass of grape juice

Supper

Glass of buttermilk
An onion omelet
Celery or lettuce

Sixth Day

Breakfast

A dish of berries
An egg scrambled with milk
A slice of toast

Dinner

Baked parsnips
A broiled fish
Apple-celery salad

Supper

An oyster stew
A bunch of grapes

Seventh Day

Breakfast

Sliced banana and orange
Two glasses skimmed milk
A bran muffin

Dinner

A baked potato
Spinach with boiled egg
Sliced tomatoes

Supper

Cup of custard
Apples and a few nuts

A glass of milk at a meal, and nothing else except bulky vegetables served either raw or cooked without added fat, and a dessert of juicy fruit like oranges, apples or berries with little or no added sugar, will form a reducing diet that is very effective and very safe.

The use of oil dressings on salads, or of greens cooked with fats, or of eggs, fish or oysters or other meats fried, or of acid fruits with quantities of sugar added are all items that must be watched, lest one seem to be following instructions and yet not following them at all.

Perhaps you have tried half heartedly to reduce and

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have failed. If so, have you come to the conclusion that you are differently constituted from those who have reduced? Do you feel that no matter how little you eat you keep fat anyway? It is true that the process of burning food into fat varies with individuals just as do all other bodily processes. You may require less food than some one else to maintain your weight and will therefore have to be more strict to reduce. But once you do get below your weight maintaining diet you will reduce as surely as the sun will rise tomorrow.

Practical Ways to Eat Less

In order for a reducing diet to give quick results from the substitution of such foods as above recommended for the conventional bread and butter, meat and potato, sugar and pastry diet, it is necessary to keep the list of permissible foods within a rather narrow range. It is sometimes difficult to do this; and that you may have the chance to adapt the principles of weight reduction to your own circumstances, I will here enumerate several ways in which the necessary end of eating less fattening food may be brought about.

The Long Fast

For those who are not too much over-weight, whose previous diet has had ample variety, and who have the will power to do it, reduction by a single straight fast is certainly very effective. The loss in weight will be about a pound a day. The fast can be kept up for ten or even twenty days with reasonable safety. I do not advise a longer fast than that without expert advice and guidance.

The fast must be broken gradually by the use of milk and fruits in moderate quantities. Then, if further weight is to be lost, the general rules for reduction should be followed. The danger is that after the fast one will eat excessively and the lost weight all be regained.

Repeated Short Fasts

This plan is safer and more practical. For those who are boarding where they can have little control over the nature of the diet served them, it is a very effective way to reduce—and very inexpensive, too, if the landlady will consider you on a visit while you are fasting and not charge you for board.

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1. This is an effective exercise for the neck. First bring the head far forward till the chin touches the chest as in illustration, then bring the head far back. Repeat a number of times. Then bend the head alternately far to each side over the shoulder. Also, turn or twist the head far to each side. If you will flex your neck while doing this last exercise, it will be far more effective



2. This is a circling movement of the head for developing the neck. First throw the head far back, then bring it toward one side as shown in photograph, then forward over the shoulder, down across the chest and around it, over the other shoulder. Reverse the movement, circumducting the head in this manner in both directions a number of times.



The short fast of from one to seven days' duration, and its repetition later, enables you to profit by experience, and you can work out a definite plan of what to eat in the intervals so that the effects will not be lost by gourmandizing.

Reducing the Number of Meals Per Day

This is an excellent plan indeed. It makes very little trouble and causes little inconvenience. For those boarding at restaurants, it is economical. It is a plan that can be continued after the desired reduction has been reached.

Assuming you are used to eating three meals a day and want to reduce. Then live on one meal a day while

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3. This is a resistance movement. Push with hand against the head resisting with the head against the force exerted by the hand. In the same way, try the exercise with the other hand, pushing with hand and resisting with head. It will be seen that a variation of good neck exercises can be found by using this system of resistance by the hand.

you are reducing, and when you have reduced enough continue on two meals a day so you won't get fat again.

Unless one deliberately stuffed with the most fattening foods, it is practically impossible not to lose excess weight on one meal a day. But on two meals a day one can maintain or even gain weight, and hence some care is needed in watching the kind and quantity of food eaten.

However the two meal plan does help. Reports of a large number of people who changed from three to two meals (but who made no particular effort in regard to controlling the amount or nature of food eaten) showed that the effective quantity of food reduction was about twenty per cent. They ate slightly more at each of the two meals than they had at each of the three meals, but not enough more to make up for the omitted meal. Several of the people in this experiment lost surplus weight they had been carrying.

For any one who tends to be overweight, I would advise the two meal a day plan as a permanent one. In fact two meals a day is enough for all adults not engaged in strenuous manual labor.

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The Use of "Filling" Foods

For those who understand the general principles of nutrition in relation to fat formation, the problem of losing weight is not a question of knowing what to do, but of possessing the will power and perseverance to apply their knowledge. Hence any method that serves to satisfy the appetite without the consumption of an excess of fattening elements is decidedly helpful.

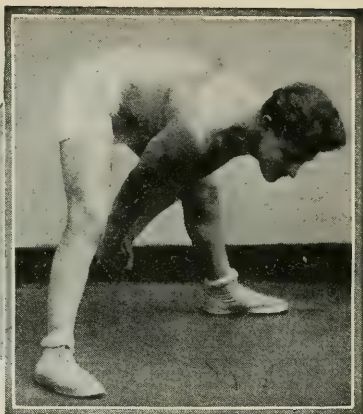
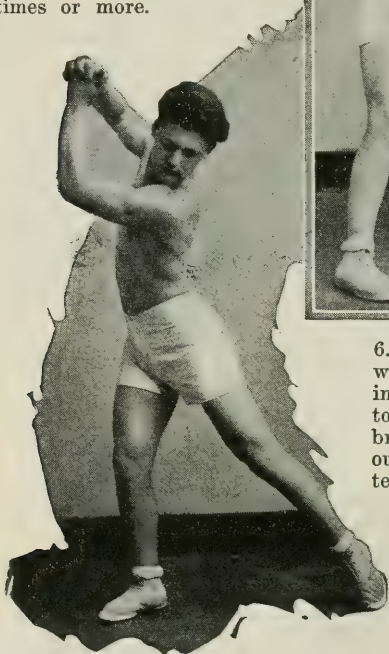
One such method is the use of bulky or filling foods. Happily the foods that have the most bulk for the least fat-forming substance are also foods that have valuable non-fat-forming elements. Chief of these are fibrous or pulpy vegetables and fruits. Salads and greens fill one up and satisfy the appetite. Turnips and carrots, squash,



4. Standing with feet apart and without bending the knees, bend sideways and touch the floor with one hand, then to the other side, repeating twenty times or more.

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5. This exercise represents the golf twist, and may be varied to show the base ball spine twist. Repeat ten times or more.



6. This exercise shows the wood chopping twist. Starting with the hands clasped together upon the head, and bring the arms between the outstretched legs. Repeat ten times or more.

string beans and all similar dishes have the same effect. In the case of fruits like oranges eat the pulp.

Whole wheat bread is better than fine flour bread for the same reason, but much bread of any kind is taboo if one wants to reduce quickly.

Satisfying the Appetite by Mastication

Always important, the thorough mastication of one's food becomes doubly important on the reducing diet. To convince yourself of this try an experiment. On two separate mornings, having eaten alike the day before, lay out two breakfasts consisting of exactly the same quantity of bread and milk. In the one case make milk toast of the combination and eat it in a hurry; and in the other case make dry toast and eat it slowly and without liquid and then sip the milk a spoonful at a time, holding it in the mouth till it "swallows itself." The effect will be that in the latter case you will be thoroughly satis-

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fied with a small quantity of food and the former case you will get up from the table hungry.

Whatever foods of a starchy nature you eat while on a reducing diet should be of firm hard texture and masticated most thoroughly. Fruits and vegetables should be eaten uncooked as far as feasible for this same purpose of encouraging mastication. Liquid foods like milk, soups and fruit juices should be taken slowly and never gulped down.

By the use of two meals a day and the following of these suggestions as to "filling" foods and thorough mastication, you will find your troubles of hunger on the reducing diet very largely eliminated.

Less Variety of Food at Each Meal

Modern conventional eating habits seem to be planned to encourage over-eating and gluttony. Not only are dishes over-seasoned and made into soft, quickly eaten forms, but



7. Standing with hands on hips, kick forward as high as you can with one foot fifteen times. Then kick backward and finally sideways as high as possible, fifteen times each. Try the same set of movements with the other leg.

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8. Standing with hands at the sides, bend the knees and lower the body to a squatting position, at the same time, bring the arms forward and upward high over the head. Bring arms down on rising. Repeat until tired.

the habit of serving many courses and many dishes looks like a deliberately planned attempt to bait the appetite. We eat till we are satisfied with one thing and then we turn to something else with contrasted flavor and take a fresh start. Under such a plan of eating one never feels satisfied until there is actual symptoms of an over-full stomach.

But when meals are simpler and are eaten with deliberate slowness and thorough mastication the appetite is satisfied with less food. I would therefore advocate that on the reducing diet you confine the meal to a few simple items, and secure the needed variety from meal to meal and not at each meal. Moreover avoid the custom of serving deserts after the main dishes of the meal are finished. Eat the tastier and softer things first; you will not so readily be tempted to eat in excess if the last dish is of simpler sort, and especially if it is one that requires mastication.

PART III

Exercise for Reduction

How to Burn Up the Fat

The primary purpose of exercise for weight reduction is to burn up as much fat as possible. This means that the exercise must be of a vigorous nature and be kept up for a sufficient length of time to consume an effective quantity. Leisurely walking or strolling in the park on Sunday afternoons will not gain noticeable results. Nor will fancy movements of the arms with or without wands or light dumbbells be effective.

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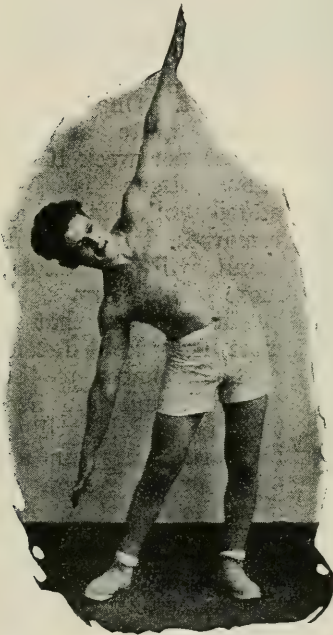
Even heavy straining tests such as chinning a pole, or lifting a weight, or jumping, or even short sprints, do not have much effect because these movements, while tasking the full strength, are of but a short time in duration. Vigorous exercise that makes one use his lungs to their full capacity and sweat profusely, and that are enjoyable enough to be kept up for a considerable period, will be effective. Distance running comes in this class.

Hiking for long distances and at a gate that will make one breathe to full capacity will be nearly as effective. There is a marvelous difference between the effect of slow walking and very rapid walking, in fact the latter pace

is a more energetic exercise than running at the same number of miles per hour. Walking a mile a day will not do much, what you want is a walk of from five to ten miles a day, or from one to two hours vigorous exercise.

Indoor exercises for men that are as effective as fast walking and running are boxing and wrestling. Swimming is good, of course, but one must be able to swim; standing around in the water and letting the waves do the work will not reduce you very fast—nor will floating on your back.

Vigorous dancing is a pretty strenuous exercise and one suited to ladies, and when a fat lady dances she has to do more work than she will after she gets thin.

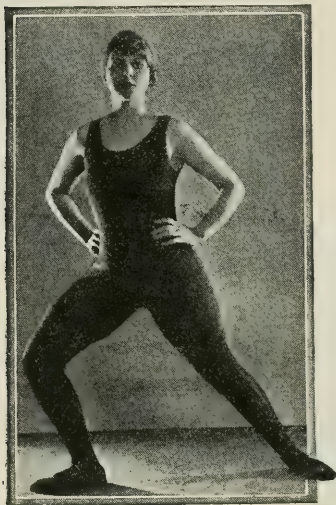


9. This exercise shows the most effective side bend accomplished by throwing one arm up as the other goes down. This is really the modern "bomb throwing" action, which is a sort of overhead discus throw. It is a full arm swing, the other arm going down the other side as the bomb throwing arm goes up.

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Exercises to Build Up Muscle

I have insisted upon the importance of moderately heavy and long continued exercise if one is to burn up much actual surplus fat in that fashion. But there is another reason for exercise in the general reducing program. Fat people have usually been inactive, this fact together with the infiltration of the muscular tissue with fatty cells has resulted in a deterioration of the muscles. The bodily form, such as it is, has been made by a fat distended skin. If this fat be removed by fasting or dieting, the remaining bodily structure will lack in symmetry and strength.



10. Step far to one side with one foot and bend the knee lowering the body as far as possible. Do the same on the other side. Repeat until tired.

Therefore it is highly desirable to build up the muscular structure while one is removing the surplus fat. One may not reduce quite as many ounces per week if muscular tissue is being added while fat is being removed, but the final result will be decidedly more satisfactory.

The muscles that are most likely to be deficient in the fat person are those of the trunk and arms. The leg muscles will not be particularly undeveloped for the reason that even the laziest fat man, if he walks at all, will have given his leg muscles pretty stiff exercise because they have been lifting extra weight. Not so

the muscles above the hips. The fat individual rarely stoops or bends the body. The movements of his chest and arms have also been constrained and hampered and will need development.

Most essentially of all will be the development of the abdominal muscles. Here the presence of fat has most distended and deformed the body, and the only way to restore the form to grace and beauty is to develop the muscles. The very best set of exercises that can be taken

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12. Lying on the back, raise the legs perpendicularly, then lower them first to one side, then to the other. Repeat until tired.



13. This is a method of hip rolling offering not only good exercise, but the most effective form of massage for reducing excess flesh on the hips. By raising the legs in the manner illustrated, practically the entire weight of the body is thrown upon the hips. Effective results are then secured by rolling from side to side on the hips as shown. Try this with the legs elevated successively at higher and lower angles. Continue until tired.

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14. Standing with your back to the mirror, see if you can bend slowly backward until you can look into the eyes of that girl there. You can do it, if not now, then eventually.

during a program of reduction are those applicable to the abdominal region. Such exercise will have to be graded as to difficulty, or they may be too strenuous at the beginning for the person who is overweight and who has not been exercising.

The least strenuous movement will be the alternate lifting, while standing, of first one knee and then the other. A second movement a little more difficult is the alternate raising of the legs while one is lying on his back. The third form of exercise in the scale of increasing strenuousness, is to raise both legs at once; this can be made more difficult by lying on your back on a couch with the legs extended and the heels down on the floor. You may need something to grasp above your head to keep

your upper body from lifting instead of your feet. Let this suggest the next step in the exercise. Find a place to lie down with something solid to stick your feet under and then raise to a sitting position. At first you may have to hold your hands well down to stick your feet under and then raise to a sitting position. At first you may have to hold your hands well down to do this. Now you can increase the strenuousness of the exercise by folding your hands on your chest, and next back of your head. Finally extend your hands at arms' length above your head. Still further power can be put into this series of exercises by holding weights in your hands at arms' length above the head, and better still by lying on a couch or other object with your feet held down and your body from the hips upward extending over the edge of the couch so that it can bend below the level of the couch. When you have reached a point where, with

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your feet strapped firm, you can bend your body down backwards from a dining room table and, with your arms fully extended, pick up a five-pound flatiron from the floor and then come back to a sitting posture—you will no longer need reducing treatment.

I have outlined this series of exercises in full because they give such an excellent range of strenuousness from those that the fattest person can begin with to those that require the physique of a gymnast. And all of them are right to the point of applying the remedy to the region that most needs it.

Local Effects of Exercise

I have discussed the effect of exercise in burning up the accumulation of fat, and in building up muscle to replace the fatty tissue and give grace and strength to the rebuilt body. The question will now naturally arise as to whether local exercise can be applied to remove fat in a particular region of the body. The answer must be that this local effect is not great, and that we must depend on general removal of fat from the body in order to materially reduce any portion. I do not say that there is no local influence. The exercise of local muscles will cause a shortage of oxidizable food material in the blood and it is not unreasonable to expect the local fat in the region to be more drawn upon than fat of a more remote region. Moreover there is the building up of active muscle tissue in the region and fat is less likely to be deposited in actively muscled regions than in inactive, comparatively dead organs.

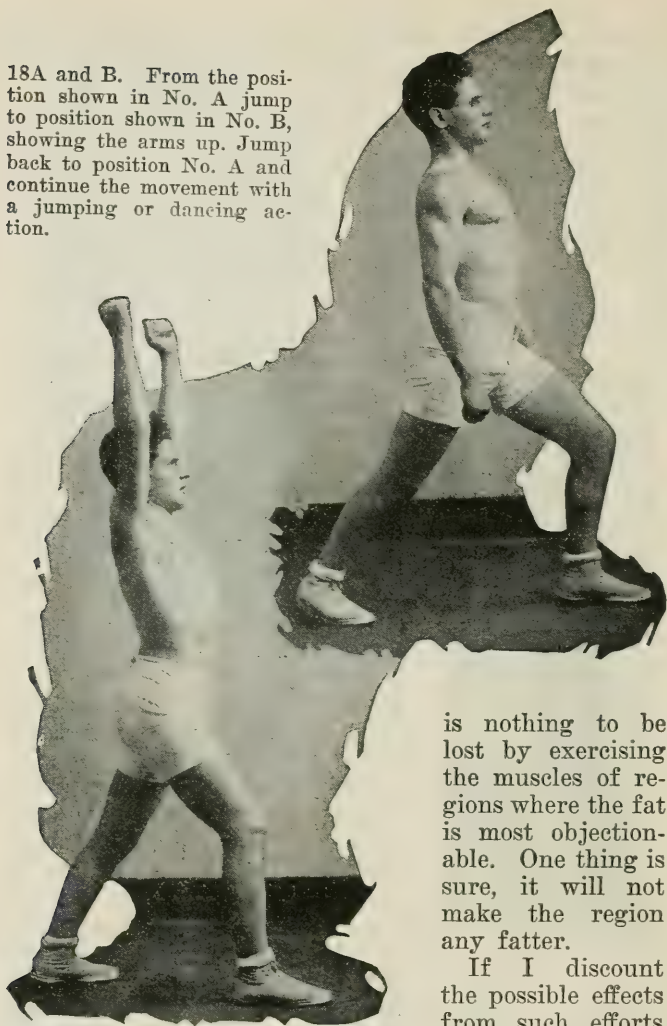
As long as exercise of some sort is desirable and necessary for the best results on weight reduction as a whole, certainly there



17. Standing a foot and a half from the wall, pace the hand against it on the level with the shoulders. Bend the elbows and lean forward from the ankle until the chest touches the wall, and then push back. Repeat.

HOW TO REDUCE WEIGHT

18A and B. From the position shown in No. A jump to position shown in No. B, showing the arms up. Jump back to position No. A and continue the movement with a jumping or dancing action.



is nothing to be lost by exercising the muscles of regions where the fat is most objectionable. One thing is sure, it will not make the region any fatter.

If I discount the possible effects from such efforts

to reduce locally it is to keep any one from disappointment due to centering the attention on such local measures and failing to heed the necessary rules of diet and exercise that will reduce the general store of bodily fat. The correct way to secure symmetry of the body is to remove all the fat and build up all the muscles. By the inherent laws of the human form, the general and complete development of healthy muscles tends to correct unbalanced development. And it is more feasible by

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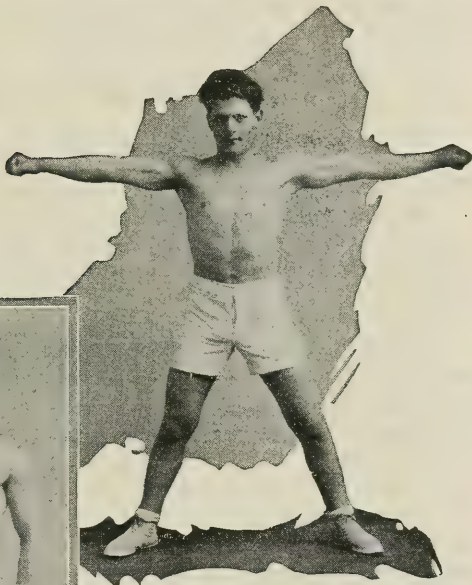
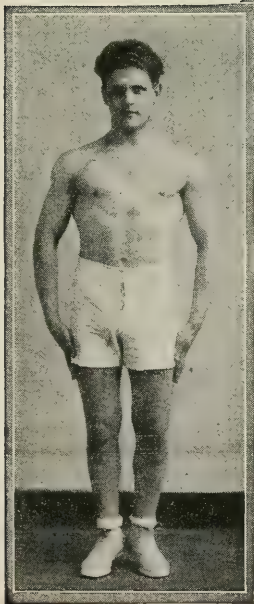
special exercise to build up an undeveloped portion of the anatomy than it is to reduce the fat locally.

PART IV

Practical Points on Weight Reduction

Diet or Exercise--or Both

Dieting without exercise is usually a more successful method of reduction than is exercise without dieting. The reason for this is that exercising tends to increase



19A and B. From position shown in No. A, jump to position shown in No. B, spreading the arms as illustrated. Back to position No. A, continuing with a jumping or dancing action. This may be varied by placing the hands on the head and bending the one side with the legs spread apart. Back to position No. A. Bend to the other side, and so on.

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the appetite but dieting does not tend to increase one's laziness—in fact the effect is quite the opposite, for a man who is hungry is more likely to be more active than one who is satiated.

Dieting is also the more rapid method of reduction, unless one is in position to give a very large part of his time to strenuous exercise. Obviously the sensible method is a combination of diet and exercise. This will give the most rapid reduction and at the same time will develop strength and beauty of form that cannot be won with dietetic reduction alone. The only drawback of the combination of diet and exercise is that the exercise will stimulate the appetite and will power and skill will be required to prevent the losing of one's self control and the eating to full capacity of all the richest and most fattening of the cook's temptations.

How Fast to Reduce

You can reduce at any rate you wish from a few ounces up to at least five pounds a week. The reasons for advocating a medium rate of weight loss are that too slow a rate will discourage you and cause you to become indifferent and that too fast a rate will be rather trying and one is likely to break out of bonds and go back to old habits.

A loss of about half a pound a day is amply rapid yet is entirely feasible for those who are considerably overweight. As the weight approaches the normal it is well enough to be content with a slower rate of reduction so that you will gradually work into habits of eating and exercise that you can maintain on a permanent basis. Thus you will avoid the danger of deciding that your reduction is done and you can henceforth conduct yourself as you please—that is without any care as to diet and exercise, which in practice too often means to go back to the habits of over-eating and under-exercise that caused the original trouble.

Importance of Accurate Weighing

A good scale is essential to a satisfactory experience in weight reduction. But don't weigh yourself too often. Daily weights are meaningless as trivial effects, such as the amount of food in the digestive organs or amount of water in the body at the time of weighing, will offset and confuse the actual fact of weight loss due to fat elimination.

HOW TO REDUCE WEIGHT

Weekly weighings are the most satisfactory. Find a good scale and weigh yourself. Then follow a consistent plan of diet and exercise for a week. Then go back to the *same* scale and weigh yourself again. If the reduction is satisfactory keep up the program with which you started. If too slow be a little more strict the next week; if it is amply rapid and the ordeal is proving trying, ease up just a *little*.

Don't get discouraged if the second week's weight loss is not quite up to the first. This is natural because of a loss shown the first week from the lighter average contents of the intestines and a decrease of water required to keep the surplus food material in solution.

How to Determine Your Ideal Weight

A scale is very useful to enable you to see how fast you are reducing. But the best device to tell you when you have reached your ideal weight is not a scale but a mirror.

I have studied many tables of so-called normal weights arranged for sexes, heights and ages. They are not of much practical use because they are based on averages of people as they are and not as they ought to be. Moreover, even if we had tables derived from a large group of individuals who were all in fine physical condition, a rigid application of such standards to a particular individual would not be as good a criterion as to the intelligent human eye. Individuals vary fundamentally in build; some are of broad and heavy frame, others light-boned and slight. Each type of frame has a degree of development of muscle and of fat that will give the best combination of bodily beauty and physical fitness.

Sex Differences in Weight Ideals

The natural weight of woman is less than that of man. It is even slightly less than for a man of the same height, because her skeleton is lighter and chest and shoulders less broad. This sexual difference in the size of the two sexes has been artificially increased under a system of civilization that considered it immodest for a woman to be strong and healthy. Within the last generation, with our more sensible dress, greater freedom in labor and in sports, women have increased appreciably in height and weight.

There is the same difference in nature between the tendencies of the two sexes to carry fatty tissues, that is,

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the woman is relatively the fatter. But here again the natural difference has been unduly exaggerated. The same restraint from healthy activity that kept her from developing her full natural size has caused her to tend to store too much bodily fat. Until very recently style in feminine forms and dress abetted this tendency.

With the present styles and ideals of slender feminine beauty, a woman need no longer excuse her overweight on the ground that fashion demands it. Reasonable muscular development will give her ample "form" to look her best according to our modern ideals.

The Age and Ideal Weights

The notion that people should get heavier as they get older is entirely wrong. They do get heavier because they cease their youthful activities and accumulate fat. But nothing is better established than the fact that this added weight is a detriment to health. Proper care of the body will maintain it in the years of maturity to almost the same muscular development as in youth. But it is better, when the muscular development is lost, for the elderly person to be conspicuously thin than to allow the lost muscular tissue to be replaced by fat.

For any age the ideal condition of body fitness is that of hard firm muscle with only a sufficient amount of fat to give a slight padding beneath the skin. The muscles should always be sufficiently exposed so that their play in action can be plainly seen. The best test of this is upon the abdomen. Here fat will most quickly hide the muscles, yet in the man in the pink of bodily form the transverse corrugation of the abdominal muscles is always visible. The fatty covering here should never be thicker, when pinched up, than one's thumb.

CONSTIPATION

CONSTIPATION

Its Cause and Cure

PART ONE

GENERAL CONSIDERATIONS—THE CAUSES OF CONSTIPATION

THE organ which in common speech is referred to as the large bowel, and in the exact phraseology of the physician, as the large intestine, or colon, performs the important and indispensable function of removing from the body its solid waste products which are derived from the indigestible residues of the food ingested and metabolic wastes, epithelium and bacteria, which, if not disposed of, would remain to clog and poison the body. The bowels are the sewage pipes of the human body and their functioning is effected and regulated by a combined muscular and nervous interaction. Obvious as is the importance that a healthy functioning of the bowels be maintained, there is yet no disorder so prevalent as the condition called constipation which is, in effect, a blocking up, or more strictly speaking a break down from some cause in the sewage system of the body, resulting in a retardation in the passage and undue retention of the solid waste products in the colon. Just as an inadequate sanitary arrangement for disposal of sewage in a city would react injuriously to the health of those living in the community, sometimes breeding and spreading serious disease, so, if the mechanism which does this work in the individual body is defective, may there be disturbances in the general health. And this contaminating and poisoning effect on the body is apparent in the constitutional disturbances which often appear to afflict the sufferer of long standing constipation: headache, dizziness, depression, mental and physical torpidity, irritability, loss of appetite, etc.

CONSTIPATION

Constipation poisons the body by rendering the blood impure. It fills the blood with all sorts of foreign material, or impurities, which the various purifying organs, of course, endeavor to eliminate. In many cases the efforts of these organs, where disease has existed for a long time, are unequal to the task. The impurities accumulate in such vast quantities that the blood cannot be cleansed of them, and then these poisons begin to search for another outlet. They must be eliminated from the body, for if they continue to accumulate, there comes a time when their presence will be inimicable to life; when they will actually cause death. Therefore, in seeking an outlet for these impurities, the nervous forces of the body finally succeed in creating what we call a disease. This disease is nothing more than a much-needed means of relief. It compels you first of all, to stop eating. You lose your appetite; you stop filling your stomach beyond its requirements. The process of manufacturing poison in the alimentary canal ceases, and the disease begins the renovating process.

Self-poisoning is the cause of nearly all complaints. Constipation is one of the chief causes of self-poisoning. Melancholia and "the blues" are brought about, in practically every case, by self-poisoning. The blood does not contain the virile elements necessary to properly nourish the body. It does not carry away impurities. It does not feed the broken-down tissue with the new life cells which a body in this condition so badly needs. It is comparatively easy to prove that melancholia is caused by self-poisoning or a deficiency in the quality of the blood. The worst case of "the blues" can be remedied temporarily by a long walk with deep breathing in the open air, or by any exercise that will so stimulate the functional organism, that it will supply the body with an increased quantity of oxygen, which means more electrical energy, more human power. This energy is conveyed to the blood, and the blood in turn is able, under its influence, to at least temporarily relieve the depression. It gives one more vim and energy; it makes life seem brighter and rosier, at least for the time being. If such a change as this can be brought about simply by a moderate amount of exercise, then what can be accomplished through the scientific adaption of the various methods available for strengthening and renovating the body by this means alone!

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In constipation there is straining at stool and difficulty of evacuation; the feces being hard and dry. In health there is usually one regular daily bowel movement; with some persons, two. With some persons the bowels act every forty-eight hours; this does not indicate constipation, provided that the defecation is not attended with difficulty and the evacuation is complete and sufficient. This is a good point to remember, for occasionally, one may be attempting to establish daily bowel action when constipation really does not exist.

Constipation is sometimes a secondary condition brought about by other diseases which affect the intestines, or by diseases or abnormalities in the intestine itself. The detection of the real or primary cause of constipation in such cases may often call for painstaking and skilled diagnosis, and very occasionally will elude all efforts to determine its cause. And, of course, when this is the origin of constipation, its cure depends on the treatment of the primary disease of which costiveness is then but a symptom; while relief of the constipation is to be secured by careful and individual treatment.

But the common garden variety of constipation has no such hidden and deep rooted causation. The average case of this disorder is due simply to neglect of ordinary common sense hygiene—to wrong foods, to wrong eating and to bad habits of life—and would be readily cured by a reversion to an intelligent and healthful mode of living—a simple way of banishing their obstinate ill that it does not usually occur to the sufferer of constipation to resort to, though he has taken every shape of pill or potion that the drug store afforded in seeking for mitigation of his complaint.

Among the factors besides those already referred to which singly or in combination cause constipation, may be mentioned as especially common:

An individual peculiarity or tendency to sluggishness of the bowels which is thought to be hereditary and peculiar to dark complexioned persons of the so-called bilious temperament. But all cases of constipation resulting from this cause can be readily controlled by a diet made up of foods having a large bulk of fibrous wastes.

A very common cause of torpidity of the bowels is the failure to attend to defecation when the need for it makes itself evident and to postpone it to a convenient time.

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In nervous disorders, and particularly in neurasthenia, constipation is often an accompanying symptom and results from a lack of the nervous force transmitted to the intestinal muscles—a condition technically referred to as nervous inhibition. In such cases the constipation and the nervous disorder react on one another: the constipation aggravating the nervous disorder and the latter intensifying the constipation—a condition that demands thorough-going treatment to rehabilitate the bodily health.

Several derangements that are factors in producing constipation in many cases and yet are themselves caused by dietetic mistakes akin to those which bring about constipation should be mentioned.

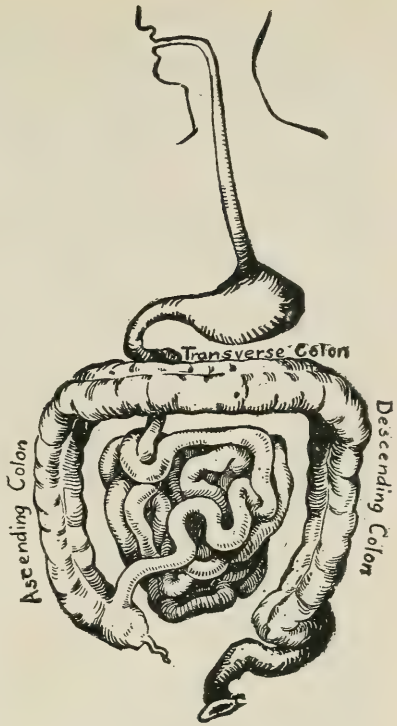
(1) Through an inefficiency in the quality and quantity of the intestinal secretions—the bile and pancreatic juices—the digestion of the food is impaired and its passage through the small intestines considerably delayed and hindered. In such cases the bowels may move regularly, but the stools are insufficient and evacuation seems incomplete and unsatisfactory.

(2) Dilatation of the intestines; and (3) weakness or atony of its muscular coat caused largely by an impoverishment in the nourishment of the intestinal tissues. Dilatation is a condition in which through loss of tone in the tissues, the intestine relaxes and stretches, so that the intestine practically loses its functional power of forcing on its contents. Long existent constipation is often a factor in bringing about dilatation, so that while constipation may cause dilatation, the dilated condition of the intestine may tend to perpetuate the constipation. In muscular atony, the muscles have lost their tone and strength and as a result are incapable of inducing the peristalsis necessary for forcing along the contents of the bowels.

It will be an advantage to briefly describe the anatomical relations of the alimentary canal—the mechanism which has to do with the digestion of foods. When the food is swallowed it passes over the back of the mouth into the chamber called the pharynx and from thence into the long tube, the esophagus, which connects with the cardiac orifice of the stomach on the left side of the body. After the work of digestion has been completed in the stomach the food is passed into the small intestine through the right opening of the stomach called the pylorus. The small intestine is about

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twenty feet in length, and while in reality continuous, is arbitrarily divided by anatomists into three parts: the first twelve feet are called the duodenum; the next three feet are the jejunum; and the final portion (about five feet) is called the ileum. The small intestines are convoluted, so as to lie in a comparatively small space in the abdomen. The small intestines do not join the large intestine end to end, but enter it at the side a few inches down. The portion of the intestine beyond the point of junction is a closed or blind sac called the cecum, having on its lower side a little process—the vermiform appendix.



The Alimentary Canal

The large intestine is about five feet in length and its caliber is considerably larger than that of the small intestine. It has also three arbitrary divisions: the cecum already mentioned, the colon, and the rectum. From the cecum, which lies near the right haunch bone, the colon ascends to the under surface of the stomach where it turns to the left and passes over to the left side of the body. Here it again turns downward to the left haunch bone where it makes an "S" shaped bend called the sigmoid flexure and terminates in the rectum. The end of the rectum, the anus, is tightly closed by a circular muscle called the sphincter. When there is an accumulation of waste matter in the rectum, its presence affects a sensory nerve and an impulse is conveyed to the sphincter muscle which relaxes it and permits of the passage of the contents from the body.

After the food has been digested in the small in-

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testines the indigestible portions of it are conveyed to the large intestines. The food is pushed onward through the intestines by means of a peculiar wave-like movement of its walls called peristalsis due to the contraction of its longitudinal and circular muscular fibres. Their contraction results in a shortening and narrowing of the calibre of the tube and in this way the contents are propelled onward to the rectum, from whence they are finally expelled from the body.

PART TWO

THE TREATMENT OF CHRONIC CONSTIPATION

Drugs

THE sufferer from constipation usually seeks for relief through cathartic and purgative drugs. It is true that the drugs give temporary relief, but they cannot cure constipation. The effect of purgative drugs is due to their irritant quality and by reason of this property they greatly stimulate the nerves and excite peristalsis and evacuation. But if the use of a given drug is continued, the nerves and mucus membrane become dulled when accustomed to it, and in order to get results from that drug, a larger dose has to be taken, and finally it loses its effect altogether. A new drug is tried: it gives relief for a time, but as with the first drug, the tissues acquire a toleration for it, and then a new drug must be resorted to and so the miserable sufferer continues changing from one drug to another seeking for one that will bring about the desired cure, but in vain. No drug store chemical has ever cured, or ever will cure constipation, but on the contrary their continued use by lessening the sensibility of the nerves and irritability of the muscles of the intestines aggravates the condition they are taken to overcome, and render doubly difficult the permanent cure by rational methods. Physicians admit the injurious effects of the habitual use of cathartics and in their text books name it as one of the prolific causes of habitual constipation.

I regard this as a matter of such importance that I wish to emphasize the necessity of giving up cathartics or never resorting to them for constipation. To a certain extent they are poisons to the body. The stomach, the organ with which they first come in contact, recognizes them as poisons, and makes every effort to eliminate them from the body as quickly as possible. These poisons, when their use is continued, finally lessen the delicate sensibility of the nerves with which digestive organs are equipped. As the energy upon which these organs depend for their natural functions comes through these nerves, it is quite plain what the effect will be when one makes a

practice at frequent intervals of turning to cathartics for relief. The nerves and digestive functions lose their sensibilities, they become dulled and doped; and then one soon experiences the first symptoms of what we term chronic disease.

Cathartics, especially when mineral in character, should be avoided. Drugs are harmful; they lessen one's vital efficiency, they dry up the glands that furnish the digestive juices; and in many ways they spell disaster to the physical organism.

The Enema or Colon Flushing Treatment

It is true that it is essential often to relieve the sufferer and to effect quickly the removal of the clogging wastes; but for this purpose it is not necessary to resort to drugs. The cleansing of the intestine can be effected by injections of water—the procedure which is known as the enema or colon flushing. As a means of temporarily remedying constipation, this particular method can hardly be improved upon. It can be most highly recommended where one is suffering from a sudden attack of an acute disease of any kind.



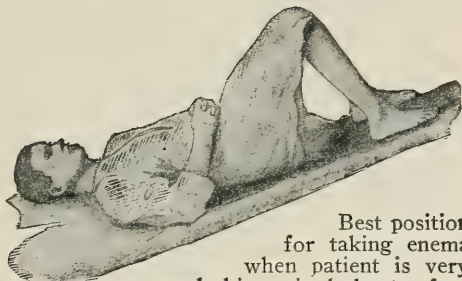
The knee chest position for taking enema, the best of all positions, allowing the force of gravity to assist in filling the entire colon.

Very often the injection of a pint or a quart of water will be sufficient to bring about a satisfactory activity of these parts. The tempera-

ture of the water may be about blood heat (98 degrees Fahr.), but in many cases the physician might advise an enema at a lower temperature, as the cool water has a very valuable tonic effect on the intestine. There are various devices for giving these enemas that can be highly recommended. But they can be satisfactorily administered by means of the ordinary fountain syringe obtainable at any drug store. Various positions may be assumed in taking the enema and in order to get best results, it is important to take the right one. The best position for the enema is that known as the knee chest or knee elbow position in which the patient assumes a position on his knees elevating the hips and resting his head on his arms. In

this posture the water aided by gravity can most easily reach the farther portions of the large intestine. Where the patient is weak, or for any other reason it is not convenient to take the enema in this position, it may be taken lying on the back in such a manner as to elevate the buttocks. These two positions are illustrated

in the accompanying photographs. A satisfactory cleansing of the colon can not be secured when the enema is taken while the body is lying on the right or left side. One should not,



Best position for taking enema when patient is very weak, hips raised about a foot above the head, so that force of gravity will help the inflow of water through the entire colon. Foot of couch or bed may be raised without disturbing patient.

however, depend upon this means of cleansing the body for the cure of constipation. The alimentary canal can perform its duties, in every way, without artificial assistance and the treatment to be presently outlined is directed to restoring healthful conditions of the bowel.

The Treatment

It must be plain that as constipation is due to wrong diet and hygienic sins of omission and commission that its cure depends primarily on the righting of one's mode of life.

In the Beginning

In severe constipation it is advisable, in a great many cases, as an initiatory and relieving measure to immediately resort to the colon flushing treatment, previously described; that is, cleansing the lower bowels with from two to four quarts of water. Remember that the colon-flushing treatment merely is a measure for securing temporary relief. I do not question its value when it is actually needed, but the presence of constipation shows that the alimentary canal is not doing its duty, and therefore, we should trace the fault direct to where it belongs, and try to remedy it there, rather than to continue at regular intervals to remove the obstruction, which is often merely the re-

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sult of dietetic faults. The cause of the trouble is often located further up—in the small intestines or the stomach, and of course, they cannot be reached in this manner. Therefore, the best means of really remedying the trouble would be the use of those foods which would be inclined to accelerate the functional activity of the stomach and small intestines.

Regulating the Bowels

First of all it must be impressed on the sufferer from this trouble that it is all-important to promptly heed every inclination to move the bowels, and to form regular habits as to time for relieving them. This can be readily cultivated if one will pay attention to the hour at which the bowels naturally move—with many persons this is early in the morning—and regularly attend to the matter at that hour. The bowels if thus properly attended to will regulate themselves like clock work.

Correction of Dietetic Habits

Overeating must be avoided. The ingestion of food in excess of bodily requirements constitutes a severe tax on all the organs concerned in its digestion and in the disposal of the resultant waste, and if long continued this overworking of these organs may bring about a sluggish and constipated condition.

The necessity for thorough mastication and insalivation of the food must be impressed on the sufferer from torpid bowels. Deficient mastication is unquestionably a factor in the causation of constipation. The digestive process cannot be carried on properly when the stomach and small intestines are compelled to supply the digestive juices furnished by the saliva of the mouth, and also to bring about that maceration of the food which represents the duty of the teeth. "The stomach has no teeth" is a statement that has been frequently made, but very few people seem to have been impressed with its truth. One of the first means of remedying defects of the alimentary canal is to remember the importance of chewing your food and to remember also the importance of eating food that requires chewing. Food that does not require mastication is really not fit for the human stomach. The thorough mastication of the food prepares it for digestion. Not only does it reduce it to a pulp or liquid, but it thoroughly mixes the saliva with it, and the process

of digestion under these circumstances is much more satisfactory.

The Importance of Water Drinking

Many people suffer from constipation because they do not supply the system with a sufficient amount of water. This does not mean, however, that one should force himself to drink large quantities of water, but one should acquire a habit of drinking at least a glass of water for every two hours during the day, excepting the time consumed in sleep. It is not necessary to drink a glass every two hours, but the entire amount of water to be taken during the twenty-four hours should average very nearly this amount. I understand that some Japanese make a habit of drinking at least a gallon of water a day, but it appears to me that this is a great deal more than is required.

Corrective Diet in Constipation

Diet and Health

"Tell me what you eat and I will tell you what you are" is a truism that is frequently quoted. The body is nourished, you might say "manufactured," from the food that we eat. But little thought is needed to realize, after consideration of these facts, that food has a great influence on the functional activity and strength of the various organs of the body. Of course, some persons appear to possess so much vitality that they can break every recognized health law and yet seem to enjoy good health to the very end of their days. This is unusual, however, in these times. Nearly all of us are suffering for the sins of our forefathers, and therefore the science of the maintenance of health is fast obtaining recognition everywhere. You will often hear the statement, when you are trying to interest your friends in some of the rational dietetic theories, "Oh, what's the use? My father and mother lived to a good old age, they never knew anything about these new-tangled ideas, and they were always healthy." In those instances, these statements are no doubt sometimes true, though more often they are not, and it is an unquestionable fact that if the fathers and mothers referred to had understood and followed out the science of dietetics, they would have lived longer and would have been really and truly alive while they did live. Many persons remain on this earth and manifest a certain amount of evidence of being alive, but they are so doped mentally and physically, that there is but little real life about them.

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and thousands and thousands die in this manner many years before they are finally carried off to the cemetery.

The Food to Avoid

The fault in the diet of the average individual suffering from constipation is that it is of a too concentrated character and what may be described as pasty. By concentrated foods I mean those foods from which the fibrous elements have been removed. It is perhaps most readily illustrated in the removal of the outer covering, which we term bran, from wheat. This process to a certain extent applies to a great number of the important articles of food. The idea seems to be widespread, that the more easily food is swallowed, the less we have to chew, the more delicious it will taste and the more advantageous it will be. The results of these erroneous conclusions are pitiable. They are to a large extent to blame for the weakness, sickness, and the pain and misery from which humanity suffers.

White bread, cake, pie and other forms of pastry, products like macaroni and spaghetti made of white flour, and other white flour foods, potatoes and meat, which so largely make up the diet of the average household do not yield enough residue to encourage bowel activity, but rather tend to induce sluggishness.

It must be distinctly remembered that food, to be properly digested, must contain a certain amount of waste material. This waste material is required to give the necessary bulk to the food, as well as to accelerate the activity of the functional processes of digestion.

First of all, then, avoid concentrated foods.

The elimination of these refined white flour foods is essential in constipation. Also it may be necessary to eschew such starchy and concentrated foods as cocoa, cheese, polished rice and other refined cereals, and tapioca.

Highly seasoned dishes that require long, complicated preparation had better be shunned entirely. Various mixtures that have been reduced to a mushy state should also as a rule be left alone. You should seek what a great many people consider crude or "rough" foods; that is, those foods that come to you without a great deal of preparation; that are nearer to the natural state.

Bread made from the whole grain of the wheat, for instance, should be used instead of white bread. Where there is lack of muscular tone in the walls of

the alimentary canal, or where there is in evidence enlargement or dilatation, there is often need for more drastic treatment than can be secured from merely avoiding white flour products.

Remedial Diet in Constipation

First and foremost, as previously mentioned, I would suggest whole wheat bread, not the whole wheat bread that is often sold for whole wheat, but the bread that is made from the whole grain, bran and all. This is often sold under the name of Graham bread, though as a rule Graham bread is made partly of bran and partly of a low grade of white flour. I understand that this is the usual combination that is secured at the grocery store when one buys Graham bread, but even Graham flour that has been thus adulterated is far better than the "whole wheat" flour which does not contain the husks or the fibre which is found on the outside of the grain of wheat.

The following foods can advantageously be included in the diet:

In addition to the whole grain of wheat, barley, oats and rye, can be recommended for constipation, that is provided the whole grains are used in every instance. The ordinary rolled oats which may be purchased in grocery stores will be found a fairly good article of diet. The whole barley, prepared as a whole grain, is splendid. The ordinary pumpnickel, which is nothing more than bread made from the whole grain of rye, makes a fairly good laxative food.

Whole cereals, as oatmeal, flaked wheat, unpolished rice, etc.

Fruits, particularly acid fruits, as grapes, apples, oranges, etc. It is sometimes an advantage to eat the fruit between meals, though when there is digestive weakness this may not be advisable.

Vegetables, such as asparagus, cabbage, carrots, lettuce, spinach, turnips and onions.

Dried fruits, as dates, figs, prunes and raisins.

Grape-juice is often effective. This is especially so if it is taken in the form of what some call grape-coffee. This is made by filling a cup about one-third full of grape-juice, sweetening it with a teaspoonful of sugar, and filling the cup with boiling water. If one or two cups of this are taken immediately after a meal, the action of the bowels is greatly stimulated.

The lack of fats in the diet is also likely to render it constipating. The inclusion of a liberal though not

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excessive amount of fat in the diet is therefore often necessary. The practice of taking several teaspoonfuls of olive oil daily has proven an agreeable means of relief in constipation. Olive oil can be palatably used on various foods, or if one or two tablespoons are taken at night on retiring, good results can usually be secured.

Remedial Exercises for Constipation

The Importance of Exercise

The measure next, if not equal in importance to dietetic regulation, is exercise. The question may naturally be asked, under the circumstances, in what manner can exercise strengthen the walls of the alimentary canal? The muscular fibres of this important region can be strengthened by identically the same process as strength is added to the voluntary muscles of the body. Adopt a system of exercises, which will bring into active use the entire muscular system, and under such circumstances these muscles call upon the functional organism for a better and more virile quality of blood. The activity of the functional organism caused by this muscular exercise arouses the various eliminative organs to a more thorough performance of their duties, and thus poisons are eliminated more completely. The pores of the skin, for instance, during exercise, eliminate a vast amount of impurities, and the various other depurating organs rid the body of a greatly increased amount of these foreign elements under the stimulation of active exercise.



Exercise 1.—Lie on the back and draw each knee upward alternately as in running. This exercise should be continued until tired.

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Then there is another phase of the value of exercise which can be more readily recognized. The exercise of the internal muscles of the body naturally brings about a certain movement of the vital organs which is not secured under other circumstances.

Special Exercises

The Great Value of Walking

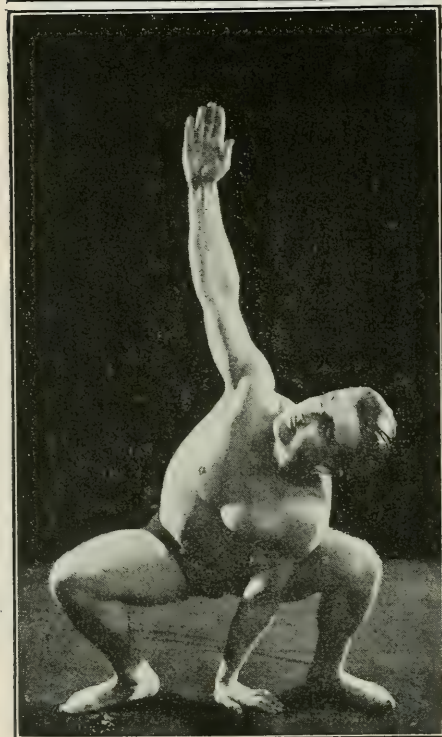
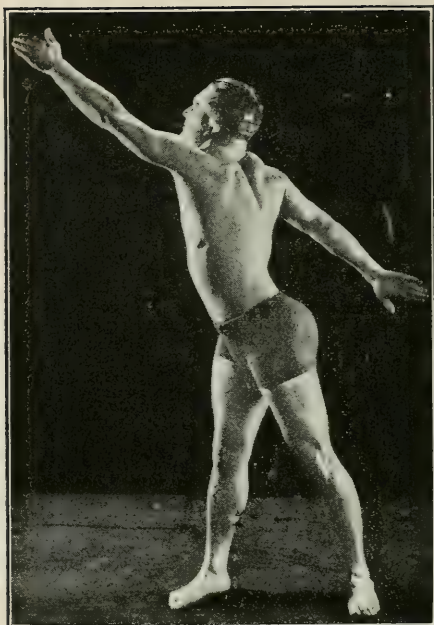
Then there is the mild stimulation of long continued exercise, such as walking. There is perhaps no better general exercise, for remedying constipation than the movements necessary in this simple exercise. Walking mildly stimulates practically every function of the entire body. It brings about increased activity that is necessary to properly purify the blood, and to cleanse and strengthen all parts of the body. It is very important under all conditions of life. It is especially valuable for accelerating the activities of the alimentary canal. It can be most highly recommended for sufferers of all sorts of chronic complaints.

Therefore, no matter what method the sufferer from constipation may adopt to effect a cure, I would especially emphasize the necessity for walking at least once each day until there is a slight feeling of fatigue. The distance to cover will, of course, depend altogether on one's strength. Some can walk many miles without fatigue, others will tire out after walking a very short distance; but if my suggestion is followed, that is, merely continuing to walk until there is a slight feeling of fatigue, any likelihood of over-exertion will be avoided.

When walking, the shoulders should be held back, and the body fairly erect, though the exercise itself should really be a sort of a continuous falling forward. You can secure a very fair idea of what I mean if you will stand very erect and then allow the body to fall slowly forward. After it has inclined forward a certain distance, then step forward; and each step should really be taken just as though you were saving yourself from a fall. When one walks in this manner, with the body falling forward all the time, walking is much more easy, the muscular system is used more naturally, and the benefit of walking is very greatly increased. It is well to note also that a much greater distance can be thus covered without fatigue.

Special Movements

Now, of course, there are various special movements that can be taken, which have a direct mechan-



Exercise 2.—
Starting from position with feet spread apart and arms extended sideward at shoulder height, rotate the body to the right, raising the left arm and lowering the right, then drop to squatting position, lowering the left arm and raising the right, then turn the body back to face forward position and return to original position. Same to the other side.

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ical effect, upon the alimentary canal, and which will be more inclined to remedy troubles of this nature than ordinary exercise. Exercises specially for constipation are valuable in proportion to the number of contractions of the abdominal muscles involved in them and I am presenting illustrations of various exercises that can be taken for this particular purpose.

Other valuable movements are:

(a) The exercise of leaning forward while sitting in a chair, pressing the abdominal region strongly against the right leg, then returning to a sitting position and repeating the same exercise pressing the abdominal region against the left leg, will be found very efficacious. This exercise should be continued until there is a feeling of fatigue. When leaning forward to press the body against the right leg, the body should be swayed far to the right, and far to the left when pressing the body against the left leg.

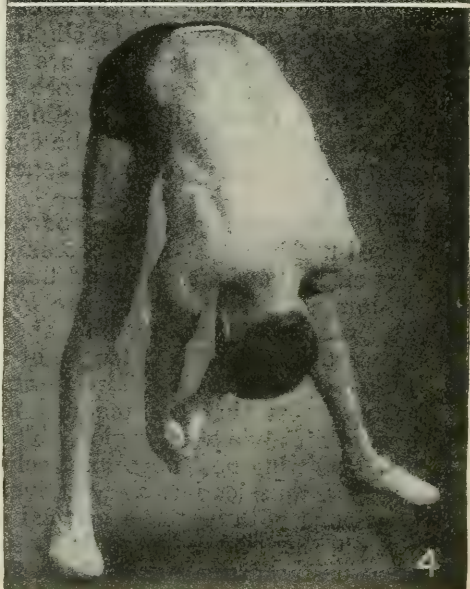
(b) Another especially valuable exercise is that of jumping slightly, just as one would when jumping a rope. The jar of this particular exercise accelerates the activity of the functional organism, and will be found very valuable as a means of arousing intestinal activity. As a rule it is a good plan to take this exercise upon rising, and it will be found more effective if you will drink one or two glasses of hot water before beginning the exercise. The exercise should be continued on each occasion until a slight feeling of fatigue is noted. At first, unless you are fairly strong, you may find it difficult to jump more than from one to three hundred times without feeling fatigued, though the exercise, ordinarily, should be continued from two to five hundred times (resting whenever you feel especially tired).

(c) The massage of the abdominal region with the closed hands can also be recommended as of value. Tightly close the right hand and then press inward on the abdominal region, using the other hand to add to the pressure, encircling the abdomen. Continue this proceeding a sufficient length of time.

Other exercises of a different nature are those various movements that are inclined to strengthen the muscles of the abdominal region. The exercise of raising up to a sitting position while reclining on the back, brings these muscles into very active play. The exercise of raising both legs to a vertical position while reclining on the back also actively uses these parts. When you strengthen the walls of the abdomen, to a



Exercise 3.—
From position shown in illustration 2A, bend far backward, as in illustration 3; bring the head as far back as possible, keeping the arms on a level with the shoulders. Then bend forward, at the same time bringing arms in front, and with elbow rigid, palms together, reach between the legs and touch the floor as far backward as you possibly can. Then swing body outward and upward far backward as before. Repeat exercise till slightly tired.



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certain extent the internal organs seems to acquire additional vigor. Therefore, you can realize the importance of strengthening these parts when constipation is to be remedied.

Proper Breathing

Though all the exercises previously mentioned are of value, there are perhaps none more valuable than what are termed abdominal breathing movements. Very few individuals breathe properly. They nearly always breathe from the chest. When you breathe in a proper manner, the abdominal region will expand with each breath inhaled, and it will contract as the breath is exhaled. In other words, the chief movements of the body while breathing should occur in the soft part of the abdominal region, instead of in the bony framework of the chest, to which it is frequently confined, especially with corseted women.

When breathing from the chest, all the vital organs lying in the abdominal region do not secure the stimulation of the movement, which is normally given them when one breathes properly. For instance, when drawing in a breath and slightly expanding the abdominal region, all the vital organs in the abdominal region secure the stimulation of a slight movement which comes with the inhaling of the breath, and the same condition exists, of course, when the breath is exhaled. Therefore, if you are breathing from the chest, if you are not breathing as you should, you do not secure the very important stimulus to all the vital processes that comes from normal breathing. In view of these considerations tight clothing, especially at the abdomen, should be avoided in any case, but is particularly important in a costive condition of the bowels.

All Around Exercise Necessary

Of course, an all-round system of exercises for strengthening and developing the entire muscular system would be advisable for one who is suffering from costiveness. In many cases, these exercises, if accompanied by a certain amount of walking and deep breathing, will be all that is necessary to bring about a radical cure of this disease, and when combined with some of the dietetic suggestions that I have made in this booklet, I can confidently say that the most severe cases of constipation can be easily and completely cured. I have known cases of fifteen or twenty years' standing to be cured by the methods suggested herein.

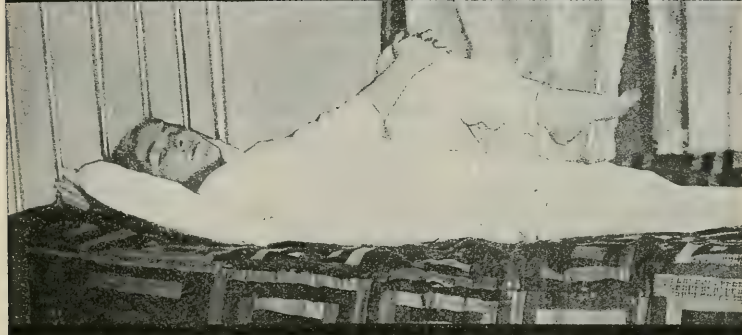
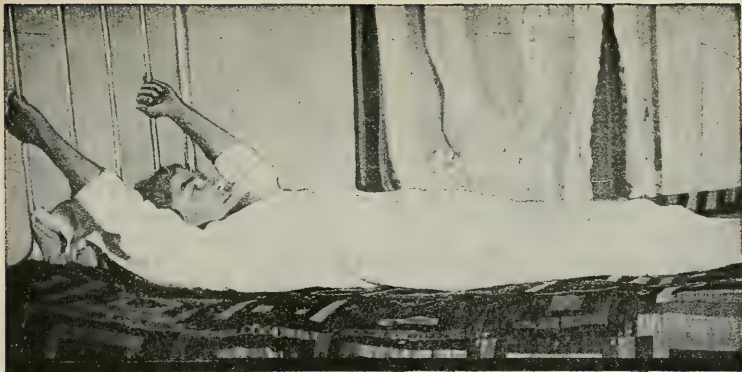
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The Cold Bath and General Health-Building Measures

The sufferer from constipation should not only take up remedial diet and exercises for his complaint, but should avail himself of every measure to tone up the general health and improve the functional processes. Outdoor life has a most remarkable influence in improving the general bodily condition and counteracting the effects of the stagnating sedentary work which form one of the factors in bringing about constipation. In general, a hygienic life should be followed.

Cold bathing, where proper reaction can be secured from it, has an invigorating influence on the circulation, nervous system and the body generally, and is to be advised as a daily procedure wherever it can be conveniently taken. It will always benefit where there is good reaction but where this is not secured or there is chilliness afterwards, it had best be given up until one is more vigorous.

A form of cold bathing of special benefit in constipation is the cold sitz bath. This bath may be taken in an ordinary bath tub or wash tub. In this bath only the portion of the body between the hips and upper thighs is immersed in the water, and the bath is taken from one to five minutes.



Exercise 4.—Assume this position and alternately contract and expand the muscles of the abdomen so as to give the stomach a thorough massage.

Exercise 5.—Grasp the knee as illustrated, and continue same abdominal movements as in the first position for a few minutes, then grasp the other knee and continue same movements until tired. This exercise can also be taken while standing.

Exercise 6.—Grasp the head of the bed, as illustrated, and stretch one leg over the other as far as it will reach. Twist the body at the waist and continue movements of abdomen as before, then assume a similar position with other leg and resume movements of stomach.

PART THREE

SPECIAL DIETETIC REGIMENS FOR STUBBORN CASES OF CONSTIPATION

The Uncooked Diet

BUT if the various means thus far described have been tried without benefit, then, of course, it becomes necessary to adopt a radical regime—methods which may appear very unusual.

In cases of this kind, I would first of all advise the use of uncooked foods.

If you have a distaste for foods of this kind, you might first try flaked grains, prepared by placing about a teacupful of flaked or rolled wheat, oats, rye or barley on the stove, with a similar quantity of water. As soon as the water begins to boil, the food is ready to serve, and can be eaten with dates, raisins, or any sweet fruit that is desired, with the addition of cream or milk if this is necessary to make it more appetizing.

The whole grains of wheat, barley, and rye, can also be prepared in a manner to make very palatable foods. Soak the grain to be used over night in a small quantity of cold water. Put it on the stove the next day and simmer gradually for several hours or until the grain is fairly soft. Be careful not to add so much water that a part of it must be poured off the grain. Fifteen minutes or half an hour before taking the grain from the stove, add dates, raisins, or any sweet fruit that is desired.

I would, of course, advise that as nearly as possible these special dishes make up the entire meal. If a meal composed of one or more of these dishes exclusively is eaten, as a rule they can be eaten to the extent of one's desires without harm. If a really serious case of constipation exists, it is necessary that one eats at least a fairly large quantity of the forms of food described.

Though the cooked foods which I have here recommended are valuable. I do not think they are by any means as good as the uncooked flaked grains of either wheat, oats, rye or barley. I have described these grains as uncooked, but, to be accurate, they are put through a steaming process in order to expand the grains before they are flaked. Therefore, one might

say they are slightly cooked. These grains can be bought in almost every grocery store, and if soaked in milk and eaten with sweet fruits of any kind, they are very appetizing. This statement is especially true of one who is really hungry. One must admit that many are continuously under the influence of what might be termed a false appetite. In other words, they have to have their palates "tickled." If you have a really wholesome appetite, foods of various kinds, in their plain state, are always appetizing, but when you desire complicated dishes, sauces of various kinds to give taste to your food, you will know then that you are eating from the dictates of a false appetite, which means no appetite at all. As long as you follow the dictates of tastes of this character, you will, of course, be without the real appetite.

Many recommend that these grains be eaten without any liquid, though, of course, when thus prepared they require considerably more mastication. Milk, cream, fruit juices, or olive oil may be used to moisten and increase the palatability of the grains. Many recommended that the grains be mixed with nuts of various kinds. In fact, there are numberless combinations that can be used in connection with flaked grains, which will not only add to their "tastiness," but which will materially increase their nourishing qualities. If one is suffering from a serious case of constipation, about the quickest and most satisfactory method of relieving the trouble is to adopt a diet of uncooked foods.

Of course, there are many other articles which can be added to an uncooked diet, which will be valuable, though the principal foods of the meal may be composed of those described. Those vegetables and salads which can be eaten raw are useful. Carrots or turnips chopped up will be found palatable. They are especially palatable if you add a dressing of oil and lemon. In fact, almost any number of the various green vegetables can be combined, and by the addition of an oil and lemon dressing, made very appetizing, and at all times very wholesome. Of course, they are wholesome and appetizing if one is really hungry, without the addition of the dressing mentioned, but the dressing adds to their tastiness, and to a certain extent, to their nourishing qualities.

Wheat Bran

The reader will have seen that the suggestions

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made heretofore are based largely upon the effects of the woody fibre of the various foods recommended in influencing peristaltic action. These "rough" foods, just as Nature has prepared them, are in far better condition to induce proper bowel activity than when they have been prepared by the extensive milling processes that are usually considered necessary. To those who have been chronic sufferers for a long time and are unable to find relief through the various foods advised, I would suggest that a quantity of wheat bran be secured and that it be mixed with the various foods prepared at home. For instance, wheat bran can be mixed with the bread you bake; it may be mixed into the puddings, pies, or in fact, with almost any article of food, and without in the least lessening their palatability. Of course, it has a better effect if it is eaten raw, though naturally it is not especially appetizing when eaten in this manner. Gems made from a mixture of equal quantities of bran and white or whole wheat flour are especially good. You can also take bran and "middlings" (a mixture of bran and flour) mixed half and half, pour a little sweetened water over the mass until it is thoroughly moistened, then press it into cakes and permit them to dry, and you will find that these will taste fairly good.

The effects of dietetic methods of remedying this trouble are very materially enhanced when the proper amount of exercise necessary to keep up the circulation of the blood throughout the entire body is taken at regular intervals.

Fasting and the Exclusive Milk Diet

In Part One various common conditions responsible for constipation were briefly touched on: impairment of the nervous forces, as in neurasthenia; atony of the intestinal muscles; dilatation of the colon; and deficiency of the intestinal juices. Such cases may fail to yield to the regular treatment or to any of the special treatments outlined. In cases of constipation due to any of these conditions the exclusive milk diet has a wonderful renovating power. On this diet the blood is purified and greatly and rapidly enriched with the elements for nourishing and building up the bodily tissues. It has been noted that the walls of the alimentary canal and particularly the intestines have been thickened and enormously strengthened, the muscles and tissues recovering in tone and functional power, and constipation which has been intractable to other methods of treatment has been quickly and per-

manently cured on this diet. The scope of this booklet does not permit a discussion of the effects of the milk diet and the manner of its application, and the reader is referred to my brochure on this subject which presents detailed instructions for the self-administration of the exclusive milk diet at home.

In cases of constipation coming under these heads, it is usually of added benefit to precede the milk diet by a fast of from two to four days, and there are cases where a fast of longer duration would be a marked advantage.

The Mineral Oil Treatment

The use of a mineral oil (in particular paraffine or white mineral oil, or albolene as it is sometimes called) as a means of aiding in regulating the bowels has been recently widely commented upon and was endorsed by Dr. W. Arbuthnot Lane, the great English surgeon. Paraffine oil cannot be digested or assimilated. It is purely a mineral oil—not a drug or a food—and possesses no irritant or stimulating effect. It simply passes through the stomach and intestines and its action is merely to lubricate the walls of the intestines. The regular use of the oil is recommended to persons in health and particularly if there is a tendency to costiveness. Dr. Lane recommends a dessertspoonful every night before retiring. As paraffine oil is not a laxative or purgative, it can not quickly excite action of the bowels as do such drugs. It simply lubricates the walls of the intestines, and, as several days may elapse before the oil takes effect, its use should therefore be continued. It will be valueless if used haphazardly. It must be taken regularly and continuously.

On the other hand, there are some physicians who question the value of mineral oil, holding that it is a foreign substance, that it does not always agree with one and sometimes causes the formation of gas. Yet great numbers of persons declare that it has offered them the solution of the problem of their constipation.

SUMMARY

It will be a convenience to the reader and obviate any possibility of confusion as to what course to pursue for the remedy of constipation, to briefly summarize the instructions presented in this brochure. Practically three regimens may be formulated hinging on the diet to be followed, and that regimen should be followed that seems most applicable to each individual.

Regimen No. 1

This comprises practically the instructions presented in Part II, and would bring about a cure in the average case of constipation. The important elements of the regimen are:

- (1) *The enema or colon flushing treatment if necessary.*
 - (2) *Emptying lower bowel at regular intervals.*
 - (3) *Thorough mastication of food.*
 - (4) *Drinking sufficient cold water daily.*
 - (5) *Avoidance of unwholesome and constipating foods.*
 - (6) *Correction of diet to include foods enumerated in Part II, (see p. 15).*
 - (7) *Exercise for general body development, to include series of movements for abdominal region illustrated and described in Part II.*
 - (8) *In general, a hygienic mode of living to improve constitutional health and vigor.*
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Regimen No. 2

With the exception of the diet, Regimen No. II is otherwise identically the same as Regimen No. I. The diet to be followed in this regimen is the uncooked diet (for instructions see Part III.) This regimen may be adopted in stubborn cases, where ordinary dietetic regulation as required by Regimen No. I fails of result.

Regimen No. 3

This consists of the exclusive milk diet. When following this diet the ordinary rules concerning exercise and general mode of life, etc., do not obtain, as in many cases it is often desirable to take the milk diet in conjunction with the rest cure, or at any rate, to avoid any special or active exercise. In some cases experience has shown that very mild exercise is an advantage. But in the matter of exercise, each case is a law unto itself. This regimen is especially applicable where digestive disorders, lack of vitality, and thinness are in evidence, and in such cases the usual dietetic regulation is difficult, because of weakness and functional disorder of the digestive system.

HEADACHES HOW CURED

NEXT to "colds," *headaches* are probably the most frequently recurring malady from which humanity suffers. A headache prevents work more, perhaps, than any other minor illness—since it seems to attack the very core and centre of our being. If we have a pain anywhere else in the body, we are sometimes able to overcome it by an effort of will, but a headache attacks the very citadel of our life and we seem to have no power to combat it.

Headache is not, in itself, a disease. It is a mere *symptom* or *indication* of an underlying cause, which is itself the diseased state that requires cure or removal.

All pain is merely symptomatic—an indication of an abnormal condition. Headache is no exception to this rule. It indicates that certain physical or psychical elements are functioning wrongly.

It would be well, perhaps, for us to begin by explaining the significance of *pain*, and later the meaning of various specific pains in various parts of the head. There are, of course, various kinds of headaches which are dependent upon varying causes, and the treatment for these must differ in each case. What these various causes are, we shall presently explain.

Pain is Nature's warning that something is wrong. Pain is not an enemy. On the contrary, it is our best friend, and, as such, should not be subdued, checked, or deadened by drugs and

HEADACHE'S—HOW CURED

sedatives. Rather the causes of the pain should be sought and removed; when this has been accomplished it will naturally disappear. Pain merely tells us that something is wrong in a certain part of the body, and when we receive this warning we should heed it and strive at once to remove the abnormal conditions which are responsible for the danger signal.

Pain may be caused in a variety of ways, though its precise origin is not always clear.

Congestion, inflammation and injury will induce pain. Excessive stimulation will also have this effect. Exercise gives us pleasure, but if too long continued will cause fatigue and ultimately pain. Pressure upon the nerves by any foreign substance or body, such as an accumulation of malassimilated material, will cause pain. There are also various psychic and emotional factors which must be taken into account in seeking the causes of this condition, and it has been suggested that the reversal of certain nervous currents will induce it.

VARIOUS CAUSES OF HEADACHES

When we come to headaches, different pains in varying parts of the head indicate that different factors or causes are at work. For example, *pain at the base of the brain*, just above the neck, may indicate hypertension, neurasthenia, meningitis, neuralgia, uremia, syphilis, some affection of the nose or middle ear, or some seriously diseased condition of the brain or vertebrae. According to the character and intensity of the pain,

CAUSES OF HEADACHES

the distinction between these various causes must be drawn.

Pain in the forehead, usually indicates constipation, or some gastric or intestinal disorder. In other words, it is usually symptomatic of a digestive disturbance of some kind. It may, however, be due to *sinus* trouble, or local congestion due to cold, catarrh, etc.

Chronic headache may be due to various *mechanical* factors, such as rise in internal pressure, growths in the brains, etc. *Acute headache*, on the contrary, is usually due to disturbances of the circulation.

Pain at the nape of the neck, radiating along the spinal column, between the shoulders, is usually due to hypertension, diseases of the spine or of the kidneys. *Pain in the frontal region of the head*, that is, the upper forehead, indicates diseased conditions of the eye, nose, or frontal sinus, neuralgia, or constipation.

“*Unilateral*” headache; that is, headache on one side only, is usually indicative of migraine, or “sick headache.”

HEADACHES DUE TO DIGESTIVE DISORDERS

The majority of headaches are doubtless due to disturbances of the digestive and eliminative functions, usually to constipation. There is a feeling that the head is “splitting.” Pain is usually experienced in the forehead and above the eyes, frequently only above one eye, though the pain may radiate well back into the head. Changes may sometimes be seen in the eye during these

headaches. They are often accompanied by lymphatic congestion, hiccup, vomiting, and changes in the pulse and respiration. The nervous irritability is increased in these cases.

When the headache is due to these causes, the method of treatment is obvious. The stomach should be cleaned and the whole digestive tract freed, so far as possible, from any fermenting and decomposing food products, the absorption of which is the chief cause of the trouble. In order to effect this cure as rapidly as possible, the patient should undertake a more or less complete *fast* for two or three days, drinking copiously of water, preferably hot, so as to wash out the stomach and flush through the digestive tract so far as possible. If cold water is craved, this may be taken instead. Hot water enemas would prove especially valuable in relieving constipation.

The free use of water and fruit-juices would also assist in relieving this condition. Many persons might be tempted to take a drug for this purpose, but the use of such remedies is to be deprecated. When a drug, such as a purgative, is introduced into the system, the latter at once reacts and pours out secretions in an attempt to dilute and expel the poison as rapidly as possible. This produces evacuation of the bowels, it is true, but the system is drained of its fluid reserve to that extent, and the dry condition which results makes the original trouble worse. It is for this reason that temporary constipation is almost invariably found to follow the use of a purgative.

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A far more rational method of treatment would be to flush out the bowels with a plentiful supply of water and by profuse water-drinking. This would have the same effect, while it would maintain and even add to the store of fluids which the body contains. This is a very rational proceeding in all cases of poisoning or auto-intoxication, since nothing tends to remove these so rapidly from the system as a plentiful supply of fresh air and pure water.

Perhaps the most rapidly effective way to relieve the unpleasant symptoms associated with headache is what is known as the emesis treatment. Drink as fast as possible, from two to six pints of hot water. Immediately thereafter, tickle the throat with two fingers until you vomit. Continue the tickling until every particle of liquid remaining in the stomach has been ejected. If one treatment does not suffice to relieve the symptoms take more hot water, and again induce vomiting. This treatment can sometimes be taken with advantage in conjunction with an enema.

A fruit diet would be found very beneficial in all cases of so-called "sick headache" or "biliousness." The diet would not only tend to cleanse the alimentary canal, but the acidity of the fruit juices would stimulate the liver and decrease the acidity of the entire system, which is present in such cases.

Many persons are afraid to eat fruits because they think that the acids they contain will add to those present in the system already. It has been proved by experiment, however, that,

while the *immediate* effect is to increase the acidity, the *ultimate* effect of acid fruits is to decrease it. In other words, these fruits act like a dose of alkali, and as hyperacidity is one of the greatest destructive influences to which the system is subjected, anything which will tend to reduce it will not only relieve headaches, but greatly benefit the general health.

MIGRAINE

Migraine is, perhaps, the most common form of headache. It usually begins as a dull ache or pain and increases in severity until the patient feels that he can hardly bear it. The pain is usually felt first of all in a spot low down on the forehead, between the eyes, just above the root of the nose. Migraine usually starts in the morning and develops steadily hour by hour, increasing in intensity all the time until it reaches its point of highest severity, when the so-called "splitting" pains develop, accompanied, it may be, by nausea, vomiting, etc. Such headaches are usually due to stomach trouble in which the liver plays an active part, and in the majority of cases there is more or less chronic indigestion. Other causes, however, such as the excessive use of alcohol, nervous or vital exhaustion, lack of sleep, overwork, worry, the use of drugs, etc., may also assist in their production.

Immediate local relief can often be obtained by applying cold water compresses over the forehead, temples and fore part of the head. Occasionally hot water will be craved, and, when this is the case, it should be applied instead. A

hot spinal pack will often greatly alleviate the pain and has been known to relieve it altogether when every other measure has failed. The back of the neck will usually be found congested, in these cases, and a gentle massage of the nerves and muscles will prove restful and refreshing. This may extend on to the shoulders and a few inches along the spine, and may be followed by a hot pack to stimulate circulation and relieve the local congestion.

The importance of fresh air cannot be too strongly insisted upon, since an adequate supply of oxygen is essential to the purification of the blood. Hence, the importance of deep breathing. This should be done slowly and rhythmically, care being taken not to hold the breath and to relax the body as far as possible.

The importance of relaxation should perhaps be emphasized. The patient should lie down on a couch or hard bed with the head fairly low and the room darkened. He should then breathe slowly and rhythmically (the eyes being closed) while consciously relaxing the whole body. This may be most effectually done as follows:

Think first of the back of the neck. It will usually be found that this is "tense," and that unconsciously you have been holding your head on your shoulders instead of allowing the pillow to hold it for you. Relax! Now travel to the right arm in thought, and relax this, even going to the fingers. Then relax the left arm, then the right leg, then the left leg, and finally the trunk of the body. When you have done all this, you will probably find that your neck is all tense again.

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You will have to begin over again and travel around your body in thought two or three times, consciously relaxing every part of it while breathing deeply, before you will be able to keep it all relaxed together. Lastly, go inside your head and endeavor to relax it by allowing the brain to "droop," as it were, while endeavoring to intensify the sensation of "blackness" so far as possible. This will usually give more or less relief to the sufferer from headache, and water compresses, gentle massage, etc., will assist in the process of cure. Drinking one or more quarts of water will often relieve the most acute symptoms within a short time.

The value of and need for fasting has before been pointed out. No solid food should be eaten until the headache has completely disappeared and for some hours thereafter, if a strong appetite does not develop. The longer you can fast the better. It would be a good plan to follow the period of fasting by a fruit diet, and if the patient were to live exclusively upon fruits, whole wheat bread and, occasionally, milk, he would probably find that there would be no recurrence of his headache; or the next one would be far less severe and last for a shorter period of time.

While exercise is not advisable during the acute stages of headache, it will prove highly beneficial at other times. Long walks will build up the system and tend to prevent the congestion which is so important a factor in headaches of this character.

Bending exercises of all kinds are especially to

NERVOUS HEADACHES

be recommended, especially those which stimulate the activity of the bowels, since the most essential factor in curing this class of headache, and also in preventing their recurrence is to keep the bowels open. Lying on the bed and raising the feet over the head, while keeping the knees straight, is one of the best of these. Another is to take a standing position and then bring up alternately the right and left knee, pressing it against the chest. The two hands should be put under the knee, for this purpose, and the knee made actually to touch the chest, if possible. Massage of the bowels, by means of the hands, fists or some mechanical appliance, is also of value. A thorough enema should be taken immediately upon the appearance of the first symptoms of the headache, and daily for some days afterward.

NERVOUS HEADACHES

Next to migraine, *neurasthenic headaches* are, possibly, the most common. There is usually a feeling of constriction about the head, in headaches of this character, as though a rubber band had been placed about the forehead, completely encircling the head. Frequently, a limited area of pain geometrical in shape is noted. The patient may say that the pain area is triangular, square, or of some other geometrical form. These patients are usually more or less chronic sufferers; their headache recurring at stated intervals, is of a highly nervous disposition.

The first and most important essential in the treatment of this variety of headache is **rest**. The

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patient should have an abundance of sleep and quiet for the mind and body, with no disturbance of the emotions. He should concentrate his attention upon the spot where the ribs divide; that is, the "solar plexus," and relax that area, which will usually be found to be under a tension.

Deep-breathing exercises, and the practice of "seeing black," so as to induce relaxation of the mind, will also prove highly beneficial.

A hot foot bath, to relieve the congestion in the head, and a hot spinal pack, will frequently be found to relieve the headache to a certain extent. As before, no solid food should be taken during the acute attack, and plentiful water drinking will prove of value. Between times, a milk diet will tend to build up the nerves and soothe them.

In treating headaches of this character, however, it should be borne in mind that no more than temporary relief can be gained by these means, and that a thorough course of mind and body building will be necessary to prevent their recurrence. Plenty of active exercise, a simple and abstemious diet, cool baths, freedom from worry and overwork, are all essential to ensure the upbuilding of the general health and the strengthening of the nervous system; upon these conditions alone depend the prevention of the return of this type of headache. The old adage, "Prevention is better than cure," is nowhere more applicable than in the case of headaches. The immediate object, however, in all headaches, when they do occur, is to relieve the pain first of

all. Treatment looking to the prevention of further headaches must wait.

HEADACHES AND RHEUMATISM

The third type of headache is the *rheumatic headache*. This is usually noticed in those well along in years; that is, towards middle age. It is more or less chronic, so much so that these patients are hardly ever free from pain. When this is acute, they often feel ill and nauseated, but there is never vomiting. Exposure, exhaustion, chill, sudden changes of temperature, etc., will often act as inciting causes in the production of headaches of this character.

These headaches usually start at the base of the neck, and not in the front of the head, as both the previous headaches frequently do. They usually spread all over the head, instead of being limited to one area, as in migraine, or to one side, or to certain spots, as in neurasthenic headaches.

Inasmuch as the primary cause of headaches of this character is obviously rheumatism, the most extensive method of cure is to relieve the rheumatism. The rheumatic condition is usually brought about by a combination of excessive meat-eating, the use of alcohol, constipation, nervous exhaustion, etc., and the cure, consequently, consists in a method of life which is free from all these factors.

The diet should be rigidly abstemious, and extremely simple in character. The subject of the cause and cure of rheumatism has been considered elsewhere in my writings.

Gastric and intestinal indigestion are also

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frequent causes of headache, doubtless through absorption into the circulation of toxic material which finds its way to the brain.

It has now been established that the means for eliminating poisons in the brain tissue are very imperfect, and that if poison is introduced, which comes into contact with a brain cell, it not only poisons that cell, but causes it to secrete, in turn, another poison equally detrimental to its own health. These headaches can usually be relieved by the use of an enema, or a good dose of olive oil, or a quart of warm water with a half teaspoonful of salt and the juice of a lemon. It has been thought that the gaseous distension of the stomach and intestines, due to indigestion, causes an irritation of the big nerves which supply the brain. However this may be, removal of the exciting cause will relieve the headache.

A little water in the bowels will be found to have a remarkable effect in such cases, and profuse water drinking will also tend to relieve the headache by removing the irritating cause.

THROBBING HEADACHES

Many cases of headache result from congestion in the head, the pain taking the form of a full, dull, heavy feeling. In such cases, there is a tendency to sleep a good deal, and the complexion assumes a deep reddish hue. The failure of the blood to return to the heart may be due, in large part, to the wearing of tight clothing, such as collars, etc., which impede the venous circulation of the blood about the head and neck. Nervous and muscular tension, excitement, strong

ANEMIC HEADACHES

emotions, etc., all tend to induce this condition, and these should, in consequence, be avoided so far as possible, during the process of cure, and whenever a return of this condition is threatened.

When the patient experiences what he calls a "throbbing headache," this is usually due to the fact that too much blood finds its way to the head and cannot return through the veins. Congestion consequently takes place with feelings of dizziness, sleepiness and frequently spots of black before the eyes, etc. Forward and downward movements of the head will, in such cases, tend to increase the congestion and consequently the pain. The object should be to remove the blood from the head as rapidly as possible, and prevent it from returning in too great quantities. If this condition has been brought about in part by excessive mental work, a certain amount of rest is absolutely essential. If an excess of emotion—worry, fear, grief, etc.—is the cause, a period of quiet and relaxation is also necessary.

Alcohol, tea and coffee are prohibited. Excessive meat-eating is also detrimental; in fact, here, as elsewhere, a simple, abstemious method of life is the prime requisite for the prevention of the headaches, while a period of rigid abstinence is required to relieve it.

ANEMIC HEADACHES

The reverse of this condition is noticed in those cases which are due to anemia and lack of nutrition. The pain is usually noticed in the front and top of the head, and alternate rest and periods of suitable exercises are required. Plenty of sleep, fresh air and deep-breathing exercises

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will also be found very helpful. An abundance of fruit should form part of the diet, since fruits contain valuable salts which the system craves and which are not supplied in the ordinary diet.

In all cases of this character regularity of life is essential. The patient should, so far as possible, rise and retire at the same hours each day. His meals should be at approximately the same time and more or less uniform in quantity. Drugs, stimulants and tonics of all kinds must be avoided, including tea and coffee. Great pains should be taken to prevent constipation and to keep the bowels open. Do not make the mistake of thinking that anemia, because it is a disease of malnutrition, requires large quantities of food for its cure. This has been the mistake commonly made in the past and has resulted in many deaths.

The tissues of the body in anemia are undernourished, it is true, but this is more often due to the inferior quality of the food, rather than to its insufficient quantity. It may also be due to the fact that, on account of a choked and blocked condition of the minor blood vessels, nutriment cannot be carried to the parts which require it. Our object therefore, should be, as a rule, not to supply more food, but to change either the quality of the food, or the condition of the body so that it can properly assimilate the food supplied it.

HEADACHES FROM EYE STRAIN

Another important factor must not be lost sight of, since it is a frequent cause of headaches.

REMEDIAL PRINCIPLES

This is *eye-strain*. Many individuals, otherwise apparently in perfect health, suffer from repeated headaches, the cause of which they cannot ascertain. It has now been shown that, in many instances, this is due to eye-strain in a more or less aggravated form. The effects of this condition are not only local but general, since by reflexion the stomach and whole sympathetic nervous system are more or less deranged in their functions, producing indigestion, nausea and vertigo.

In such cases the eye-strain must be relieved before the headaches can be alleviated. The usual way of doing this is to secure glasses which temporarily rectify the defects of vision, thus removing the immediate strain. It has been shown, however, that this method is merely palliative in its effects, and that the rational method consists in educating the eyes, so that they will look at nearby and distant objects properly; that is, without strain.

When they have been trained to do this, the sight becomes normal and the eye-strain is relieved. Consequently, the headaches dependent upon this condition would disappear. The methods of training the eyes in this manner are described in detail in my book entitled, "Strengthening the Eyes."

GENERAL REMEDIAL PRINCIPLES

The importance of relaxation of the parts about the neck and shoulders has not, perhaps, been sufficiently accentuated by those who have, in the past, written upon headaches. Proper mas-

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sage of the neck and spine, hot compresses, etc., do much to relieve this condition. Conscious relaxation will greatly assist in equalizing the circulation, and facilitate the return of the congested blood from the head, by means of the veins.

In general, it may be said that a simple, abstemious and regular life, free from undue excesses, emotions and mental and physical strain, is one calculated to ensure freedom from headaches. When, however, a headache of any sort develops, the following treatment should be undertaken, varied somewhat according to the character and intensity of the symptoms.

1. Immediately upon the appearance of a headache, a more or less rigorous fast is indicated. It is fairly safe to state that no solid food should be permitted the sufferer during the acute stages of any headache, and, in fact, until some time after the headache has completely disappeared. It is true that headaches sometimes develop as the result of omitting a meal, but when the headache appears first fasting cannot make it worse; and, even when the headache follows the omission of a meal, the quickest and most effective way to cure it is to prolong the fast, omitting several meals, since the cause of the headache, that is, the poisonous material in the bloodstream coming into contact with the delicate brain cells, is thereby removed.

2. The fast should be followed by a period of abstemious dieting; a fruit diet, liquid diet, or milk diet may be followed with advantage for one, two or three weeks. Great care should be taken to prevent overeating, bad food combina-

REMEDIAL PRINCIPLES

tions, insufficient mastication, or too much meat; also rich, greasy, heavy or spiced foods. Condiments are usually to be avoided. Tea, coffee and alcohol are prohibited during the acute stage; but if the patient has been in the habit of taking these for years, they may be permitted within reason, after the acute stage has passed. It would certainly be better, however, whenever possible, to omit them altogether.

3. Large quantities of hot water should be drunk, even to the point of acting as an emetic. In fact the emesis treatment already referred to can be taken with advantage in many cases. Cleansing the stomach in this way, and flushing the entire system are essential factors in the cure of headaches.

4. The bowels should be thoroughly moved by means of copious enemas of hot water (one teaspoonful of salt to one quart of water). These should be taken every day so long as any traces of headache or soreness are present.

5. Deep-breathing exercises are extremely beneficial if care is taken not to hold the breath, and to relax while breathing. Plenty of fresh air, day and night, is most essential.

6. Plenty of rest, relaxation and sleep are important adjuncts. Conscious relaxation, as before explained, will often assist greatly. "Seeing black" is a valuable exercise, and will tend to secure internal or brain relaxation.

7. Worry, fear and kindred thoughts and harassing emotions must be put to one side. Freedom from nervous excitement is essential. Harmony of being, secured by a successful and

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happy adjustment to oneself and to one's environment—is essential. Music is often helpful, and so is harmony of color, dress, etc.

8. The skin should be kept open by Turkish baths, hot baths, etc., but cold must be applied cautiously. Anything calculated to produce internal congestion should be avoided. Cold applications to the head will very often afford relief, as will hot foot baths. A hot towel applied to the spine will often prove a great relief, as will a hot or cold compress—whichever may be craved—applied to the back of the neck.

9. Massage, or manipulation of the neck and shoulders, will often relieve congestion, soothe the nerves, and stimulate the venous circulation.

10. If eye-strain is present, it should be relieved by means of the methods outlined in our book on "Strengthening the Eyes."

11. Exercise is not usually advisable in cases of an acute headache, though a long walk with much deep breathing will often bring quick relief. As soon as the normal condition has been restored, however, exercise will prove one of the most potent factors in preventing the recurrence of headache. Massage, osteopathy, etc., will usually prove valuable as curative agents.

12. Quiet, repose, and mental and emotional relaxation—no less than physical—are extremely essential. The health of the physical body having been attended to, the mind and emotional life should be attuned to harmony with self and environment. This will bring about an internal rest and relaxation which will prove one of the most potent factors in curing headache.

STRENGTHENING WEAK NERVES

STRENGTHENING WEAK NERVES

NERVE force is a kind of human electricity. The impulse that directs a conscious effort of any sort is "telegraphed" from the brain along the nerves guiding and controlling that particular part of the body in which activity is required. A certain amount of electricity is required to send a telegraph message and a certain amount of human electricity is essential whenever a message of any sort is conveyed by the brain to other parts of the body. Nervous energy is required, therefore, for every conscious or unconscious effort that we make and weakness of the nerves is due simply to a lack of this force.

Strength, attainment, success, depend largely upon the degree of energy we possess! This has been demonstrated to us by the lives of many of our greatest men: Roosevelt, Edison, Schwab, Lloyd George.

It is not the actual muscle which makes a man "strong" so much as the vital energy behind it. A rabbit's leg, if stimulated electrically, can be made to hold a considerable weight, so long as there is life in it; but once the vitality has gone, the muscle can readily be shredded between the fingers and contains no "strength" of its own.

This shows us that strength lies not so much in the muscular fibres as in the power of life behind them. It is the dynamic, vivifying energy which is the real source of strength in living organisms, and this in turn, depends upon the degree of your physical health, and particularly upon the state of your nervous system.

STRENGTHENING

Most people fail to realize the fact that the nerves are as essentially *physical* as any other part of the body. They are composed of certain chemical elements, and are built by the blood. They are not ethereal, immaterial substances, related somehow to spirit. On the contrary, they are as material in one sense, as the bones, muscles or any other part of the anatomy. This being the case, their health becomes largely a question of physical treatment, although, because they are the carriers of nervous impulses and, as such, influenced by mental and emotional states, all these factors must be taken into consideration in building nervous strength.

PURE BLOOD ESSENTIAL FOR NERVE HEALTH

Since the nerves are nourished by the blood, it follows not only that the blood must contain the elements necessary for this purpose, but that it must contain nothing injurious.

The degree of energy which the body possesses depends, more than anything else, upon the degree of its physiological cleanliness. If we wish to increase the energy-output of radium, the best way to insure this is to cleanse and free the radium from obstructing substances, leaving it as pure as possible. The same is true of the living organism. If the organism be choked and blocked, poisoned and obstructed, the extraordinary energy which it normally possesses cannot find expression, the nerve-centres are poisoned, or even destroyed, and lassitude and fatigue take the place of the vitality and magnetism so characteristic of good health.

WEAK NERVES

Acid is now known to be one of the most destructive of the poisons that get into the blood, destroying the brain cells, which, so far as we know, are never replaced.

There is an idea that nervous patients should eat large quantities of food, and it is doubtless true that thorough nourishment tends to quiet the nerves. It is equally true, on the other hand, that food may simply act as a sedative—quieting the nerves by deadening their activities, through the poisons generated by mal-assimilated material.

EATING AND NERVOUS ENERGY

There is no more dangerous fallacy in the world than the idea that the strength of the body is maintained solely by our daily food, and consequently that the more we eat, the more strength we have. This is by no means the case. In fact, it has been demonstrated that those who eat least, are often possessed of the greatest energy.

Of course, there is reason in all things. One can starve and impoverish the system; but, as a general rule, in our modern civilization, the majority of persons are inclined to poison themselves by overeating, rather than to weaken themselves by undereating.

For foods in excess generate poisons! If your daily food is not properly digested and assimilated, it undergoes a process of decomposition instead, and poisons are formed which are absorbed into the general circulation, poisoning and ultimately destroying the nerve-cells. One of the primary causes of brain fatigue is the presence

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of these poisons in the cells. The brain is poorly equipped to eliminate poisons, and any toxic substances brought into contact with the brain-cells cause them to secrete a substance which in turn is actually poisonous.

PHYSICAL, MENTAL AND EMOTIONAL DRAINS ON NERVE FORCE

Fatigue is due to two causes. It results either from an accumulation of chemical substances in the system, which poison the muscles and prevent their activity, or from an actual exhaustion of the nerve-centres, due to the continued and excessive outflow of nervous current from them. Nervous energy can be expended through muscular or mental effort or through emotional excitement. The emotions can cause the expenditure of an enormous amount of energy in a short time, and in fact a large per cent. of our wasted energy is expended through useless emotions. Muscular activity also uses up a certain part of our vital strength, but here, unless it is unduly prolonged, there is a beneficial reaction, since exercise increases the circulation and assists in the elimination of poisons. Mental activity, too, draws largely upon the nervous strength and it is a curious fact that it is those parts of the body and nervous system most directly connected with the processes of consciousness which become tired. Our unconscious activities, such as respiration, digestion, secretion, etc., can go on almost indefinitely without producing fatigue; but the processes of consciousness soon produce exhaustion, and a long process of training and cultivation is

necessary in order to enable us to use the conscious mind for any length of time without exhausting the nervous power.

It is primarily excessive emotion which exhausts the nerves. The nerve cells may perhaps be compared to tiny cups, which become filled with a fluidic energy during the hours of rest or sleep. Normally these are refilled as fast as their contents are drained away by the mental, muscular, and emotional activities of the day, but excessive emotion seems to have the effect of draining them so rapidly that a few seconds will completely devitalize the whole system. After an emotional shock of any kind this frequently happens, and then sleep is called for by the organism, as its natural protective device.

RESTORATIVES OF NERVOUS HEALTH

Inasmuch as fatigue and nervous exhaustion are due largely to the presence of poisons within the system, it is important to eliminate them as rapidly as possible when they are present; also to prevent their accumulation in the future. This being the case, *cleansing* methods of all kinds are of great importance. Among these we should mention *fasting*, which produces a rapid elimination of toxic substances from the system; *rational diet*, which prevents their reaccumulation; *hydrotherapeutic measures* of all kinds, which cleanse the system; *exercise*, which invigorates and upbuilds it; *proper breathing*, which purifies the blood and furnishes it with an adequate supply of life-giving oxygen, etc.

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This is an exercise for spinal flexibility, loosening up the joints of the spine and preventing any tendency toward adhesion and hardening of the cartilages. Clasping the hands behind the back, twist first far around to one side, then around to the other, continuing until slightly tired. Twist as far around to each side as possible with each movement.

Internal and External Bathing

The easiest way to eliminate poisons of any kind is to *fast* for a short period, thereby giving the eliminating organs a chance to dispose of any poisonous material which may be lodged within the body.

The various eliminating organs must be kept alive at the same time. The kidneys should be stimulated by plentiful water-drinking; the bowels at times, by enemas, and the skin by frequent baths, particularly Turkish baths, hot and cold baths, etc.

Too frequent cold bathing is probably not good in some cases of nervousness, however. Warm water has a quieting and sedative effect, and in cases of extreme nervousness and insanity is much used, nowadays, as a mean of quieting the patient and allaying restlessness and nervousness. In such cases, the patient is placed in a bath of a temperature of about 95 degrees to 98 degrees Fahrenheit and kept there from one to six hours, if necessary—the temperature of the water being carefully maintained at that point. The effect of the warm water is to relieve the excited nerves from irritation and from stimuli of any kind, so that they will, after a time, become relaxed, and the patient will sink into a quiet, restful sleep. This is known to us as the “prolonged warm bath.”

Deep Breathing

Deep breathing has a pronounced and beneficial effect upon all cases of nervous irritability. Not only does it help to purify the blood, but the

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A back-bending exercise particularly valuable for the lower part of the back. Placing the hands back of the thighs, bend backward and slide the hands as far down the legs as possible. After five or ten repetitions, vary the exercise by bending a little to one side and the other while bending backward.

deep rhythmic action of the lungs, necessitated by long, deep breathing, seems to soothe and refresh the entire system, not only directly, but indirectly.

The Hindu Yogi, who practised deep breathing of this kind, are known for their passivity and calm. It is their claim that, in addition to oxygen, there is a certain vital "essence" or "principle" in the air, termed Prana, which is taken into the body through breathing, this being the real source of our vitality.

Whatever we may think of this theory, it is certainly true that deep breathing has a tremendously stimulating and vivifying effect upon all internal organs. To begin with, the diaphragm is forced down against the lower viscera, these being squeezed and allowed to expand alternately, and receiving thereby a gentle, natural massage which is a form of passive exercise extremely beneficial to them.

Exercise

Exercise not only improves the general health, but directly stimulates the nerve-centres. Spinal exercises are particularly important. When the nerves are weak it will often be found that the spine is weak and flaccid and the vertebrae misplaced. The spine is the power house of the human electrical system, and upon it depends the proper distribution of nervous power to the other parts of the body. With the spine weak and out of alignment it is impossible, therefore, to have strong nerves. One of the most important remedies, therefore, for weak nerves is a system

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of exercises for strengthening the spine. We are illustrating in this pamphlet a number of exercises that can be taken for that purpose. Osteopathic and other treatment that stimulates and straightens the spine is also recommended. A strong spine means a strong body and superior nervous force, and a strong spine can certainly be developed through the exercise advised. Bending exercises are particularly useful for strengthening the so-called "solar plexus," the great sympathetic nervous centre lying directly behind the stomach, at the spot where the ribs divide. As its name indicates, this is the brain of the sympathetic system. Bending over and touching the floor with the fingers, while keeping the knees straight, is one useful exercise. By this means, the tissues in the immediate environment of the great sympathetic nervous centre are stimulated.

The nerves, like all other parts of the body, can only be strengthened and invigorated by constant use, and to this end all exercises are useful. In fact, scientific instructors nowadays argue that the most important function of exercise is the strengthening of the nerves. To ensure this the mind must be thrown into the exercise, the movements must be consciously directed so that the mind is actually transferred, as it were, for the time being into the parts of the body which are being exercised. Roughly speaking, the nerves are the intermediate link between mind and muscle. It is along their course that the mandates of the will are carried. Hence, the more we consciously direct the muscular energies, the stronger will the nerves become. This point

WEAK NERVES



An effective spine stretching movement, involving not only the spinal column but the spinal cord and nervous system. With the hands high above the head bend and stretch backward as illustrated. Pause, and make a second stretching impulse, then bend far forward and see if you can touch the floor with the finger-tips without bending the knees. Repeat until only slightly tired.

is now insisted upon very strongly by army instructors. Physical exercises are given only partly to strengthen the muscles. They are designed at the same time to strengthen and invigorate the nerves.

The Hindus, who have studied bodily control for many centuries, contend very strongly that a man should be master of every action of his body. They carry this to the extent of controlling the action of the heart, the digestion, the secretions, etc., which are normally unconscious and beyond our control.

Diet

When the nervous system has undergone actual physical degeneration, a diet rich in fats and easily assimilated is desirable. A *milk diet* is probably the best for this purpose. It supplies the nervous system with the fats that it needs, and furnishes all the tissues with a superior quality of nourishment, while the eliminating organs are stimulated by plenty of liquid.

In some cases, eggs have been prescribed, but it is probable that, in the majority of cases, a milk diet alone will effect the desired results in the simplest manner possible. The best way to take a milk diet is as follows:

Prepare for the diet by fasting a day or two, drink nothing but a little orange juice and plenty of water, so as to cleanse the digestive tract and prepare it for the milk diet. It must be borne in mind that if milk is mixed with solid food, trouble is sure to result! But if it be taken *alone*, it will be found vitalizing and strength-building.

WEAK NERVES



This is both a spine bending and twisting exercise. Starting from an erect position with arms outstretched, bend forward as shown in the photo, and stretch one arm down and the other up until you can touch the floor or nearly so with the lower hand. Straighten up and again bend forward, touching the floor with the other hand.

STRENGTHENING

and will increase the weight rapidly when it is below normal.

After the fast, the milk diet is begun as follows:

The first day, drink one glass of warm milk every hour. The second day, one every three-quarters of an hour. The third and succeeding days, a glass every half hour. The milk can be warm or cool as desired and should be drawn in rather than drunk.

There is but one proper way to take a milk diet or for that matter any liquid food: the method used by the suckling baby. Naturally, one is prejudiced against the use of bottle and nipple, therefore I will suggest a substitute which is just as effective, if instructions are followed.

Place your lips on the glass of milk in such a manner that you can make the opening between them very small. Press your lips vigorously on the glass and make the opening so small that a very vigorous effort is required to draw in the milk, and three or four "draws" are necessary before enough milk is accumulated in the mouth to arouse a desire to swallow.

In first learning this method of drinking milk, you should make the drawing-in exercise as vigorous as possible. You should close the lips as tightly as possible and still allow a minute quantity of milk to enter the mouth. When the milk is taken thus slowly you can increase the quantities mentioned above and need not take the milk so frequently.

One of the principal objects of taking milk or liquid food in this manner is that it is properly tasted and thoroughly mixed with the saliva be-

fore swallowing. The muscles that suck it in press on the salivary glands and cause the saliva to flow freely and thoroughly mix with the milk. It should take from three to five minutes to drink a glass of milk in this way.

After the third day, a great quantity of milk will be taken, but this will cause no distress, in the majority of cases. If, however, undue distension is found to follow, a few of the "milk meals" may be omitted, and a small quantity of lemon or orange juice may be taken to offset the fatty matter contained in the milk.

DRUGS AND ARTIFICIAL "NERVE TONICS"

It is hardly necessary to say that stimulants in all forms should be abandoned by the sufferer from weak nerves. Tea, coffee and alcohol should be eschewed. In fact, all stimulants keep the nervous system excited to a greater or lesser degree. This condition is often mistaken for "nervous strength, but really indicates useless expenditure of vital force which is frequently the cause of premature breakdown.

If people only understood the action of drugs upon the system, they would see this clearly enough. As a matter of fact, no drugs "act" upon the body or upon the nervous system at all! This may sound like a paradox, but it is true nevertheless. Why does a drug "act" upon the body, apparently, when it does not "act" upon a glass bottle? The reason is that, in one case, the bottle is inorganic or "dead," and hence does not react. It is *the reaction of the body against the drug*, not the action of the drug on the body

STRENGTHENING

which we see, whenever we introduce the drug or poison into a living organism. Whenever it is introduced into the human body, the latter seeks a way to expel it as rapidly as possible; and this reaction we call the "action" of the drug.

Some drugs are most easily expelled through the kidneys, some through the bowels, some through the skin, etc. Hence, we have the different classes of drugs—diuretics, purgatives, diaphoretics, emetics, etc., according to the reaction of the body to the drug introduced. The drug is simply expelled in the easiest way in each case. In no case does the drug act. It is acted upon.

It is the same in the case of *tonics* and *stimulants*. They do not supply strength to the body. They abstract strength from it. The temporary strength which seems to be gained is merely the stimulation into greater activity of the nervous system. And this always necessitates a reaction, inducing greater weakness in consequence.

It is a curious fact that while many drugs, such as cocaine, hasheesh, etc., leave no permanent physical traces upon the nervous mechanism (as *post mortem* examinations show), alcohol causes an actual physical degeneration of the nerves by combining with their fats. It is because of this that the drunkard is unable to control the functions of his body. His disease is not moral but physical, and the exercise of judgment or will-power does not suffice to offset the craving due to the actual physical degeneration of the nerve-centers.

HOW TO RELAX

In cases of nervousness, *conscious relaxation*

WEAK NERVES

has been found most helpful and refreshing. Lie on the back—on the floor or on a hard bed. Relax the body in so far as possible. Now, think of the back of the neck, and you will probably find that it is all tense! You are holding your head on to your body, while, as a matter of fact, it should be allowed to rest on the pillow which supports it. Relax the neck! Then go to the right arm, in thought, and relax that, even travelling to the fingers, which you will probably find unduly contracted. Then go to the left arm; then to the right leg; then to the left leg; and finally to the trunk. After you have travelled around the body in this way, in thought, you will probably find that the neck has again become contracted! Relax it, and go around the body again in the same manner, two or three times. Five minutes conscious relaxation in this way will often refresh one as much as would an hour's ordinary rest.

When exhausted or tired, do not at once assume that you need food in order to revive you. Many people do feel stimulated and revived after a hearty meal, but this is due to the rest and the change of thought rather than to the food. As a matter of fact, digestion is an exhausting process. If, at such times, you would bathe the hands and face in cool water, take a glass of cold water, and a five-minute rest in a chair, you would probably find that you were more refreshed and invigorated than you would be by eating.

SPECIAL SPINE TREATMENT

When nervousness is due to irritation of the nerves branching from the spine, because of dis-

STRENGTHENING

placement of the vertebrae, contraction of the muscles or local congestion, a hot, wet pack along the spine will often prove grateful and soothing. The towel should be dipped in boiling hot water, wrung out quickly and applied the whole length of the spine, with a dry towel over it. As soon as this becomes cool, it should be replaced by another, as the pack must be at hot as can be borne to do much good and is of little value if lukewarm. Two or three applications of this kind will be found to soothe the irritated nerves, as a rule, and will often assist in inducing a quiet and restful sleep.

Osteopathic or adjustment treatments will be found extremely helpful, and any form of massage, provided it be administered scientifically, will also allay the irritation, by removing the cause.

For permanent relief, special exercises are necessary, aided, it may be, by osteopathy and massage.

MENTAL AND EMOTIONAL INFLUENCES

In all cases of nervous disorder, the *mind* is an extremely important factor. The soothing effects of *music* are now being investigated, and it has been found that, in cases of nervous exaltation, on the one hand, and exhaustion, on the other, music has been of the greatest value, either in soothing the nervous system or in stimulating it into greater activity.

Color, also, is now known to have extremely important effects, being either sedative in action, or stimulating, as the case may be. Various

colors, representing as they do, different rates of vibration have important effects on the nervous system. This is a subject which has only lately been studied, but in its importance is indicated by the fact that cases of neurasthenia and insanity are now treated by various colored lights, either artificially created or by daylight passing through colored glasses.

A healthy, busy, optimistic attitude will insure a more rapid return to health than almost anything else. Mental depression affects both mind and body, preventing the healthful activities of the body, impeding digestion, circulation, etc. In short, it slows down all the processes of life instead of stimulating them. Cheer is to digestion what a breeze is to a fire; and laughter will cure more physical ills than will all the "blue pills" in the world!

Change of occupation is recreation! We should have a variety of interests in life, and particularly one *hobby* in which we are interested above all else, and to which we fly when we are tired of all other interests and occupations.

Nothing keeps the mind and body so young as this. The mind will not "wear out." Even if it did, it would be better for it to wear out than to rust out! Healthful amusements—those that occupy all the mind, all the emotions, all the bodily activities will tend to keep one young, active and optimistic and will strengthen the nerves and muscles more than anything else.

Above all, *keep happy!* Find out what you want in life and then seek to attain it. Many of us wander through life with no clear idea as to

what we want to accomplish; with no definite goal in view. This being the case, it is only natural that we do not attain it!

Before the sculptor can mold his clay into a masterpiece, he must know definitely what he wishes to accomplish, and have that in mind. It would be useless for him to go ahead modelling with no clear idea as to what the statue would ultimately turn out to be.

It is the same with life. We must have a definite end in view. We must think constructively about it, persistently and positively. If we do this we shall surely obtain that which we set out to accomplish.

The very great importance of happiness must never be lost sight of. Happiness stimulates all the activities of the system, increasing their vital capacity, their functioning power and actually seeming to add life and health to the body. Depression, on the other hand, lowers the tone of the body, and prevents the proper performance of any of the vital activities.

We may, therefore, sum up the treatment for weak nerves as follows:

TEN COMMANDMENTS FOR STRENGTHENING THE NERVOUS SYSTEM

First, weakness and lassitude are usually due to the fact that a certain amount of poison has accumulated in the system, depressing the nerves and vital energies, preventing muscular activity and inducing laziness. This poison must be eliminated, and to this end, fasting, or an extremely abstemious diet, is essential. The less food the better for a few days, until these poisons are

disposed of. A fruit diet, milk diet, or liquid diet, is often useful, in that such diets maintain the system in a state of vigor, while at the same time allowing rapid elimination of toxic substances.

Second, a certain amount of fairly vigorous exercise for the spine should be taken. The spine and the brain are the reservoirs of human energy; the storage battery, and the spine is materially strengthened and stimulated by various twisting, turning and other movements. The activity of all the vital organs is thus materially increased and a far greater amount of energy is stored away and used.

Third, when on the ordinary diet (not milk) plenty of water should be drunk, both hot and cold. This will tend to cleanse the system and wash out the toxic substance, which it contains.

Fourth, the bowels should be kept open by the occasional use of enemas, if needed, followed by a laxative diet.

Fifth, deep breathing exercises should be taken every day and a plentiful supply of fresh air should be admitted at all times—both day and night. Whenever taking deep-breathing exercises, completely empty the lungs, making two or three efforts to get out more air. This will crease the value of the breathing.

Sixth, milk is usually a valuable food in cases of nervous exhaustion or depletion. A milk diet may be advised in many cases of this character.

Seventh, hot baths will usually be found soothing to the tired nerves. Cold baths are not advisable, as a rule, in cases of this character.

Eighth, plenty of rest and sleep are essential. The patient might, with advantage, lie down for a few minutes once or twice during the course of the day, and consciously relax, or take a short nap if this is needed or craved. Adequate rest and sleep are an extremely important part of the cure.

Ninth, the mental factor is most important. Keep cheery and contented in mind. Try to look on the bright side of things, and be an optimist! Remember that mental depression is your worst enemy and must be fought tooth and nail!

Tenth, air baths are especially valuable. Exercise nude whenever possible. If your recuperative powers are good, wet the hands in cool water and wet the entire body by rubbing the wet palms over it and then allow it to dry without using a towel.

We all of us possess far greater reservoirs of energy than we know. William James called attention to the fact that we seem to be possessed of a hidden reserve of energy upon which we can draw at times when the occasion demands. This "reserve energy" is like the "second wind" which a runner gets at a certain stage in a long race. At such times, he seems to be enabled to start all over again. It is not generally known that a baby, even before birth, possesses as many brain cells as it ever has! No new cells are created. They are merely brought into activity, layer on layer, as we progress through life and learn to utilize them. In much the same way, the reserve energies of the body lie dormant, and we have only to learn to draw upon them, to become energized to almost any degree.

FLAT FOOT

FLAT FOOT

Its Prevention and Cure

THE large number of rejections for military service on account of "flat foot" has called the attention of the medical authorities to the alarming prevalence of this defect among the civilian population of this country. Many thousands of men, otherwise in good health and suitable material for soldiers, have been rejected for this reason alone, and if this is the case with our young men, we may assume that the condition is even more prevalent among the mass of the population.

"Flat foot" simply means that the arch of the foot, which is normally curved or bow-shaped, has fallen somewhat, so as to render the inner edge of the sole more or less flat. It is an extremely painful condition, and besides being a bar to military service, is a serious handicap to anyone who suffers from it.

The structure of the foot is highly complicated. There are a number of small bones which articulate one with another and are held in place by ligaments and the muscular covering. When the ligaments are strong and in a healthy condition, they hold up the arch of the foot. When, on the other hand, they become relaxed through constitutional weakness, improper footgear, lack of exercise, wrong methods of standing and walking, excessive weight of the body, etc., they can no longer hold the bones in place. They become like pieces of elastic, which have been stretched so long that they have lost their elasticity, and no longer contract or function as they

FLAT FOOT



Figure 1 and 2. Illustrating different degrees of flat foot. Figure 1 shows the arch nearly broken down. Figure 2 shows the arch completely collapsed, as in a serious case.

should. When this state has been reached, the arch begins to fall, and, if it is not checked, flat foot ultimately results. The condition takes some time to develop, being usually noted during the mature or later years of life. When it appears early in life it is generally the result of anatomical conformations of an unusual nature.

When flat foot occurs as a result of the last named factor it is often difficult to cure, and may require a surgical operation for its correction; but when it is an acquired condition it can almost invariably be cured by proper exercise and footgear, or at least greatly benefited, and if suitable measures are taken to prevent its recurrence it will stay cured.

The cure cannot, naturally, be effected overnight, but Colonel Robert Jones, a famous English orthopedic surgeon, in his "Notes on Military Orthopedics," goes so far as to say that: "A bad case of acute flat foot should be fit for light duty in three weeks, and for full duty, with the heels of his boots raised on the inner side, in six weeks or two months."

Even if it takes much longer than this, however, so much benefit will be found to follow the

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cure of flat foot, not only locally but generally (since many reflex effects have been traced to it), that it is well worth expending some thought and effort in attaining this end.

THE STANDING POSITIONS THAT PRESERVE AND BREAKDOWN THE ARCHES

The standing position is a factor of great importance in the cure and prevention of flat foot. The average man stands with the heels more or less together and the toes pointing out and it is unfortunate, to say the least, that nearly all our physical directors—even those in the army and navy—have invariably instructed their pupils to stand with the feet at an angle of forty-five degrees. This position throws the weight of the body upon the ligaments and the inner side of the foot, and is one of the surest methods known of inducing flat foot.

The feet, in standing, should be placed *parallel* with one another, about six inches apart. This position affords a more solid base of support for the body than the triangle formed when the feet are placed at an angle, and if the reader will try the experiment of standing in this manner, he will find that the weight of the body is thereby automatically thrown upon the *outer edges* of the feet, thus raising the arches from the ground.

When the feet are parallel, moreover, it is possible, by slight changes in position, to throw the weight of the body successively on the bones, ligaments and muscles, and thus prevent any one of them from being strained. If one stands with the entire supporting surface upon the ground,



Figure 3. A cast showing the conformation of a normal foot with a healthy arch.

and the feet square, the ligaments are doing most of the work. If one stands on the outer borders of the feet, the bones are bearing the weight.

Standing with the heels slightly raised or with the knees slightly bent, calls the muscles into play, and relieves the ligaments and bones. By changing from one of these positions to another one can stand for long periods of time without becoming tired.

With normal feet associated with the running and other strenuous training of military life, almost any position of these members can be assumed without injury; but when it is a question of curing flat foot the matter is one of extreme importance and the patient should never allow himself, even for a few moments, to stand in any position other than the correct one. To do so would be to revert to bad habits, strain the ligaments which are gradually being pulled into place and undo the good work which was being accomplished. One must be ever watchful, therefore, on this score.



Figure 4. Cast showing foot conformation in a severe case of flat foot or broken down arch.

HOW TO CURE IT

CORRECT AND INCORRECT WALKING

What has just been said regarding the proper standing position applies with equal emphasis to *walking*. It has long

been known that what was called the "weak walk" was one in which the toes were turned at an angle, while the so-called "strong walk" was one in which the feet were placed almost parallel to one another, in a direct line, pointing forward.

But the reason for this was not at the time understood, and it was only later that it was discovered that the so-called "weak walk" was a fruitful cause of flat foot. If the patient walks with the foot turned out at an angle, the weight of the body is thrown on the inner side of the foot, thus depressing the arch. If, on the con-

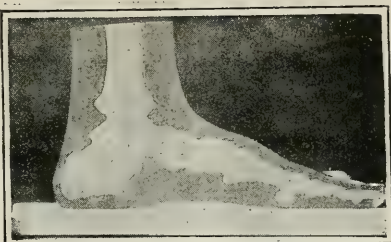


Figure 5. Illustrating the bone structure and adjustment of the normal arch.

trary, the feet are held parallel with one another, the weight of the body is thrown, with each step, on the outer side of the foot, and the arch is held high, instead of being forced towards the ground each time,



Figure 6. Showing the misplacement of the small bones of the feet as a result of weakened ligaments and continued unnatural strain through improper walking and standing.

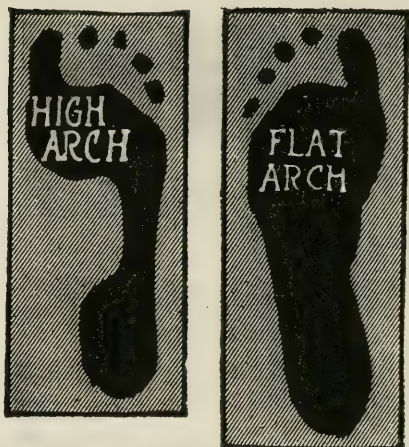


Figure 7. Showing the relative floor impressions in the case of a normal foot and that with a fallen arch. In the normal foot only the outer edge of the foot comes in contact with the ground. The arch is on the inner edge of the foot.

by the weight of the body.

In correct walking the toes point *straight ahead*. The weight is placed on one foot, while the other spurns the ground and is carried forward to its new position. Some authorities advocate placing the ball of the foot on the ground slightly before striking it with the

heel; that is, the ball of the foot should hit the ground first. This method of walking is, we believe, of French origin. It is certainly not followed by the majority of persons, and some practice would be required before one would be able to walk in this way for any length of time with comfort.

It is practically impossible to walk in this manner with high heels; it can only be done with low heels, or with bare feet. It will be found a restful method of walking after the feet have become tired, from standing and walking for considerable periods of time. It is safe to say, however, that the ordinary method of allowing the heel of the foot to strike the ground first is quite permissible, even in cases of flat foot, provided the

weight of the body be thrown upon the outer edges, and the body be held at the proper angle, while the weight is being thrown from one foot to the other.

In walking, there should be little bending of the knee. The swing of the leg should be from the hip, and the movement of the leg should be by bending the ankles and toes.

SHOES AND STOCKINGS

If you wear down the heels of your shoes on the inner side, you may be sure that you have a tendency to flat foot, and if such is the case, the heels should be not only straightened, but built-up on the inner sides, so that the inner half is higher than the outer. This tends to throw the weight of the body on the outer half of the foot, and is extremely useful as a mechanical means of rectifying the faulty distribution of the weight of the body. But it must be borne in mind that this, like all other similar measures, is merely palliative in its effects, and not actually curative. Cure can come from the strengthening and invigoration of the muscles and ligaments in the foot, and particularly those on the inner side, which have been strained and stretched unduly by long standing and walking in an improper way. No mere "support" will do this.

In all cases of flat foot, the shoe should be



Figure 8. Showing the position of the foot and distribution of weight in a shoe built upon a common-sense last.

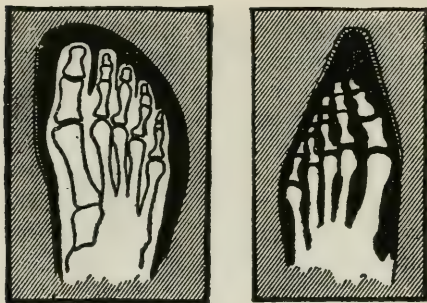


Figure 9. Illustrating the comparative position and spread of the toes in a common-sense shoe, and in one with a pointed toe. Note the deforming effect upon the toes in a pointed-toe shoe.

soft and flexible so as to permit the foot to move freely. The shank particularly, that is, that part of the sole of the shoe which lies midway between the heel and the sole must be pliable and easily bent,

so as to “give” with every movement of the foot.

The shoe should also be large and comfortable, so as to allow an ample spread of the toes. Pointed shoes keep the foot in a cramped condition, and prevent it from assuming that position on the ground which maintains the proper balance of the body most effectively. The points of support of the foot are the heel and the first and fifth metatarsal bones; therefore, the whole *width* of the foot should be used, and the great toe should have freedom of action, with ample room to spread. If this is prevented by a too pointed or narrow shoe, the weight of the body is misplaced and presses unduly upon the arch.

The heel of the shoe should not be much higher than the sole—about five-eighths of an inch at the most. When the arch of the foot is raised, the foot is shortened and rendered prettier, but it is not the high heel but the arching of the foot that gives this appearance, and if the arch is destroyed by the high heel, the end sought will not be gained.

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High heels have a tendency to throw the weight of the body forward, onto the ball of the foot, and strain the ligaments and muscles all the way up the leg, even affecting the internal organs. It is now known that, in the case of women, particularly, many internal troubles originate in the improper carriage of the body, resulting from excessively high heels. The strain resulting from the abnormal position of the body is extremely detrimental to its normal health and functioning. For reasons already explained the heel should be slightly higher on the inner edge than on the outer. Small heels afford an inadequate base of support, and deprive the body of the solid foundation it should have.

The *socks*, or *stockings*, should allow ample room for the spread of the toes. It is astonishing to what an extent stockings or socks can compress the feet and prevent their normal spread. Care should be taken, therefore, particularly during the early stages of treatment, to see that the socks, or stockings, are loose, without, however, being so large as to wrinkle and pinch the feet.

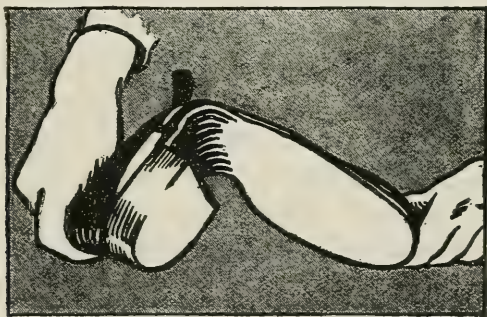


Figure 10. A shoe with a flexible shank is always preferable, and especially for those suffering from any degree of foot weakness.



Figure 11. Showing the position of the feet in correct standing. The feet are parallel, or in other words, "toeing straight ahead" and three or four inches apart.

A TEMPORARY ARCH SUPPORT

As before stated, artificial methods of maintaining the arch of the foot are useless, as methods of permanent cure. As a rule no such aids are needed, but at the very beginning of the treatment, if the case be acute and pronounced; that is, if the arch be greatly fallen and it is painful to stand or walk, some support may be necessary. In that case the following method is recommended. Obtain a roll of zinc-oxide adhesive plaster one and one-half inches wide by five yards long from the drug store, divest the foot of shoes and stockings, place it in the position known as "pigeon-toed," and apply the plaster as follows:

HOW TO CURE IT



Figure 12. Showing the usual and incorrect method of standing involving a strain upon the arch along the inner edges of the feet.

The first strap starts over the outer ankle bone, passes down the outside of the foot, under the foot, up over the inner ankle bone and up the inner side of the leg.

The second strap starts over this one, but one inch further front, so that it overlaps the first strap by a half-inch. It then passes down the outer edge of the foot under the arch, up over the instep, and is then wound spirally around the leg.

A third narrow strap is placed around the leg circularly, just above the ankle, for the purpose of fixing more firmly the first two.

Every fourth night the straps should be removed, the leg bathed in salt water, well dried and well rubbed with alcohol. The straps should

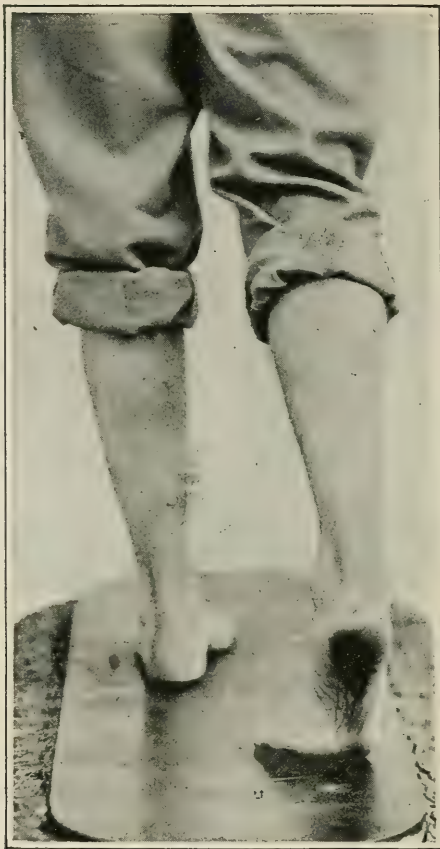


Figure 13. Showing the correct method of walking, "toeing straight ahead." Although the foot is placed with toes straight forward, yet on raising with the weight distributed on the balls of the foot, the heel swings slightly outward, as illustrated; that is to say, seemingly toeing a bit inward when rising on the toes.

be dispensed with for a day and then fresh straps should be applied.

At each successive application the straps should be pulled up somewhat tighter than before, thereby inverting the foot more and hence lifting up



Figure 14. Toeing out is an incorrect, awkward, and distance-losing method of walking. Through placing an abnormal strain upon the muscles and ligaments of the foot, it is conducive to the weakening and breaking-down of the arch.

the arch. When there is much hair upon the leg, it is well to shave it off. This will insure less discomfort when removing the straps.

The straps should be discarded completely as soon as possible, not only because they interfere to a certain extent with the circulation, but to prevent the feet and ankles from growing to depend upon them.

THE CURE OF FLAT FOOT

Massage of the inner sides of the feet will be found restful and will not only strengthen these parts but will soothe the nerves.

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Figure 15. The combined simplest and most perfect exercise for overcoming flat foot. Bend the ankles inward, raising the inner edges of the feet and shifting the weight to the outer edges. Do this dozens of times at various periods during the day. It will relieve the strain of long standing.

Frequent *bathing* in cold water will also tone up the feet.

If the feet become unduly tired from standing and walking, a foot-bath of salt water, or of water and cider vinegar, will be found restful and refreshing, and will serve to remove the ache and pain from the feet—often for days afterwards.

The most essential part of the treatment, however, consists in specific *exercises* intended to strengthen the weakened muscles and ligaments.

One of the most essential exercises for curing flat foot, is walking always on the *outsides* of the feet, and to insure this over-accentuation of the position of the feet is often necessary. A very good exercise is to walk up and down the room five or ten minutes a day, morning and evening, on the extreme outer edges of the feet, making oneself as bow-legged as possible for the purpose, and keeping the ball of the foot and the inner side of the heel off the ground altogether. Stop when you become fatigued, rest the foot, then repeat the exercise two or three times.



Figure 16. Another simple but effective exercise for strengthening the feet. Be sure to toe straight forward, or even toe inwards, when rising on the toes in this manner. Raise the heels as high as possible. Be careful to avoid strain and pain in undertaking this. In a severe case, support only part of the weight on the feet when doing this exercise.

A very valuable though simple exercise is rising upon the toes from a standing position as many times as possible, without causing undue fatigue. In this process of rising, effort should be made to support the weight of the foot on the outer edge—that is, that part of the foot near the little toe; and when the heel strikes the ground, care should be taken not to allow the weight to fall over onto its inner side as this would undo the good that has been done. As soon as the foot begins to show signs of fatigue, the exercises should be stopped, and the foot allowed to rest for a short time.

The following exercise is especially recommended:

Stand with the feet parallel with one another, in the ordinary standing position, then bend them upward from the ankles, lifting the toes as high as possible off the ground. In doing this throw

FLAT FOOT

the weight of the body as much as possible on the outer edges of the feet and in returning to position take care not to allow the weight to sag onto the inner edges. This will tend to strengthen the ligaments on the outer edges, which is most

important in all cases of flat feet.

The following exercise is prescribed for strengthening the feet throughout all its parts. It consists of three parts.

First, stand on one foot and raise the other until the part of the leg from the hip to the knee is in a position at right angles to the body; while the rest hangs limply down-




Figure 17. An exercise for both resting and strengthening the feet in a case of flat foot or foot strain. Toeing straight forward, first raise the knee high, then with the toes stretched downward, step forward allowing the toe or ball of the foot to reach the floor before the heel. Continue to walk about the room in this manner. This exercise is recommended by Dr. John Joseph Nutt, of New York.



Figure 18. Manipulative treatment for flat foot. Any exercise or manipulation which tends to bring the toes inward and downward as illustrated is beneficial. Massage movements for the feet should always turn the toes inward and downward—never outward.

ward. In doing this, the back should be flattened and the weight of the body properly placed on the supporting foot. By this means, even the smallest muscles of the supporting foot are called into use, while those of the raised one are completely relaxed. (The chest should be held high and the chin well back, and deep-breathing exercises might be taken throughout these exercises.)

In the second position, the thigh is slightly lowered and the foot extended with toes pointing



Figure 19. Manipulative treatment applied by an operator, showing an ideal movement for relieving flat foot and strain. Massage in this position is advantageous.

downward, and slightly inward and forward. The knee is straightened and the leg made rigid.

In the third stage, the body is raised on tiptoe by the foot remaining on the floor, care being taken that the waist (instep) of the foot turns outward and that the arch is raised. The body must be held erect. The body is now allowed to fall forward onto the toes of the other foot, the receding foot and leg being held rigid until the toes reach the ground.

This exercise may be practised three or four minutes, several times a day, up and down the floor of the room, and should be taken either barefooted, or with extremely flexible low-heeled shoes. Care should be taken not to exhaust the feet, or cause undue fatigue. Exercises should be taken until *slight* fatigue is felt, but at that point should be discontinued. It will usually be found that it is possible to continue the exercises longer and longer, as the strength of the feet increases.

After these exercises, it is well to bathe the feet

HOW TO CURE IT



Figure 20. Another manipulative treatment of great benefit. The toes should be turned in as illustrated, by the operator, placing the ligaments and muscles on stretch, but never to the point of causing sharp pain.

in hot and then in cold water, and rub them thoroughly until dry.

Whenever walking is undertaken in bare feet, or in shoes not properly provided with a braced heel, great care should be taken not to allow the weight of the foot to fall upon the inner edge, even for a moment. *A few* steps wrongly taken, during the early stages of the training, and until the normal strength and elasticity of the inner ligaments are restored, may undo the work of several days. In other words, conscious guidance must be exercised in walking and standing, until the foot begins to assume a normal position of its own accord, and then walking with the feet in this position will become unconscious or automatic.

As prevention is better than cure the growing child should be taught to stand and walk properly, so that a correct carriage of the body will be maintained throughout life, unconsciously and without effort, thus preventing the development of any tendency to flat foot.

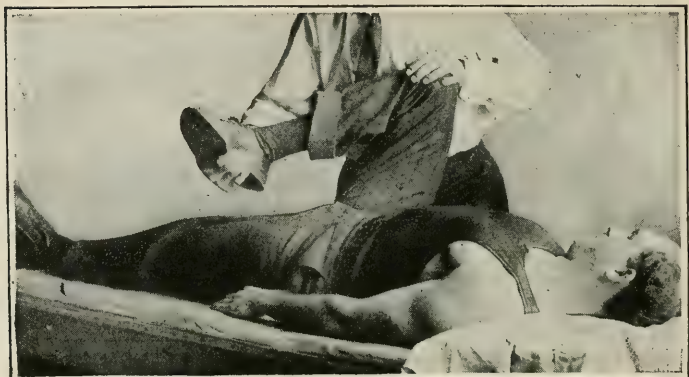


Figure 21. A manipulative treatment for strengthening the arch of the foot and the ankle as well. Grasping the knee with one hand and the foot with the other, the foot is rotated in a circle, with the emphasis upon the inward bending of the foot. There should be no strain or pain. The patient's own efforts in bending or doubling the toes downward would be of assistance.

Tall, slender children will usually be found to be more subject to flat foot than the opposite type, though it may be found in all types. If any tendency to flat foot develops, it should be taken in hand at once, and vigorous treatment instituted, as to methods of standing and walking, suitable exercises, etc., while proper shoes must be provided to assist in the cure of the defect. The idea that children will naturally "outgrow" habits of this character is erroneous. Not only are they not outgrown in many cases, but they sometimes become more accentuated with age.

THE SIGNS OF FLAT FOOT

The *symptoms* of flat foot are as follows:

The patient begins to feel a discomfort or fatigue and strain about the inner side of the foot and ankle. Sometimes, after long standing, there is a dull ache at the top of the leg, or pain

HOW TO CURE IT

at the knee or hip, or, after overtaxation, a sharp pain, radiating from the point of weakness.

After a time the patient has to ride where he once walked and sit where formerly standing caused no discomfort. He cannot run. His feet have lost their spring and are no longer a lever. Very often the heel is painful and sensitive at the centre, and the shoes hurt. Coldness and numbness caused by improper circulation are common. Acute pain is usually felt only when the foot is in use, and ceases when at rest.

As the arch becomes more and more fallen, however, that is, as flattening becomes more pronounced, the range of motion becomes more and more restricted and the muscles stiffen, making walking on a hard pavement difficult, and every step extremely painful. In walking over cobblestones, or over uneven or rugged ground, the pains in the feet often become very pronounced. In the morning, after rising, the sufferer is sometimes unable to walk, staggering and limping for several minutes. This is explained by the fact that when the foot is at rest, there is a partial relocation of the displaced bones, which must again be forced out of position on walking. Later the patient may experience pain in the feet and legs even when at rest in bed.

In examining a case of weak or painful flat foot, the following points should be noted:

The general condition of the patient should be ascertained; the shoes (their shape, how they are worn, etc.); the position of the feet in standing and walking, both with shoes on and with the naked foot; the range of motion, whether limited

or not; the strength of muscles; whether there is tenderness and where; whether the foot is flabby or rigid; whether there is rolling of the foot on its inner side; and whether there is shortness of the tendon at the rear of the heel. When possible, impressions of the feet should be taken on smoked paper. If this impression shows that only the heel and ball of the foot touch the ground, when the whole weight of the body is allowed to rest on the foot, the case is not a serious one. If, on the contrary, the whole of the arch of the foot is found to leave its impression on the smoked surface, flat foot to a pronounced degree is present.

Flat foot is undoubtedly becoming more and more common in civilized communities, as the feet are allowed to become weakened, owing to lack of exercise, improper methods of standing and walking, wrong boots and shoes, etc. The effects of the disorder are manifold. Its prevalence not only constitutes a serious military problem but threatens the health of the nation. If you are one of the sufferers, begin treatment at once. Do not delay and do not despair.

The vast majority of cases if treated promptly and rationally, can be cured with relative rapidity and ease.

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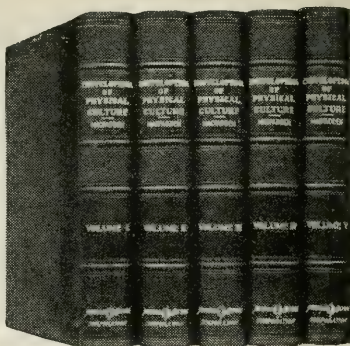
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