HERALD OF health

THE INFLUENCE OF HEREDITY

FEBRUARY 1972

The Influence of Heredity

by HAROLD SHRYOCK, M.D.

There are many factors that determine the course of events in a person's life. Some lives are outstandingly successful; others are discounted as failures. Some people who appear to have had a good start in life fail to take advantage of their opportunities, and so accomplish less than they were capable of doing. Others with a determination and will to rise above their handicaps accomplish greater things than those who were more favoured.

It is significant that most of those who underscore heredity as a determining factor in their lives use it as an excuse for their shortcomings. They are saying in effect, "The reason I am not accomplishing more in life is that I am handicapped by an unfortunate heredity." The other group—those with significant accomplishments—tend to minimize the importance of heredity so that they can take credit for their success.

A person may inherit a good physique, a good intellect, and abundant vitality. If he uses these assets advisedly he can accomplish great things in life, but the mere fact that he has inherited good qualifications does not guarantee that he will use them advantageously. He may allow his aptitudes to go undeveloped, and thus accomplish less than the person with meagre assets of inheritance who uses what qualifications he has to the best advantage. The individual has no control over the qualifications he inherits, but as a human being endowed by the Creator with the power of choice he can determine what use he makes of his attributes.

Longevity

I am interested in the duration of human life. Barring acute illness or accident, the members of some families live longer than the members of other families. Is a person's life expectancy determined by heredity? If not, what is it that gives some people the advantage of longer lives?

As is true of many considerations that relate to human well-being, a person's prospect of living to a ripe old age depends partly on heredity and partly on his way of life. Some people are born with strong bodies and abundant vitality. Others from the time of conception have a limited endowment of physical stamina. We expect that a child born to healthy parents will be healthy, but we also recognize that certain tendencies to disease are transmitted from one generation to the next.

A person's endowment of vitality is something like a credit balance at the bank. It can be conserved, and by judicious use it will last for many years. Also it can be squandered by overindulgence and thus be used up prematurely.

Statistical studies indicate that an average woman has a three-year advantage in life expectancy over an average man. This outcome depends on hereditary factors, for sex is determined at the time of conception.

Certain environmental factors probably have an even greater determining influence on the length of life than hereditary factors have. Statistics indicate that a married person has a five-year advantage over an unmarried person. Rural living as contrasted with city living also carries a five-year advantage. Living under stress as in the case of a business executive has a significant influence in shortening life. Failure to maintain physical fitness carries a high penalty. Being as much as twenty-five per cent overweight carries a four-year disadvantage. Cigarette smoking at the rate of twenty a

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Just briefly...

How many times it must be said that happiness is elusive when we seek it as a goal? The pursuit of it is part of its realization. It is not like reaching a plateau where, after much toil and struggle, we cry, "Happiness at last!" Indeed, many find life's greatest joy in the struggle itself. Carlyle sagely said, "Blessed is he who has found his work." The athlete can tell you that the fun of a race is not wholly in winning the award but in the preparation for and the running of the race itself.

Often on reaching some coveted attainment we find our greatest continuing satisfaction in recalling the inception of our project, the solution of its problems, the overcoming of its obstacles, the endless rehearsals of trial runs, and the stimulus of competition. We look back and write in our diaries, "Happy, happy days. Our contentment and bliss are by—products of our total involvement along the way to our objectives.

Then again, happiness occasionally breaks upon as unannounced like a spring day. In his deeply perceptive book *Reflections*, Harold E. Kohn writes: "One of life's strangest paradoxes is that many of our most coveted goals are reached by not striving for them, but by aiming at something else altogether."

—HARRY M. TIPPSETT, M.A., Litt.D.

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VIEWPOINT

HAVE A HEART FOR YOUR HEART

The advice of Pythagoras, "Eat not thy heart," is as fitting now as it was 2,500 years ago. More and more people are dying of heart attack today than ever before. In developed countries heart disease is the No. 1 killer. Cardiovascular disease in the United States accounts for over fifty-three per cent of all deaths. Over forty years ago Britain's heart toll was one out of every eight deaths. Today the ratio is one to three. In Australia fifty-six per cent of all deaths stem from heart disease. The position in Japan, Germany, Denmark and other industrially advanced countries is no better. Developing countries, too, are increasingly facing the problem of heart care. In India, for example, the most common type of heart trouble is the coronary disease which is responsible for thirty per cent of all heart ailments and eighty per cent of all sudden deaths.

Obviously heart disease is no more a rare disease. In fact, the enormous increase in ease and luxury has brought about a corresponding increase in cardiovascular illness. No wonder some have described heart ailment as the disease of affluence. The more ease and comfort and the more labour-saving devices we have, the more coronaries we suffer.

Yet, the heart is meant for a life-time of service. According to Dr. Paul Dudley White, the world-renowned heart specialist, "Heart disease before eighty is our fault—not God's will."

The heart is one of the most amazing organs of the body. Only the size of a fist, it weighs less than one pound and performs an incredible task with an efficiency unequalled by any invention of man. In the average life span, the human heart beats 2,600 million times. In a day it pushes 6,000 litres of blood, weighing nearly six tons, through more than 60,000 miles of circulatory system. No mechanical pump could handle such a task with such efficiency. Nothing—be it a nylon tube, stainless steel, electronic pacemaker, or another person's heart—can really replace this marvellous organ.

How important, then, it is to take care of the heart—take care in such a way that it will give efficient service for more than three score years and ten. Health authorities suggest three factors that could help in keeping the heart in good health.

First of all, eat carefully. Fat, especially animal fat, and refined foods affect the heart adversely. Overeating comes in the same category. Someone has well said that the longer the waistline the shorter the lifeline. With an increase in living standards comes the tendency to overeat. A fat person is a first-class candidate for heart attack. It is said that each pound of fat requires an extra mile of blood vessels and capillaries for the heart to pump blood through. Since an extra mile of blood vessels just doesn't grow, the strain on the heart increases to that extent. The heart beats faster and the increased strain affects the normal function of the heart.

The second ingredient to good heart care is to exercise adequately. Exercise does not necessarily prevent a heart attack, but it has been noted that men who get regular exercise survive a heart attack and quickly build back the circulation. To quote again Dr. White: "Exercise of the muscles is as essential to the health of man as is eating, sleeping, and the use of the brain. A helpful result of maintaining an exercise programme is psychological. . . . It would seem that in some way not yet adequately investigated, a vigorous muscular metabolism acts bio-chemically to retard the 'rust' on the inner walls of the arteries." A good muscular tone is thus a tonic to the heart.

The third important tip for heart care is to shun smoking. Smoking has been shown, beyond reasonable doubt, "to aggravate and accelerate heart disease through overstimulation of sympathetic nervous system." Nicotine is no friend of the heart. In fact it contributes to tightening of the arteries, elevation of blood pressure, and increase of heart rate. Heavy smokers are found to suffer heart attacks two to four times more often than are nonsmokers. Twenty cigarettes a day, it is said, increases the risk of fatal heart attack to five times that experienced by a non-smoker.

And so we ask: Why should anyone wish to eat his own heart by improper diet, smoking, and lack of exercise? It pays to have a heart for the heart.

—J.M.F.

CLIPPINGS AND COMMENTS

A Taiwanese has developed a kind of instant rice which can be reconstituted with either hot or cold water, the Central News Agency of Taiwan reported recently.

Mr. Kao Hung-ying, a 39-year-old agricultural chemist at the Union Industrial Research Institute, says his process consists of cooking the rice first and then having it dehydrated. Any kind of rice can be used as raw material.

It takes about five minutes to reconstitute the processed rice with boiling water, but twenty to thirty minutes if cold water is used.

*

A new vegetable protein concentrate from cottonseed, "good for diet and effective for diabetic patients," is to be marketed in India soon.

The vegetable protein concentrate will have wide use in confectionary products, for wheat flour fortification and in pharmaceutical preparations.

The product, marketed under the name "Stamina," is good for the vegetarian diet and effective for diabetic patients.

*

An Israeli firm is now using a new concept in sources of edible protein—a special processed soy base—to produce vegetarian shnitzels, known on the market as SVP (structured vegetable protein).

The soy base may be flavoured to imitate many kinds of meat, including chicken, beef and ham, and is indistinguishable from the real product. It has the same protein value as meat but is much more economical, and is also of course, fatless.

HOW NUTRITION AFFECTS YOU

Food, nutrition, and health are inseparable. They cannot be divorced from one another without affecting one's optimal well-being. With approximately 300 million children of the world suffering from varying degrees of malnutrition the problem of nutrition becomes of major public interest.

Malnutrition means an individual lacks one or more nutrients to the extent that retardation in physical development occurs or specific symptoms and conditions appear, as rickets, anæmia, vitamin deficiencies, etc. Malnutrition may also mean an excess of one or more nutrients, resulting in impairment of health. It is of increasing global concern because it appears in both affluent and poverty conditions. We have undernutrition on the one hand and overnutrition on the other.

Undernutrition appears to be a serious problem for two thirds of the children of the world. The condition results from an inadequate intake of food or of one or more essential nutrients. Reports indicate that malnutrition in early life is directly or indirectly responsible for more deaths among children than from all other causes combined.

The effect of nutritional deficiencies on brain development, on the central nervous system, on learning, and on behaviour is of vital importance. Without an adequate intake of the foods needed, a person's health is endangered. The relationship between undernutrition and mental retardation is being investigated in the United States as well as in less affluent countries of the world. In many developing countries where malnutrition exists one finds a decreased intellectual development of the population. This often coexists with a serious deprivation of stimulation from parents and peers as well as from the total environment.

Brain Functions

Preliminary results of the National Nutrition Survey, begun in 1968 and sponsored by the U. S. Department of Health, Education and Welfare, indicated that of the twelve thousand people examined four to five per cent showed symptoms sometimes associated with severe malnutrition. One third of the children under six years old and fifteen per cent of the sample population had low blood hæmoglobin levels, indicat-

All stages of life—the fœtus, the growth of the child, the maturation of the adult, and the deterioration of the aged—are nutritionally dependent.

by KATHLEEN ZOBLER

ing anæmia or iron deficiency. About seventeen per cent—nearly two thousand of those examined—showed abnormally low protein levels in their blood. Deficiencies of vitamins A and C and of iodine appeared in a significant number of persons.

Researchers in Guatemala studied a group of twenty preschool children who had been hospitalized for severe malnutrition in earlier childhood and had recuperated. They found that events during the first six months of life appeared most critical to later normal development. The mental and muscular development rates for those children were slower than for children matched in all ways except malnutrition. With time, some of the differences narrowed between the groups, except in cases in which the malnutrition occurred early in life.

In Chile, Dr. M. Winick examined brains of infants who had died of marasmus (wasting resulting from severe restriction of food intake) and found that they had only forty per cent of the expected number of brain cells when compared with the brains of infants who died from accidents.

In a long-term study a group of twenty severely malnourished infants, mostly aged ten months to two years, were compared with a second group of better-nourished babies matched for race, age, sex, and low socio-economic class. This study began in 1955. Eleven years later the severely malnourished children displayed smaller head sizes and much lower intellectual achievement on various test measures than did the second group. Emotional and social deprivations may have been a factor in the test performance of the first group, but the implications of malnutrition on mental development could not be ignored.

All stages of life—the fœtus, the growth of the child, the maturation of the adult, and the deterioration of the aged—are nutritionally dependent. Evidence indicates that prenatal and postnatal undernutrition does influence the growth processes, the central nervous system, and brain functioning.

A comparison of certain growth rates is shown in the table below.

These different rates help us understand the effect of undernutrition on optimal physical and mental development.

Normal growth in the body and in individual organs stems initially from cell division, which is the body's way of acquiring new cells. During this early period of growth the size of individual cells remains constant. Later, growth is made

RATES OF GROWTH

Man Has Reached	Per cent of His Adult Weight	Per cent of His Adult Height	Per cent of His Head Circumference
At birth	5.7	30.0	63.0
At one year	16.3	44.1	83.6
At three years	24.0	57.0	90.0

by both increase in number and size. Finally, growth proceeds only from enlargement of the size of individual cells. These stages merge gradually into one another and vary in duration with each organ. Severe malnutrition in a pregnant woman may affect the unborn child by reducing the nutrients available to it for normal cell growth. The timing of nutritional deprivation, therefore, is critical.

Among body organs, the brain first completes its growth. The most rapid growth period is reported to be from the fifth fœtal month to the end of the first year, a period highly susceptible to nutritional deficits. By the end of the first year of life the brain reaches seventy per cent of its adult weight, and by the end of the second year its growth is almost complete. Undernutrition during the rapid growth period may not only inhibit brain growth but may result also in irreversible damage to brain functioning and mental activity.

The degree to which malnutrition will be damaging will depend on the time in life at which it occurs, the length of time the condition exists, and the severity of the condition. The degree to which such effects can be reversed depends on these factors, as well as on the intensity and duration of adequate feeding.

Dietary Deficiencies

One can judge mental ability and performance by an individual's ability to learn and by his behaviour. Even after adequate structure of the central nervous system is assured, one's mental capability continues to be susceptible to specific types of dietary deficiencies, regardless of age. Mildly inadequate or borderline intake of specific nutrients affects the functioning of the central nervous system to a lesser degree, but still interferes with learning and performance.

A few of these include:

1. Lack of thiamine causes anxiety, irritable, depression, and increased sensitivity to noise and pain.

2. Insufficient iron results in lowered hæmoglobin, reducing the capacity of the blood to carry oxygen needed for normal functioning of the brain.

3. Inadequate amounts of niacin result in lassitude, aprehension, and depression.

4. Lack of vitamin B_{12} produces mental confusion.

5. Too little iodine results in low basal metabolic rate and physical and mental languor.

Assessing the long-term impact of malnutrition is extremely difficult since other factors influence human growth and development. These factors include the individual's genetic potential, general health, the role of the parents, as well as stimulation from other social and environmental conditions. Continuing research will provide additional information of the effects of undernutrition. What we do know should be utilized in planning nutrition education and food distribution programmes.

Overnutrition

Let us turn now to the other type of malnutrition, that of overnutrition. Apparently being overweight constitutes the most prevalent chronic disease in affluent countries. In the United States, for example, one of every four men and women, ages thirty to thirty-nine, is twenty per cent or more above his or her "desirable" weight, according to one estimate. Life insurance studies indicate that those who are overweight—especially men—run a greater risk of serious illness than those who maintain a desirable weight. The greater the degree of overweight, the greater the risk, particularly after age forty.

Marked overweight, identified as obesity, usually represents excess fat. Obesity has been called a disease of affluence; its cost may be a higher risk to several common life-threatening diseases: coronary heart disease, high blood pressure, diabetes, gall bladder disease, and certain forms of arthritis. Obesity overburdens the bones and the joints. It also interferes with the proper functioning of the heart and lungs. Extreme obesity prevents proper air intake into the lungs and threatens the function of the brain.

The cause of obesity in some cases may be complex. But the basic problem is this: Food intake in calories exceeds body energy needs. The excess is stored as fat.

Multiple factors may play a role in the intake of excess calories. Certainly the popularity of snack items such as potato chips, chivda, ice cream, and sweetened beverages adds many calories to the day's food intake. One can snack his way to malnutrition, since the eating of snack items often reduces the essential nutrients supplied by the Basic Four food groups. Too often snack foods are high in fat and/or sugar.

During 1969 the per capita

sugar consumption in the United States totalled over one hundred pounds! Household use (consumer packages) represented twenty-five per cent of sugar consumption. Commercially prepared beverages (largely soft drinks) accounted for twenty-one per cent of the total use, compared with seventeen per cent in 1965 and twenty per cent in 1968. Commercially prepared foods represented forty-three per cent of total sugar use last year.

Consumers must become label readers in order to know what ingredients are present in the foods they purchase. Ingredients are listed in order of prominence by weight. For example, some ready-to-eat breakfast cereals contain more sugar by weight than oats, wheat, corn, or any mixture of grains. Therefore, one finds sugar listed first on the label.

Other convenience food items may contain a large porportion of fat. Many processed meat products contain as much as thirty per cent fat. Baking chocolate has not less than fifty per cent and not more than fifty-eight per cent of cacao fat by weight. Both visible and invisible fats must be considered when calculating the caloric value. Since one gramme of fat yields approximately nine calories, whereas one gramme of protein or carbohydrate yields approximately four calories, experts recommend that fats represent approximately twenty-five per cent of the daily caloric intake (there are approximately twenty-eight grammes in one ounce). For the average American diet the fat intake approaches forty to forty-five per cent.

A pound of body fat approximates 3,500 calories in food. An excess of 500 calories of food or drink a day means a pound of extra fat a week, or fifty pounds a year. Likewise, a reduction of 250 calories in the diet a day, with exercise to burn off 250 more calories, can reduce weight a pound a week, or fifty in a year.

ENERGY EQUIVALENTS OF FOOD CALORIES EXPRESSED IN MINUTES OF ACTIVITY

FOOD	CALORIES	ACTIVITY				
		Walking* Min.	Riding bicycle** Min.	Swimming§ Min.	Running++ Min.	Reclining‡ Min.
Bread and butter	78	15	10	7	4	60
Cake, 1/12, 1-layer	356	68	43	32	18	274
Carbonated beverage, 1 glass	106	20	13	9	5	82
Doughnut	151	29	18	13	8	116
Ice cream, 1/6 qt.	193	37	24	17	10	148
Milk shake	421	81	51	38	22	324
Potato chips, 1 serving	108	21	13	10	6	83

*Energy cost of walking for 70-kg. individual=5.2 calories per minute at 3.5 m.p.h.
**Energy cost of riding bicycle=8.2 calories per minute.
§Energy cost of swimming=11.2 calories per minute.
++Energy cost of running=19.4 calories per minute.
‡Energy cost of reclining=1.3 calories per minute.

Lack of Exercise

A second significant factor involved in obesity concerns lack of exercise. Today's living pattern tends to make people less active physically. Modern household equipment saves energy. Instead of walking, people use buses, cars or scooters for transportation. In recreational and sports activities, we have become spectators rather than participants. Many spend large amounts of time watching the television screen or listening to radio programmes, which requires minimal energy. The end result is a reduced energy requirement for the body, so fewer calories are needed. At the same time that the individual reduces physical activity, he fails to reduce food intake, and the excess accumulates as fat.

The energy equivalents of food calories have been expressed in minutes of activity. The examples listed above indicate the importance of physical exercise in weight control.

The major secret of weight control centres around the proper choice of foods. An effective weight reduction diet will reflect a behavioural change in eating habits and should begin in a doctor's office. Crash diets may be hazardous as often they are unbalanced nutritionally and may produce anæmia and create protein, mineral, and vitamin deficiencies.

The recipe for successful weight reduction is simple:

Take MOTIVATION—strong reasons for losing weight.

Add KNOWLEDGE—about good nutrition.

Mix with SELF-DISCIPLINE —will-power.

Dash of EXTRA PHYSICAL ACTIVITY.

Maintenance of desirable weight is practising preventive medicine. The best dietary advice is to balance food input with physical activity output. Someone has well said, "If you lengthen your girth line, you shorten your lifeline." ***

If you are a smoker, don't read this.

AFTER you have stopped smoking, you will likely find that some of your friends, business associates, relatives, and even strangers will try to get you to start smoking again. You will be subjected to various kinds of social pressure.

If you are going to resist this pressure effectively, you must be well prepared in advance to meet it. You must understand what is going on when it happens, why it is going on, and just how to cope with it. Your experience in meeting and resisting it can be very interesting, entertaining—and fully successful. You may find yourself so effective in handling the situation that you may wind up persuading the other person to quit smoking!

First, let us take a look at the "why" of social pressure. If you are going to meet it, you must understand what is behind it, what causes it, and what you must do to resist it. Now, if you go out to dinner with a group of friends and they order a rare food, or even a common one, and you decline to follow suit, no one becomes especially concerned. But if others around the table light up—and they know you used to—you may find at once that there is an immediate reaction. You will find that the social pressure will start.

Social Pressure

Many times it will involve only one person in the group, and that person will be you. On the other hand, it may involve several. Sometimes playful jests will be tossed your way. Other times there will be a flash of irritation, and occasionally manifestation of real anger, even though this is often somewhat concealed. If the people with you are drinking, the social pressure will be more potent than if they are not. Also if they are drinking and you are not, the pressure is stronger.

Why should it make any difference to others whether you smoke? These days the evidence against smoking has mounted high. It is no longer possible to make any logical case for smoking. In addition, wise people are stopping, or already have. And doctors lead the procession. The smoker knows he ought to stop, but yet he may be resisting. Down deep he feels guilty about his smoking.

When he is with someone who has stopped, he feels as if you are pointing your finger at him. He is irritated at what seems to him to be a criticism if not a condemnation which is somehow implied by your conduct. He feels that he must defend himself, and that if he can get you to smoke with him again he has somehow won a victory and nullified criticism.

He is also jealous and often filled with envy. If he gets you to smoke again, he conquers his guilt feelings and thereby feels more comfortable. Thus, he meets what to him is personal criticism by resorting to social pressure to bend another person to his will. In fact, the more he is smoking the more guilty he may feel about it and the harder he may try to get the other person to smoke.

Some individuals will be doing all this consciously

ONLY FOR EX-SMOKERS

by WILLIAM N. PLYMAT

others half consciously. Maybe in some cases they are doing it without being fully aware of why they are doing it. Some of the jibes they will shoot your way will be as clever as they are illogical, and sometimes they will be loaded with derision. One time I heard a man say: "Any coward can quit smoking, but it takes real courage to face lung cancer." Other times I have heard references about whether an ex-smoker is sprouting wings and getting "holy."

Pressure Tactics

It will sometimes be suggested that you have started down the road to ending all fun. You will be asked what you are going to give up next. Are you going to stop being human? It will be suggested that everyone has to have a "sin." You will be told you will die eventually from something anyway. You will be told that you have to find a substitute for smoking, and what you substitute may be even worse for you.

You will find if you try that you can come up with good answers for every one of these assertions, and others that come your way too. For example, you can say that although you know all the hazards involved, you have decided to face them and live ten years longer, so that your talents can be contributed to your family and to others around you.

There is no reason why you should feel that a smoker has a right to put you on trial for your actions, or that you should feel you have to defend yourself. So do not start off by being on the defensive. Just say that you have decided to quit smoking for what you believe are good reasons.

You might say that you are not patting yourself on the back or condemning anyone else. It is a free country, and everyone should be allowed to do what he pleases as long as it does not injure anyone else. You may say that you do not want to discuss it in detail, although you may volunteer your reasons if pressed. You might say that you do not want to argue about it.

If you find yourself pressured strongly, you might say, "I am not pushing you to stop smoking, I consider this is a matter of your own business. Then why do you push me to start smoking again? I think you might well ask yourself why you are concerned whether I smoke or not. Why should it make any difference to you?"

This response may result in the other person's making some effort to explain himself. Now the other person is on the defensive. And usually that person will refuse to explain. He suddenly realizes that he cannot really justify his actions in pressuring you, and he will usually drop the subject.

But if he tries to explain, he will find himself trapped. He will find it necessary to resort to his own "reasons" for smoking, and they will not stand up.

A preacher one time defined the difference between an "excuse" and a "reason": "An 'excuse' is the skin of a 'reason' that is stuffed with a lie."

If you are calm about it, and friendly, you may be able to show your smoking friend that he is smoking for merely a pile of excuses, and you may wind up leading your friend to quit smoking himself if you can get him to see the illogical nature of his boasted "reasons." However, you should not push or try to pressure your friend in reverse.

You may feel that you are not strong enough to engage in conversation about a controversial question. If so, you are selling yourself short on your inherent communication abilities. You do not have to complete a special course on how to sell or convince people in order to do it. All you really need are the basic facts on your side—in essence, to have the truth on your side. Merely explain the facts in a soft and kindly voice.

In spite of all this, sometimes toward the end of a conversation on smoking you may feel that the other person is almost serving an ultimatum on you to smoke. You may feel that you are being given a choice, either to start smoking again or to end a friendship. This may be the supreme challenge to you.

You might well reply thus: "You seem to be serving an ultimatum on me that I must go back to smoking or you will withdraw your friendship and strike me off your social list. I have enjoyed your friendship and would like to continue to be a friend of yours; but if you are saying this, then I will have to make my own decision. As far as I am concerned, I will continue to be your friend and will feel comfortable around you even though you are smoking."

I believe in most cases that your smoking friend will cancel his ultimatum, because down deep in his heart he has respect for your courage and firmness, and also he knows that he should be following your action. If you keep your cool through all this, you may find your friend asking how you managed to stop. Then you can tell your story of success. And you can tell the benefits of stopping. You can say that, in a way, it took you five days, that you have in effect traded five days of discomfort for ten more years of living.

Help Others Stop

Right here comes an interesting challenge to you. You have found the many benefits of quitting. You ought to be interested in helping others stop. This takes skill, and you will have to learn by doing. You must avoid "force" in any form. You must not use either *negative* or *positive* force.

Negative force is a threat of punishment—a boss threatens to fire a heavy smoker, for example. Positive force is almost as bad. A boss offers a raise to a heavy smoker if he quits the habit. Force creates resistance, and the person spends his time being angry at you and thinking he is justified. He does not really think about what your are saying.

There may be exceptions to this, of course. If you have an employee working closely with you, it may be impossible to have him smoking around you. Also, in some cases where the need is urgent and all else fails, force may be needed.

Instead of force, you should present evidence as best you can. Hopefully you will be able to present it directly. This is best. But sometimes you will need to use the help of others. You can offer encouragment and help, but you must leave the final decision up to the smoker.

In describing what your jealous friends may do in pressuring you, I want to say that many of your *real* friends (both smokers and nonsmokers) will congratulate you on your decision to quit. They will be proud of you. Such friends will be a real help, and you will come to know that they are your best friends.

You yourself may have been helped to stop smoking by the concern and interest of friends who cared. If so, you will find a great thrill and personal satisfaction in turn by being a friend who cares. ***

New Drugs from Indian Plants

Calcutta University's Pure Chemistry Department has made valuable contributions to the study of plant chemistry, particularly by the discovery of a number of alkaloids which possess high therapeutic indices and have received clinical applications. Research on some Indian plants like Rauwolfia, Alstonia, Rhazya, Vinca and Angelica has made it possible to produce some drugs for treating neurological and sensory disorders. Some specific drugs for treating some varieties of cancer and heart diseases have also been developed, says Prof. Ashima Chatterjee of the Pure Chemistry Department.

She adds that her department has also worked out active principles of some types of insecticides which can be used by farmers. The discovery of a reagent as a substitute for ozone has been useful in some factories and industrial establishments.

—*Indian Medical Journal*

THE BLESSINGS OF WRINKLES

by EDITH HARPER

FEW women welcome wrinkles. Yet, a face with no lines on it is singularly lacking in character for, over the years, wrinkles have not come by accident. They are signposts to our way of life, revealing much of our personality to the observant.

Children, inexperienced in life, present a smooth face to the world. As job, sorrow, greed, or sickness affect them as they grow up, gradually these emotions leave their mark on their faces.

In adult life lack of wrinkles often indicates an unimaginative, humourless person, one who is not particularly happy but has passed through life with ease, if not experiencing it to the full. Among these are folk who are selfish and not given to bothering over the troubles of others.

Wrinkles forming around the mouth and eyes are more indicative of character than those anywhere else. Lines strongly marked downward from the corners of the mouth usually accompany a pessimistic nature. Many small lines, curved around the mouth's corners go with a smiling, happy nature.

The group of wrinkles between the eyes can be caused by many characteristics. Worry, accompanied by constant frowning, draws deeply scored wrinkles there. Deep thinking can also cause these "frown" lines in a more cheerful person. Bad temper, often caused by poor health, also shows in wrinkles between the eyes.

Small lines forming around the outside corner of eyes are usually there because the owner likes a good laugh and is a cheerful companion. Bad sight, causing the owner to screw up his eyes in peering at objects, also brings its quota of wrinkles around the face.

Extreme old age, of course, produces a net-work of fine lines caused by shrinking may be held at bay, but eventually no beauty treatment can "cure" them. Nature knows best, and when hair, complexion, and figure are past their prime, she bestows the blessing of wrinkles on humanity to emphasize character when "beauty" has gone. ***

Are You Getting Enough Vitamins?

by HULDA CROOKS

WHAT kind of vitamins do you take? The question comes up ever more frequently as the years slip by, and I continue to give my stock answer: "Food vitamins."

Getting your vitamins from foods, as I do, has certain advantages over buying them in bottles. In the first place, they come in suitable concentrations. They never overwhelm the system with such surpluses as to call the excretory organs to the rescue to throw them out. Certain fat-soluble ones (vitamins A and D) cannot be readily thrown out, and these, when taken in concentrated form, generally far exceed the body's need. They may accumulate and cause symptoms of disease difficult to diagnose and even more difficult to cure.

Another advantage of depending on food for your vitamins lies in the matter of interrelationships. As found in foods, vitamins come in association with other vitamins and with various other nutrients with which they interact to carry out the vital processes of the body. Vitamins themselves are useless without nutrients upon which to act—about as useless as a match with nothing to burn. Proper foods are essential to health, and the vitamins are essential for the efficient utilization of the ingested foodstuffs.

Also, vitamins cost less that way—much less. In fact, they come free. All you pay for is the food. You are left with the money you did not spend on concentrated supplements as a bonus with which to buy more good food. Then no one will ever find you, or me, as a social worker found one destitute young mother of five who was trying to nurse a hungry, crying baby for which she did not have enough milk.

There was no food in the house. The only food the mother and the four preschool children had eaten that day was some rice gruel. But, unbelievably, on the shelf in the cupboard was a fresh bottle of an expensive vitamin-mineral supplement. Someone had convinced the woman that this preparation would enable her to produce more milk for the baby and it would give her other children the nourishment they needed. The price was rather high, and wiped off the last money she had. That sum would have bought a good basketful of food, with vitamins included, for her starving family.

Why are we so concerned about vitamins, when through all preceding centuries people lived well without knowing that such substances existed? Vitamins were not even named until 1912.

What Are They?

Vitamins are chemical constituents of food. Each one has its own specific formula, and if this formula has been identified, the vitamin can be made in the laboratory. Contrary to what some think, vitamins furnish no energy and provide no building material for the body, but they are essential. They are organic compounds that activate and regulate life's vital processes. They differ greatly in chemical composition and in function. No other dietary constituent can play the role of a vitamin in maintaining normal body metabolism. So we must have our vitamins.

The amounts of vitamins required are so small they are commonly measured in milligrammes (a milligramme is 1/28,000th of an ounce). Some, needed in still smaller amounts, are measured in microgrammes (a microgramme is 1/28,000,000th of an ounce). Their potency, however, is so great that one microgramme of vitamin B_{12}, if utilized by the body, is sufficient to prevent pernicious anæmia, a disease likely to follow a prolonged deficiency. One ounce is enough to last 15,000 years if taken at the recommended level of five microgrammes a day! While more is needed of most other known vitamins to prevent deficiency, the amounts are all extremely small.

Throughout past ages, before men learned to refine their foods, vitamin deficiency diseases were no great problem. The vitamins were there in the various foods and were eaten even though no one suspected their existence. But man's inventive genius upset the balance. The removal or destruction of these dietary constituents by the refining and processing of foods caused serious and often fatal diseases.

When men learned to build ships that could roam the seas on voyages which lasted for months or years, a real vitamin problem developed. The diet of the ships' crews on these voyages depended too much on biscuits and salt pork. With no fresh foods to provide vitamin C (ascorbic acid), the men developed scurvy. Sometimes more than half of the men became sick, and many died before the ships returned home.

Depleted Diet

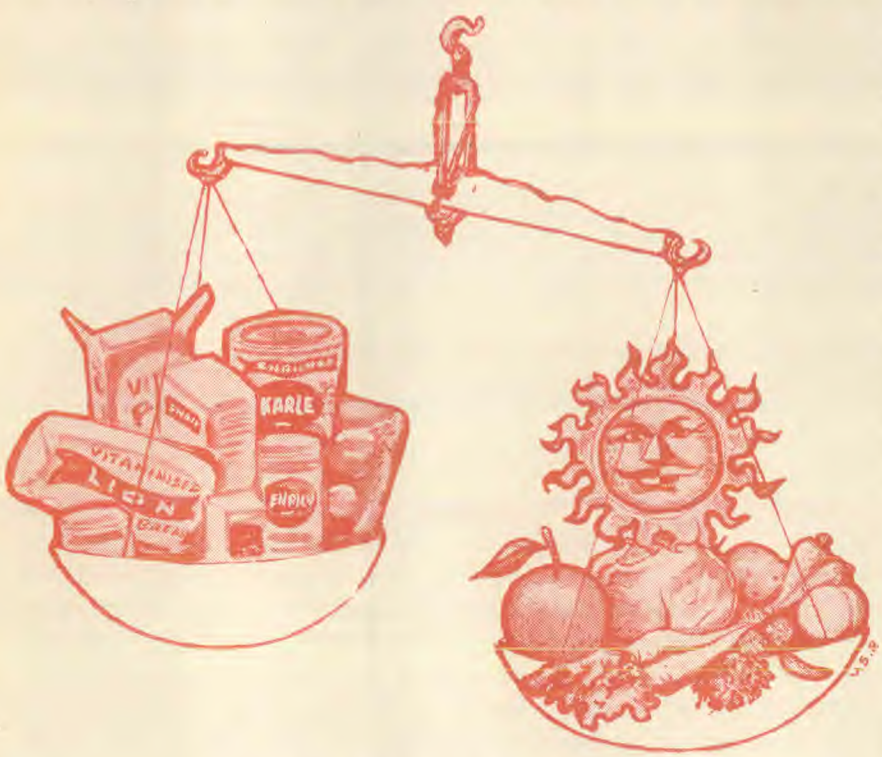
Other deficiencies developed when machines were invented to refine foods. The ancients knew that the juice of sugarcane is sweet, but not until rather modern inventions made possible the purification and crystallization of white sugar did men realize it had any relationship to vitamin deficiency. A century ago, the consumption of sugar was negligible. For example, as late as 1820, the average yearly sugar consumption in the United States was only about eight pounds per person.

This amount did not greatly lower the vitamin intake of the average diet. But when sugar became readily available and cheap, its popularity grew rapidly. Today they use over one hundred pounds of white sugar per person each year—"empty calories" aptly described as not having "a vitamin in a carload." Add to this the amount of sweet dishes eaten, and we simply crowd out foods rich in both vitamins and minerals.

The invention of mills to remove the bran and germ from cereal grains has further depleted the diet. White flour and polished rice lose most of the rich supply of the B-vitamins concentrated in their outer portions. These refined products have become so popular that they have practically eliminated the whole-grain preparations from the tables of the world.

About sixteen per cent of refined calories come from our use of fats separated from their original sources. The fats and oils used on our tables and in cooking contribute little to the day's vitamin intake except for vitamin E, mainly in vegetable oils, and vitamin A, in margarine and butter.

You may ask, Did not the substitution of these heavily processed foods for the unrefined foods cause deficiencies? Indeed it did, particularly in countries where the main dietary dependence was on cereals. Beriberi, a thiamine deficiency disease, struck hard in countries where white rice replaced the natural brown rice. This disease did not become a serious problem in places where the food supply is more varied and the thiamine lost from the grains was partially supplied by other foods.



Vitamins received from natural sources are to be preferred to those from artificial sources.

Dreadful Diseases

As men searched for the causes of these dreadful diseases such as beriberi and pellagra and for the means to prevent and cure them, they discovered vitamins. When the missing factors were supplied—vitamin C for scurvy, thiamine for beriberi, and niacin for pellagra—the recovery was

like a miracle, unless the condition had progressed beyond recovery. Now flour is "enriched," as we say, by the addition of thiamine, riboflavin, niacin, and iron to about the level found in whole-wheat flour.

But this "enrichment" does not put back the other vitamins, minerals, and various nutrients lost in the thirty per cent outer part of the wheat berry that is milled off and sold as stock and poultry feed. Only a small portion of what was removed of both known and unknown nutrients is returned through enrichment. That's why I favour wholegrain breads and cereals, or, if part white flour is used in baking, the addition of wheat germ or other substances normally rich in vitamins and minerals.

When scientists discovered that certain vitamins worked wonders in the cure of specific diseases, they concentrated massive efforts to find more of these remarkable factors to clear up yet other diseases that had long resisted medical science.

Vitamin	*Recommended*	*Vitamin Sources*
Vitamin C*	55 mgs.	1 orange, 2/3 cup dark green leafy vegetable, ½ cantaloupe (muskmelon), 2/3 cup strawberries.
Vitamin A*	5,000 I. U.	1 carrot, 2/3 cup dark green leafy vegetable, ½ cantaloupe (muskmelon), 6 apricots, ½ sweet potato.
Vitamin D	400 I. U.	Sunshine on skin is the main source. There is some in foods. Fortification of milk and other foods commonly supplies more than is recommended.
Vitamin E	25 I. U.	Amount needed varies with the composition of the diet. Highly unsaturated oils provide it, but also raise the requirement. Good sources that add up to meet the need are whole-grain products and wheat germ, dark green leafy vegetables, eggs, milk, vegetable fats and oils.

*Any one of the foods in the list provides approximately the recommended daily amount of the designated vitamin.

Vitamin Sources

The truth is that there is no miraculous way to good health. Cramming ourselves full of vitamins we don't need will not turn time backward for the elderly or make milk for the baby. Good food, simply prepared, supplies all nutritional needs under normal circumstances. If an abnormal situation exists, then the help of a good physician should be enlisted. There are times when supplemental vitamins are certainly indicated and of real benefit. But the average individual does not know what he needs, and neither does the salesman of the cure-all mixtures.

But back to my vitamins. Specifically, where do we get our vitamins?

Specifically? I have no hard-and-fast rule, except that I choose my diet from good foods and avoid sweets and refined products. Not that I never take a piece of pie, cake or candy, but I do so only occasionally.

More specifically, I am a vegetarian and have been for fifty-six years. My diet consists primarily of whole-grain breads and cereals, legumes, fruits, and vegetables. I use about a pint of milk a day, cottage cheese and eggs at times. My programme is built around two meals a day. I eat breakfast between six and seven and dinner between one and two in the afternoon. Between meals I drink about four glasses of water a day. When the weather is warm, my goal is four glasses in the morning and another two before evening.

Where do I get my vitamins? The above table shows the recommended daily intake of a few of the best-known vitamins and how they can be obtained from the simple foods of my diet.

Good food sources of the B-complex vitamins (thiamine, riboflavin, folic acid, pyridoxine, etc.) are whole grains, especially the germ and bran portions, legumes, dark green leafy vegetables, potatoes, other vegetables, milk, and eggs.

Notice that a certain food may be a good source of a number

of vitamins. The preceding table shows that a serving of dark green leafy vegetables will provide the recommended daily intake of both vitamin C and A, and it is also a good source of vitamin E and of B-complex. Although one serving of one of these foods supplies a whole day's requirement of two vitamins and a good portion of others, most vitamins are provided in smaller amounts by different foods. Generally, the day's need of a particular vitamin is met, not by the amount found in one food, but by the sum of them found in all the diet. For this reason every food should provide its quota of nutrients. Any well chosen diet will furnish an adequate supply of vitamins, as reputable nutrition scientists repeatedly tell us.

Dr. Fred M. Taylor, associate professor of pædiatrics, Baylor University College of Medicine (U.S.A.), counsels, "For almost any dietary nutrient there is a 'minimum intake necessary for life, an optimum intake compatible with health and, finally, an excessive level of intake that is injurious.' "[1]

Every now and then someone confides to me, "We try to use only organically grown foods."

So do I. If I did not, what would I eat? Everything that grows is organically grown. How else? But I pay no fancy price. I buy the common fruits and vegetables available in any good market.

That's where I get my vitamins —from common good foods. These will, I trust, with the blessing of Him who made them, provide the vitamins and the energy we all need.

[1]Fred M. Taylor, "Hypervitaminosis and Overnutrition," in *Pediatric Clinics of North America*, 1963. Vol. 10, p. 87.

Onions Could Save Your Life

by NICHOLAS TOMALIM

If you want to avoid coronary thrombosis, or any of the other diseases that involve blood clotting, you might try eating lots of onions. You can have them fried, boiled, raw, dehydrated or minced—just eat onions.

No one, as yet, knows quite why the onion is so health-giving. Drug firms and other medical researchers are at work to try to isolate the magic ingredient. But it does seem that onions possess some quality that helps the blood to dissolve potential clots.

The first clue that led to this discovery was a chance remark by a Frenchman to his doctor, who happened to be an Indian there on a temporary practice, that in his country horses that develop blood clots in the legs are treated by a diet of garlic and onions.

When the doctor, Dr. I. Sudharkaran Menon found himself with a research job at the Royal Victoria Infirmary in Newcastle, England, he resolved to discover whether there was anything in this original folk remedy.

With the collaboration of three colleagues, he set in motion a research project. Twenty-two patients who were recovering from stomach ailments, and were not being treated with any drugs that might interfere with the study, were selected for the experiment.

They were made to stay in bed (as exercise can also help to dissolve blood clots), were first starved, then fed a carefully-controlled series of mammoth breakfasts.

One group was given a large fatty feast, bacon, eggs and the rest. The second was fed the same meal, with the addition of fried onions. On the next day the two groups were swopped around.

Meanwhile, another smaller section of the group was

To page 33

1. Stand with feet together, arms forward at shoulder height. Swing the legs alternately forward and then down. Inhale on one swing and exhale on the other.

2. Stand with feet together, arms out to the sides at shoulder height. Swing the legs alternately to the side and then down. Inhale on one swing and exhale on the other.

3. Stand with feet together, hands at waistline. Swing the legs alternately backward and then down. Inhale on one swing and exhale on the other.

4. Stand with feet apa arms at side. Swing ar forward in horizontal p and squat down while i deeply, then get up as the drop while you exhale.

Diseases Caused by Lack of Exerises

by J. D. Henricksen, M.D.

People today probably are tougher than their ancestors years ago. We know that in comparison with them modern man has a longer average life span, better medical care, less hard work, better homes, more interest in hygiene, more knowledge about balanced diet, better tooth care, and more health information from radio, newspapers, and magazines. Although the average

7. Stand with feet apart and body bent forward, arms hanging down. Swing arms and body up to the straight upright position while inhaling, bend a little backward while bending the knees and elbows, and swing forward to the floor while exhaling.

8. Stand with feet together, arms flexed at shoulder height. Swing the arms out to the sides as you step forward, 45-degree angle to the left, with left leg bending at the knee, while inhaling, and go back to starting position while exhaling. Alternate with right leg.

9. Stand wit arms out at sh swing left arm bend forward to t while exhaling. return to star Alternate with r left foot.

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5. Stand with feet apart and arms at a 45-degree angle from side, twist head and body to the left while inhaling, then to the right while inhaling and to the left while exhaling.

6. Stand with feet apart and arms at sides. Bend to the left and swing the right arm over the head while inhaling, then do the same with the other side and the other arm while exhaling. Repeat five times, then alternate.

person is more health conscious than ever before, we hear a steadily increasing warning that today's soft living is having a deplorable effect on our physical, mental, and moral fitness.

Contributing to soft living are the modern appliances that reduce to a minimum bodily energy expenditure necessary for housewife, husband, and children to keep up the neatness of the home, thus making it possible for them all to be occupied outside the home, whether at school or at work. Few of them think of walking any distance today, because many of them go by bus, car, or trains. We are living in a push-button time, and there is little opportunity for really hard work for any member of the family.

Many people are tired of hearing about fitness, and some of them are confused as to what it is. Fitness connotes strong muscles, endurance, and many other things.

You go to the doctor for an examination, and he gives you a clean bill of health, but this report does not mean that you are fit in the true sense of the word. He measures your blood pressure, listens to your heart and lungs, and examines other parts of your body, but these examinations do

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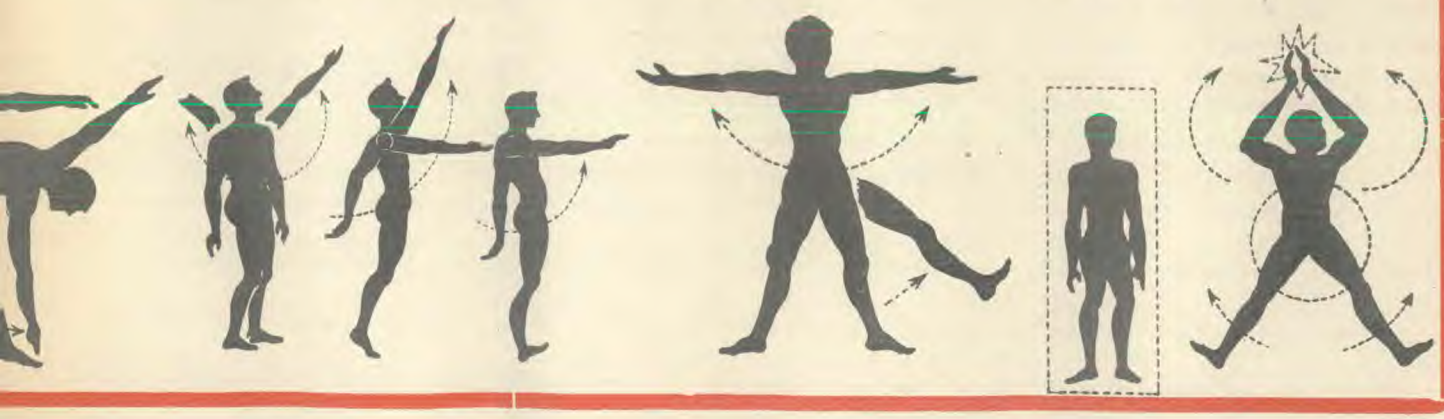
10. Stand with feet a little apart, arms at sides, swing the arms out and up over the head, step up on your toes, inhaling at the time. Exhale as you swing the arms to the sides, forward up to shoulder height, and stand on your heels. Return to starting position.

11. Stand with feet apart, arms at sides. Swing arms to the side to shoulder height as you move left leg to the side as you inhale, move back to position as you exhale. Alternate with right and left legs.

12. Stand with feet together, arms at side. In a jump, bring feet apart and swing the arms out to the sides up over the head (clap hands) as you inhale. As you jump back to starting position, exhale.



not give him any clue as to whether you are mentally and emotionally fit, have control over your will power, are up to certain intellectual standards, are developed spiritually, or are well adjusted as a mature person.

Lack of Exercise

The doctor's examination does not reveal whether you are able to work through the day without becoming extremely fatigued or overly tense, nor whether your heart, lungs, or brain will function normally in a mental or physical emergency.

The only thing the doctor may tell you is that your posture is not so good as it should be or that your muscles lack proper tone and strength. You need total fitness in order to take the stress and strain of every day and to hold up under pressure, when you need extra endurance and power.

Too little exercise not only keeps you from being fit but also leads to illness. Illness may be caused by many things—infection, accident, stress, strain, inherited disease, and birth defect. But who has heard about diseases caused by lack of exercise? We are not talking about lack of vitamins, hormones, minerals, or hygiene, but simply lack of exercise—too little physical activity.

Recently I read this statement:

"The forgotten man in medicine is the physically inactive person—the candidate for early invalidism and premature death. He remains basically unattended until overtaken by manifested disease, which requires belated remedial and rehabilitative measures at exorbitant cost."—Kraus and Raab, *Hypokinetic Disease*, p. 170.

By the time the forgotten man develops symptoms, nobody asks him how much exercise he takes, but research and practice reveal that lack of exercise is causing an

Everybody who has been physically active and has mastered physical tasks with adequate muscle knows of the great satisfaction and pleasure resulting from such activity.

increasing number of ailments. It has been pointed out several times that it is "the responsibility of the family physician not only to treat the diseases, but to see that his patient achieves and maintains positive health for a full realization of his physical possibilities, including regular exercises, proper food habits, and sufficient rest, in the daily schedule."—Jean Mayer, associate professor of nutrition, Harvard University, *Exercise and Fitness*, p. 121.

Four Problems

Here are four problems that may be due to lack of exercise.

1. Nervous Tension. As we think of nervous tension let us first consider emotional balance and review this statement by Dr. Mayer:

"Everybody who has been physically active and has mastered physical tasks with adequate muscle knows of the great satisfaction and pleasure resulting from such activity. Deep sleep after the day's heavy physical work helps to establish emotional balance."

The muscular activity mentioned could be bodily work, physical exercise, ball playing, or swimming. After these activities a natural feeling of fatigue and need for rest and sleep comes on.

Dr. Paul Von Lemkau in a paper entitled "Prevention of Psychiatric Illness," published in the *Journal of the American Medical Association*, volume 162, page 854, says:

"Regular exercise tends to lessen the tensions of emotion built up in daily living, and thus constantly to re-establish mental equilibrium. It serves a valuable function since there is no acceptable satisfaction for many of our feelings."

Perhaps that statement explains why, when people are very tense, they think they should take a brisk walk. This exercise helps them to think more clearly, to see things in a more optimistic light, and thus to relax.

Another quotation from the same source tells us this:

"Formal gymnastics may well take their place again as part of the school educational programme, as an excellent basis for muscular development. Children who do not attempt muscular activity usually do not do well in games and sports. They don't enjoy them. The fear of competition often takes away all their pleasure and the ever present sense of being looked at interferes with their interest necessary for success. The anxiety about self-injury and hurting others weakens the will to strive for victory."

Formal gymnastics have obvious advantages for children not yet ready for co-operation and competition and for children lost in daydreams.

I believe that no ball playing, tumbling, or racing among school children should begin without ten or fifteen minutes of formal calisthenics to help make their lungs and heart strong and put muscles and joints in a state of readiness for the demands of competition.

Backache

2. Backache. The next problem to consider is backache. The idea that poor posture and muscle weakness may cause backache has been held for a long time, but not until recently has it been generally accepted that many back

complaints have muscular origin.

Kraus-Weber tests for minimum muscular fitness help show that many people have tight back muscles and weak front muscles. As a result they are poorly balanced for motion and posture. Drs. Kraus, Stimson, Gaston, and Thompson have proved that low back pain is due to muscular deficiency in eighty per cent of cases. Only twenty per cent of cases are due to other problems *(Hypokinetic Disease,* p. 13).

Conditioning of people with backache consists of proper exercises for increased mobility of the spine, its joints, and its muscles. The growing tendency toward low back pain may be caused by lack of exercise by children and young people. When they reach adulthood, with its greater demands on their physical strength through bodily labour, the symptoms of muscle tension, strain, rupture (followed by bleeding and swelling), and pressure on nerves come along, and there is much work for the backache specialist.

Try a brisk walk. It will help you to think more clearly, to see things in a more optimistic light, and thus to relax.

We must train these people at the time of their first backache to change their living habits and follow an exercise programme after they have been discharged from therapy. People with tight shoulder and neck muscles should continue with exercises at home to strengthen their abdominal muscle, maintain mobility, and improve posture. They should follow a prescribed schedule of exercise every day.

Heart Disease

3. Heart Disease. When we get to the third problem, disease of heart, blood vessels, and blood pressure we find that there is a tremendous increase in it.

Lack of regular exercise contributes signficantly to the development of heart-muscle injury, especially under stress. As exercise is able to prevent disease of heart and blood vessels, so also rehabilitation of heart patients must include a gradually increased exercise programme, perhaps first in bed, then at the side of the bed, across the floor, and later on stairs and hills.

The well-known heart specialist Dr. Paul Dudley White says that daily exercise in the form of walking, bicycling, calisthenics, or ball playing is needed to create reserve for the heart, so that in time of emergency or unexpected great output of work it will be able to take the extra strain and stress.

Overweight

4. Overweight. Overweight can be due to various factors. In our sedentary society, lack of exercise is the most common cause of overweight. Sedentary life not only reduces calorie burning but also disturbs normal regulation of food intake. Since overweight has been found to be a prominent contributing element in many diseases, and diet alone is often not enough to obtain the desired weight reduction and maintain it without being too stringent, a prescription of exercise is an important factor in treating most overweight people. Exercise is indispensable in the rational preventive programme of weight reduction.

We know that overweight leads to many such diseases as increased blood pressure, diabetes, and degenerative arthritis, notably arthritis in the back and legs.

Goldner says that obesity is accompanied by shortened life expectancy and high morbidity, particularly from degenerative heart-and-blood-vessel diseases, diabetes, and biliary diseases (stone-forming disease in the gall-bladder).

Although there are numerous diets prescribed for overweight, there is only one way of burning up excess calorie intake, and that is by means of exercise.

Daily exercise in the form of walking, bicycling, calisthenics is needed to create a reserve for the heart, so that in time of emergency or unexpected great output of work, it will be able to take the extra strain and stress.

There are other internal diseases that may occur from lack of exercise. They may include poor digestive function, inability to tolerate ordinary food, and inability to eliminate body waste. Long sitting tends to form blood clots in the legs. Lack of exercise causes difficulty in the endocrine system, lack of function of thyroid or adrenal glands, and a gradually developing feeling of chronic fatigue.

As there is little place for bodily work in modern living, the family must find out how to improve their health through a programme of exercise all year round. The school must take more interest in the physical development of students, not only those who take part in football, cricket, and basketball games but also the rest of the students. This is especially important for a person having a weak and quiet nature, because he needs more exercise than do robust people who are champions on the teams.

Exercise Programme

The exercise programme of adults ought to be a natural part of their daily duties, either in the home or in exercise classes, where they can find methods to keep

their weight down, avoid heart attack, keep their posture good, backs strong, and emotions balanced without undue tension.

It is not only modern medicine that has made efforts to proclaim man's need for more physical fitness and exercise. We read in the first book printed on exercises, published in 1553 by a physician, Dr. Christobal Mendes, of Spain, *Book of Bodily Exercise*, the following advice:

"Only exercise is an easy way to preserve health. It is the most profitable and includes and replaces all other treatment. If you cannot eat, exercise and dissipate the cause. If you eat too much and not too well, exercise to help digestion and to get rid of and dissipate that which is bad in it.

"If you cannot sleep, work a little bit and the fatigue will bring sleep with great relief. If you cannot eliminate very well below, you will achieve what you want by exercise.

"If you want to have gaiety and pleasure, there is nothing better than to . . . take any pleasurable exercise, bowl, play horseshoes, play ball, or whatever you command.

"If you want to provoke anger, argue a little bit on purpose, and since you move the body very much in doing so, there will be exercise. The easiest way of all to preserve and restore health with greater profit than all other measures put together, is to exercise well."

These quaint words are as important today as they were when written more than four centuries ago.

Take physical exercise with synchronized breathing to get the most benefit as a result of coordinating breathing with bodily movement. Follow this plan when you do exercises on pages 18 and 19. ***

Medical Proverbs

The Common Sense of Centuries

by Dr. R. Bouissou

SUMMARIZING popular experience or giving practical advice, concise and easy to remember, the proverb is a kind of decanted wisdom of the ages, the common sense or common fallacy of past centuries reduced to a formula. Proverbs reflect social conditions. They cover everything and anything that has to do with man in his community; medicine has obviously not been neglected; indeed, there is a body of proverbs that echo many phases of medical history and touch on almost every aspect of medical practice before the modern scientific period. Short and rhythmic, blunt or piquant in turn, proverbs are often memorable through the use of rhyme, and, though the lore they express may be ancient and out of date, a kind of fusty folksiness that the modern hygienist cannot accept, many proverbs have a contemporary flavour and are still applicable today.

The history of medicine of course has no frontier: it is international and so, generally speaking, are the proverbs. They belong to many countries and their origin is thus often difficult to ascertain. Some proverbs, however, do have such distinctive character and bear such clear marks of a given source that it is easy to determine their home country.

The aim of this article is to give a brief outline of medical "proverbology" and to show something of what proverbs have to say about forms of treatment, remedies and hygiene, diagnosis and prognosis, surgery and the teaching of medicine. Whenever possible, the origin of the proverbs has been given. There were more than two thousand to choose from, and the present selection is based mainly on general applicability and present topicality.

Harbingers of Future

The study of medical proverbs is fascinating because of their variety and originality because of the learning they evince, and because of the questions they raise. Sometimes they have a scientific air and are the harbingers of future

An apple a day keeps the doctor away.

discoveries: medical facts were guessed at rather than demonstrated.

More than 2,000 years ago, the Chinese proclaimed "If you want your child to have a quiet life, he should always be a little hungry and have a slight cold". Was this the expression of an "immunological" notion as in a number of Spanish proverbs? "A small amount of poison neither harms nor kills", "Not all diseases are bad for the health", and "What gave you the disease gives you the cure", which reminds us of "The hair of the tail of the dog that bit you . . ." A 16th century proverb may also be quoted here: "Wise care begets fear". All these "immunological" proverbs are of historical and scientific interest today: their distant and unknown authors were precursors of the future.

Folk medicine thrives on proverbs and sayings of all sorts. The proverbs contain a lot of common sense as well as practical suggestions for the treatment of illness, and are often valuable, though scientific truth may not always be respected. Cures may derive from empirical practices, superstition or intuition, but they belong to the general fund of knowledge and belief which has come down the ages. "Everyone tries to be a doctor, there are more doctors than patients." Both the sick and the healthy practise medicine (illegally perhaps), so it is not surprising that there is a rich collection of proverbs in all parts of the world. Other proverbs derive more from the old professional medicine.

Setting the Limits

The Arab proverb "There is no cure for death" sets the limits of the art of medicine; a somewhat

If you can't be a king, be a doctor.

The best physicians are Dr. Diet, Dr. Quiet, and Dr. Merryman.

brighter view is taken by the inventor of "While there is life there is hope": the practitioner must never give up, even in serious cases, for, according to the English saying, "Desperate diseases have desperate cures", which is the equivalent of the French "Aux grands maux, les grands remedes".

The origins of a disease or illness must be known for correct treatment to be administered: "Chi non conosce l'origine del male, raramente la sua medicina vale" (if you do not know the origin of the illness, your medicine is rarely any good). This Italian proverb raises the question of the doctor's competence. According to the English, "The best physicians are Dr. Diet, Dr. Quiet and Dr. Merryman". There's plain speaking for you, if you like.

Scepticism has always been the rule in medicine. The French have no hesitation in saying—perhaps in a sarcastic tone of voice—"Hurry up and take some while it still works". One is curiously reminded of some modern situations, of antibiotics, for example, that become ineffective against certain strains of disease organisms, or DDT, against which some insects have become resistant.

The apothecaries do not escape comment or criticism. A whole chapter could be devoted to them. For one thing, pills and potions were mostly hard to take: "If the pills were pleasant they would not want gilding" as the English say. The patient's prayer "Heaven save us from an apothecary's mistake" deserved to be heard, for while in former times the apothecary was entitled to replace certain drugs by others (we might speak of ersatz today), he was not supposed to blunder in doing so.

Pills and Potions

While the English "doctor the bill" and say that "Sickness soaks the purse", the Russians advise that "A visit to the chemist means being bold with your gold" and the Germans comment "Though it may not cure the patient, it does the chemist a lot of good". The common denominator recognized by all is that the chemist is always rich—"Old doctor, young surgeon, rich apothecary".

Medical proverbs, however, are not just a matter of swallowing potions and applying remedies. There is a whole mass of advice on hygiene and prevention. The French proverb "Lever a cinq, diner a neuf, souper a cinq, coucher a neuf fera vivre nonante-neuf" has an English equivalent in "Early to bed, early to rise, makes a man healthy, wealthy and wise" and both are easily remembered. The Italians say "Keep a cool head, a light stomach, warm feet and forget about the doctor" while the Russians advocate the same, "Keep your head cool, your stomach empty and your feet warm" adding the philosophical rider "A good life makes a good death".

The importance of where you live is evoked by the following two Spanish sayings: "A draught from a window is as bad as a bolt from a cross-bow" and "Where the sun enters, the doctor does not".

Eat and Die

Many proverbs concern food, for example "A hundred will eat themselves to death before one man dies of hunger", "Gluttony kills more than the sword", "Whatever was the father of a

disease, and ill diet was the mother" and "More have been killed by suppers than Galen ever cured". Every sort of food, whether good or harmful, is mentioned—together with its virtues or vices. A Spanish proverb highlights the importance of clean drinking water: "Running water doesn't kill—stagnant water does", which contains a kernel of truth, but should not be taken too literally, though there is certainly less chance of running water being polluted.

"Prevention is better than cure" is a very old saying and expresses an idea that public health departments and WHO never tire of preaching. A humorous "epidemiological" proverb comes from the Spanish: "It is wise to flee the plague by three L's" a proverb which refers to the words "luego" —at once, "legos"—far away, "largo tiempo"—for a long time. A good idea if it works, but fleeing the plague undoubtedly also contributed to its spread. The saying probably dates from the 15th century when foul air was thought to be the cause of plague. The role of the flea was not suspected.

Illness on Horseback

"The doctor's art is to maintain health and cure disease." This saying from 12th-century Salerno still holds good today. Popular ideas on disease were given proverbial expression in many countries. One of the characteristics of diseases, noted by Russians and French alike, is the speed with which they attack: "Illness comes on horseback and leaves on foot." Sometimes of course it does not leave: "A pain in the side puts a cross on the hill", "A day of purge is a day for the graveyard"; these Italian and Spanish proverbs perhaps refer to the dangers of appendicitis and improper treatment, and can turn out to be true. Another prognosis, "A dry cough is the trumpeter of death", recalls the times when consumption was more conspicuous as a cause of death than it is today.

Diagnosis also can be expressed in a concise formula: "When the spleen gets big, the body gets thin", from the modern point of view one immediately thinks of an enlargement of the spleen caused by malaria. There are picturesque Chinese, Spanish and French proverbs relating to treatment of eye diseases: "If your eyes are sore and you touch them not, after ten days you will see a lot", "If you would heal your eye, your hands you must tie" and "You should never touch your eye but with your elbow".

The list of maxims, remedies and treatment methods for each disease is too long to be reproduced here, but the proverb "There are no illnesses, there are only ill people" highlights the importance of a character who is essential to the plot, namely the patient. In medicine much depends on the personal relationship between physician and patient. This is reflected in many proverbs. Some recommend complete confidence: "If the sick man hides his ill, the physician will try in vain to cure him." French proverbs express the same idea as the Russian: "Hide nothing from thy confessor, thy doctor or thy lawyer" and "If you want to recover you must tell your doctor all your ills"; an English proverb points out that "A disease known is half cured".

A Garden of Weeds

Other proverbs stress practical aspects and call for efficient remedies: "Kind words are not bad but a cure is better" and "A man of words but not of deeds is like a garden full of weeds". Nevertheless, morale is important and many proverbs have a distinct psychotherapeutic flavour: "For the sick man, the doctor's smiling face means good health" and "The physician is the minstrel of body and soul".

The sick talk a lot about their doctor, sometimes favourably, more often not, and proverbs contain much criticism and ridicule. As doctors are persons in authority,

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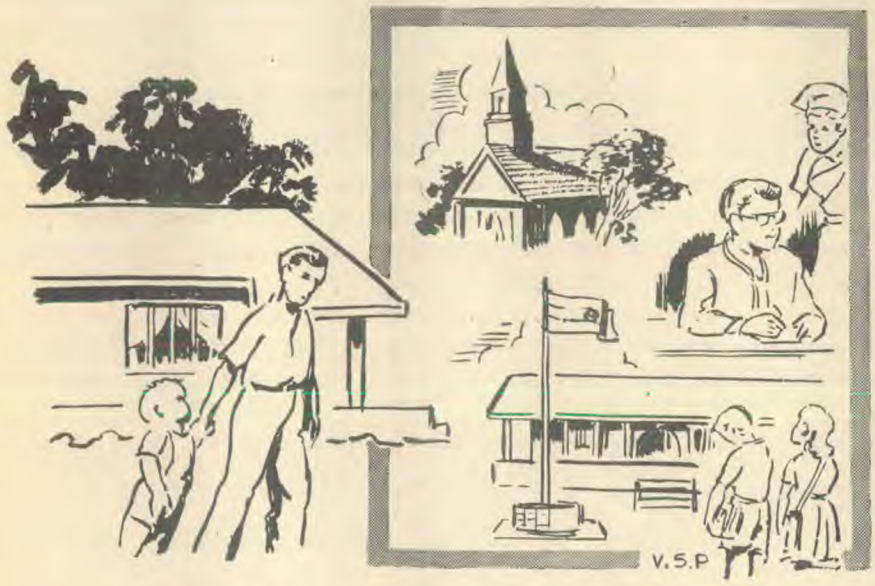
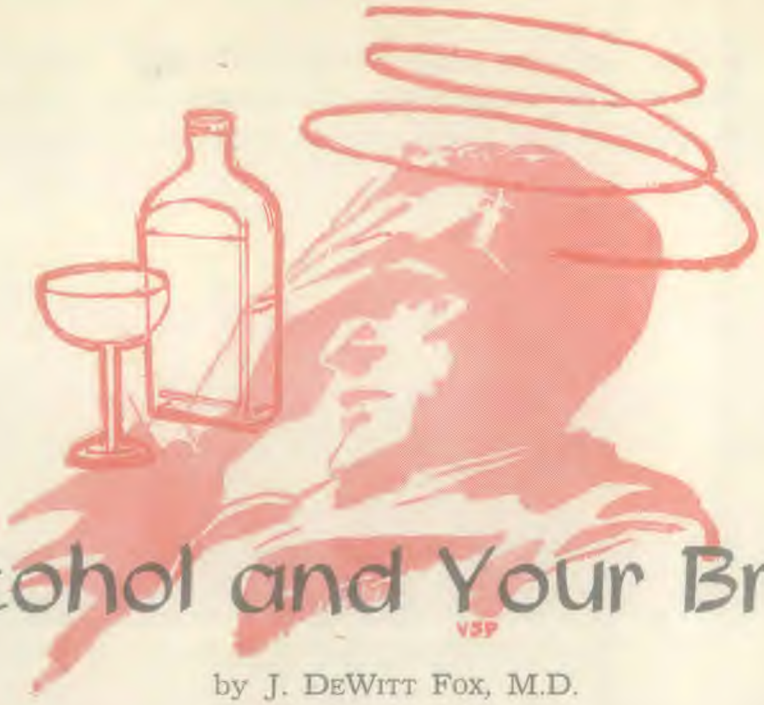


Don't live in a place where there is neither temple, school nor doctor."



Alcohol and Your Brain

by J. DeWitt Fox, M.D.

IF you are one of millions of social drinkers around the world, you may have wondered at times how alcohol works to produce its effect on the brain.

As the person who drinks beer, wine, or liquor becomes intoxicated and his speech slurs, what he does not realize is that the effect is caused by a shortage of oxygen to his brain cells. Like the aviator who may fly too high without his oxygen mask in place, he may feel exhilarated at first, then drowsy, and finally if he goes over 18,000 feet without oxygen he may die.

In the alcohol drinker this cycle turns over fast. The reason is that alcohol is highly soluble in water, passes rapidly through the mouth, over the tongue, and through the stomach. In a matter of one hour ninety per cent of the alcohol is absorbed into the blood stream and carried to every organ of the body, including the brain, which has a high water content and a rich blood supply.

New research shows how alcohol deprives the brain of oxygen. Prof. Melvin H. Knisely and his associates at the Medical University of South Carolina (U.S.A.) have long studied the phenomenon of blood sludging.

In the normal, healthy person the blood cells are little discs that carry oxygen and give it up to the tissues as they pass from arteries to arterioles and finally to the microscopic capillaries.

Some diseases, such as malaria, cause the red cells to stick together and sludge. As they pile up into a clump they may entirely plug a tiny capillary.

Alcohol, Dr. Knisely learned, can cause this sludging, as he detected in the eyes of human subjects. In animals he found sludged blood plugging capillaries in every organ studied. Sludging occurred in people who had drunk as little as one large glass of beer.

As the amount of alcohol in the blood increased, so did the number of sludged red cells. The rate of blood flow slowed accordingly. In blood levels high in alcohol the scientists observed an increasing number of fully plugged capillaries. At the highest alcoholic level, capillaries actually burst, and there were minute hæmorrhages in the eyes.

The scientists determined that alcohol affects the brain by depriving it of oxygen. A drinker who consumes enough alcohol to become stuporous suffers a number of small brain hæmorrhages and an even larger number of plugged capillaries. Around each of these plugs some of the brain cells die and minute infarcts [death of tissues] are formed.

Because the brain is incapable of regenerating its cells, any amount of brain substance lost in this way is destroyed forever. Normally you have more than 17 billion brain cells and you lose 50,000 of them every day under the usual conditions of natural atrophy. The destruction of a few thousand more cells occurs with each drinking bout. If this loss continues

year after year, millions of cells are destroyed, and the slow-witted poor judgment of the alcoholics appear. At autopsy the brain of the alcoholic is known to be shrunken and smaller than the normal brain, and this destruction apparently is the reason.

That a social drinker may knock out brain cells every time he drinks was the most shocking part of the information given by Dr. Knisely and his research team. Also shocking is the fact that the occasional drinker incurs some loss of brain cells every time he drinks. Worst of all, these cells are lost forever.

Cirrhosis of the liver, long known to be the disease of the alcoholic, is now more readily explained and understood, for the sludged blood plugging liver capillaries cuts off the blood supply to tiny areas of the liver. However, its cells are not so vital or irreplaceable as brain cells are.

The heart also may be affected by alcohol in an adverse way. Once prescribed by doctors for the heart patient to improve heart circulation, alcohol may actually damage heart muscle tissue by the same capillary-plugging method it evokes in the brain. Many heart doctors no longer advise that their patients drink alcohol, even moderately, as a way to improve heart circulation.

It becomes apparent that alcohol, which has long been condemned as an enemy to health by HERALD OF HEALTH magazine, soon will be decried by physicians everywhere.

Alcohol is a good antiseptic and bacteria killer, because it works as a protein precipitant. If it kills bacteria, it works even more devastatingly on delicate body cells, especially those of the brain.

When alcohol causes sludging of the blood, plugging of the capillaries, and death of tiny areas of vital tissue by either rupture of the capillaries or clumping and plugging, the resulting stoppage of blood and oxygen flow causes the brain tissues to die; the liver to suffer damage, atrophy, and later scarring (known as cirrhosis) ; and heart-muscle tissue to suffer damage.

To protect your brain, the most valuable asset you have, do not drink.

To keep your liver free from cirrhosis, do not drink.

To protect your heart from damage, do not drink.

Keep the welfare of your family in mind and teach your little ones to avoid alcohol. Also give them a good example by not drinking.

Alcohol was made to serve as a killer of bacteria and as a skin antiseptic, not as a destroyer of brain, liver, and heart in precious human beings, who should treasure their health.

The Horrible Thing

Sumathi Moses limped into my surgery, removed her shoe and pointed gravely at the the sole of her foot.

"There," she said, indicating a particular spot mid sole. "That's the horrible thing that has been driving me crazy this past month."

I went around to her side of the desk and took a closer look at "the Horrible Thing."

Diagnosis was not particularly difficult. As I pressed firmly onto the tender spot, Sumathi uttered a sharp yell. "Ouch . . ."

"You are the unfortunate owner of a plantar wart," I announced at the conclusion of my examination.

"Plantar wart... umph," grunted Sumathi. "Well, would you kindly remove the same. It is disturbing my equanimity of mind and peace of living."

"Certainly. Try this," and I proffered Sumathi a script which contained a concoction of podophyllin, linseed oil, and a few other unappetising ingredients. The basic idea is to try and stop those wart cells growing. Reverse the growing process, and the nasty little thing will ultimately die and disappear.

Unlike ordinary warts that grow out from skin surfaces on other parts of the body, plantar warts, being only on the soles of the feet, grow inwards.

And here we run into trouble. For some unaccountable reason this causes intense pain, particularly when pressure is applied. That means, every time you take a step, a burning, sharp pain seems to pierce through the sole of the foot.

Many treatments have been applied to plantar warts through the years. Some doctors prefer to cauterize them out right from the start. However, this frequently results in ever greater pain, and at times a recurrence soon after. Other doctors use tincture applications to start with, like the podophyllin preparation I gave Sumathi. As a starter, this is very often successful, and is virtually pain-free. ***

Pamper Your Ulcer and Live

Just as Ravi Pandit reached the emergency room he fainted again. His wife had brought him to the hospital. She got him there only after an argument, because he did not believe that a single episode of fainting at home was serious. He did not realize the connection between fainting and the black stools he had been having for three days.

At the hospital an emergency blood count showed dangerous blood loss. Mr. Pandit's hæmoglobin was down to four grammes per cent (normal is above fifteen grammes for men). The physician began transfusion immediately, gave oxygen, and alerted a surgeon. Emergency X-ray photographs confirmed the diagnosis of duodenal ulcer.

The bleeding continued, with stools at first black, then maroon, and finally a red that was only slightly darker than the blood the medical team members were pouring into Ravi's veins. His blood pressure (at shock level when he came in) failed to come up. He evidently was losing blood as fast as they could run it in. In desperation the surgeon elected to go ahead and try to tie off the bleeding artery. Just as the operation was starting, Ravi died. The surgeon never touched him with his knife. Ravi, only thirty-one years old, had waited too long.

Later Ravi's wife told the physician about supposed indigestion Ravi had complained about in recent months, how it had responded well to the antacids advertised in the newspapers and radio, and how she could not get him to see a doctor for an X-ray examination and adequate treatment.

Ulcer Can Kill

Tragedies such as Ravi's occur daily. Peptic ulcer is such a common disease that people forget an ulcer can kill.

1. If you have an ulcer, what can you do to avoid complications and avert a tragedy like Ravi's? The key to ulcer control is simply to pamper it.

As you may recall from the earlier discussion of ulcer, the pivotal mechanism in producing an ulcer is oversecretion of acid in the stomach. Logically, then, healing an ulcer can be accomplished only by overcoming the damaging effect of acid. The quickest way to arrest erosion by acid is to neutralize the acid.

Many substances neutralize acid, the best known of which is alkali, such as sodium bicarbonate (baking soda), found in everybody's kitchen. However, it is not the best material for neutralizing stomach acid, because sodium bicarbonate has only a short span of action. Furthermore, baking soda loads the body with sodium, which may cause œdema (swelling). This side effect may be dangerous in patients with heart disease, high blood pressure, or kidney disorders. Because sodium bicarbonate neutralizes

acid only briefly, there is usually a rebound, in which acid secretion by the stomach becomes greater than ever. A vicious circle is thus initiated—more acid, more soda, more acid.

The best neutralizers of stomach acid are modern long-acting compounds that actually absorb acid onto a chemical surface. Binding the acid in this way prevents it from eating away the delicate lining of the stomach and intestine.

The basic ingredient of such neutralizers is aluminium hydroxide. To it are added other alkaline agents such as magnesium carbonate. Various flavourings are put in to make the medicine taste good. These neutralizers are easily available on the market under a doctor's prescription.

To cope with excessive acid successfully you must remember that the best of antacids can truly and totally neutralize gastric acid for only about thirty minutes. After thirty minutes, there is gradual return of acidity. Therefore, treatment for an acute ulcer must be based on having the patient swallow acid-neutralizing material every thirty minutes. Usually this neutralizer consists of four ounces of milk every hour on the hour and a tablespoonful of antacid on the half hour. This regimen begins when the patient wakens in the morning and continues until he goes to sleep at night.

Prevention of Acid-formation

2. The second means for averting damage from stomach acid is to prevent acid formation in the first place. You may recall that the ulcer personality is one in which worry and tension send multiple stimuli down the vagus nerve to the stomach, causing outpouring of acid. Certain medications can block the vagus nerve, thereby cutting down gastric-acid secretion.

The oldest of these medications is belladonna, an extract of the deadly nightshade plant. Its name comes from the Latin words *bella* and *domina*, which mean "beautiful lady." This odd name for a flowering plant sprang from the fact that in the Middle Ages it was the fashion for girls to put drops of an extract of nightshade in their eyes, causing the pupils to dilate. Dilated pupils were considered a sign of great beauty. Because the young lady had blurred vision from the drops, she probably thought her suitors were good looking.

More modern medications that accomplish similar blocking of the vagus nerve are the anticholinergics. These drugs not only block the vagus nerve but also block other cholinergic nerves, such as those to the eye and to the urinary bladder.

Anticholinergic medicines have to be used carefully in glaucoma patients, because dilating the pupils may trigger a fast rise in pressure within the eyeball. Similarly, in a patient with an enlarged prostate, anticholinergics may cause temporary inability to empty the bladder.

Ordinarily belladonna or anticholinergics are given under doctor's supervision four times daily—before meals and a double dose at bedtime. This treatment plan effectively diminishes the amount of acid secreted by the stomach and promotes healing of the ulcer.

Mechanical Factors

3. The third principle in getting an ulcer to heal is to eliminate from the diet chemical and mechanical factors that directly irritate an open ulcer. The most obvious of these is alcohol. Alcohol is not only a caustic, irritating chemical (ask any man who applies aftershave lotion to his face) but also a powerful stimulant of gastric-acid secretion.

During the healing phase of an acute ulcer, eliminate alcohol. If a patient can give up alcohol entirely he will be far ahead of the game in healing his ulcer and keeping it healed.

Other notorious stimulants of gastric-acid secretions, such as the caffeine in coffee and the nicotine in cigarettes, should be avoided by anyone who is in earnest about getting his ulcer to heal (and who is not?).

Eliminating mechanical abrasion is easier to understand. It is clear that an ulcer would be scratched by foods high in roughage, such as radishes, cucumbers, celery, and cabbage. This principle holds true for any fresh fruits or vegetables containing fibres, skins, or seeds. Surprisingly few people know that tomato seeds are like little razor blades. The tiny yellow dots on strawberries are seeds with needle-sharp points.

The tossed salad has to go too. It has no place in

the diet of a patient with an active ulcer. Not only is the roughage in it dangerous but the dressing usually used contains vinegar (acetic acid), a potent stimulant to gastric-acid secretion. Spices and condiments (mustard, catsup, sauce, and pepper) are chemical irritants that can only make an ulcer bigger and deeper. For several centuries physicians who thought blisters had therapeutic effects, applied to the skin an extract of black pepper, known scientifically as cantharidin, to raise blisters. Use of blisters in treatment of many illnesses is still popular in some areas. Can you imagine the effect of a blistering chemical such as pepper applied to the raw surface of an ulcer?

As you review the diet for treatment of ulcer, you may conclude that ulcer patients should join a monastery. It seems that they have to forgo all the pleasures of the table.

This idea is far from true. Most gourmets will tell you that the finest tastes put in this wonderful world are those that are delicate and subtle. With most foods the lighter the seasoning the more keenly you can appreciate the delicate flavour of the food itself. Under a cloud of pepper, who can taste anything? Strong condiments overwhelm the taste buds. Salt is not eliminated from an ulcer diet.

Storm Signals

4. What about aspects of life aside from diet in the management of an ulcer? Unless you have an actually bleeding ulcer, you can do reasonable amounts of physical work. You should avoid stressful, frustrating occupations, which send storm signals along the vagus nerve to the stomach. There is no limit on recreational exercise. Such exercise is beneficial in that it helps you to relax. Relaxing is the key to long-term control of an ulcer.

5. It is not enough to get an ulcer healed. You usually can accomplish this aim in six weeks of a faithful programme of frequent feedings of bland foods, regular use of antacids, and anticholinergic medication. The real trick is to prevent recurrence of the ulcer. Doing so involves reforming your entire life style.

Most ulcer patients are surprised when I tell them that peptic ulcer is a lifelong disease. They have no trouble understanding that a patient with arrested tuberculosis has to be careful the rest of his life to prevent reactivation of his disease. The same thing is true of ulcer patients. They must be on guard against relapse as long as they live.

In some ulcer patients a seasonal pattern of flare-ups is evident. X-ray pictures show an open crater during these portions of the year. If you experience seasonal ulcer flare-ups, you can guard against them by resuming a bland diet, eating often and using antacids and anticholinergics on a small scale before the ulcer season arrives. Then, you will be on a preventive programme already.

If you do not have a seasonal pattern of ulcer reactivation, you should take similar precautions (diet, antacids, and anticholinergics) whenever stress threatens to open the old ulcer. Such stress can arise from almost any of the problems that flesh is heir to—family strife, job difficulty, financial reverses, and a whole host of emotional upsets. Everybody has problems. If you know what such problems can do to an ulcer, you can prepare for them and ward off the consequences.

If you learn to pamper your ulcer with a gentle diet and a relaxed manner of living, the rewards will surprise you. The ulcer will become only a memory. You will have learned to pamper yourself and live more safely and enjoyably. ***

The Doctor Advises

Crawling Failure

My nine-month-old son has not learned to crawl on his hands and knees. My mother thinks failing to crawl before he walks can damage him. What is your opinion?

My opinion is that some babies do various acts later than others. Your baby may have begun crawling shortly after you sent me the question. Usually most infants creep or crawl by nine or ten months of age. However, if a baby of mine did not mop up the floor before he walked, I would not be concerned.

I doubt that there would be any harmful effects to the baby. Certainly a baby stays much cleaner walking than crawling or creeping.

Lip-Sucking

I should like to know what to do for our four-year-old son who sucks his lip. He sucked his food for many months, but he has almost stopped doing that. He has been sucking his lip day and night for about four months. I am afraid he will have a deformed lip.

It is never wise to make an issue of such a situation. If you pay no attention to the habit, the child usually stops it before long. There is nothing a parent can do about it, and the child knows it. The more anxiety the parent shows, and the more desperate the effort to correct the habit, the more fixed it becomes. The entire home atmosphere tends to become charged with tension, and may ruin the peace of the home and have a bad effect on the child's nervous system, personality, and development. Simply be happy with your little son and do not worry about his habit. Ignore it and have fun with him.

Dizziness

How can I begin the day without feeling dizzy?

Dizziness on arising is likely to be of circulatory origin. A weak heart or hardening and narrowing of the blood vessels may be contributory causes. Centres in the brain, or the mechanism of the internal ear that has to do with the sense of balance, may be affected. Low blood sugar is a factor in some instances.

We suggest adequate rest and sleep. A warm, nutritious drink before rising might be helpful. Arouse from sleep slowly and lie awake, gently stretching for a short time before dressing. A light, nutritious breakfast may be an aid in combating this feeling.

Variables in Life Expectancy

My neighbour and I have been discussing the relationship of a person's habits and way of life to his life expectancy. He is somewhat of a fatalist and feels that the way a person lives has very little to do with the length of his life. He says, "When my time comes, that's it." Do you have any data on this relationship?

Physicians recognize that some persons age faster than others. One person may be "younger" at fifty than another is at forty. Part of this difference depends upon the degree of vitality and the amount of vigour that the person has inherited. But even more important, because it can be controlled, is how a person conserves or wastes his inherent vital energy.

Statistical studies have been made on the influence of various situations on human life expectancy. For example, the average person who lives in the country may expect to live five years longer than the average city dweller. A married person can look forward, statistically speaking, to a five-year longer life than one who is single, widowed, or divorced. A person who is twenty-five per cent overweight has a reduced life expectancy compared with one ideal weight. The average twenty cigarettes-a-day is destined to die seven years sooner than the average non-smoker, and the price for smoking forty cigarettes a day is a twelve-year handicap.

Lupus Erythematosus

Please tell me what you can about the disease lupus erythematosus. My mother died of it.

There are two kinds of lupus erythematosus—chronic and systemic. The chronic type is a benign condition affecting mainly the skin. It appears in patches that may be scaly. They are likely to appear on the face across the bridge of the nose or on other areas of the body. The

rash, beginning in one spot, tends to spread slowly. The disease is not serious, and patients do not die from the chronic type. Because exposure to sunlight aggravates the condition, sunshine should be avoided.

The second and more serious type of lupus erythematosus is systemic. It involves the small blood vessels and connective tissues of the body. Being a systemic disease, it may involve many of the organs of the body, such as the heart, kidneys, lymph nodes, and spleen. The skin is involved, as in the chronic type, and it may show some of the lesions. This disease is most common in young women, and it seems to be more common in recent years. It may be that it is being more readily diagnosed.

As in any systemic disease, many symptoms may be present, and they may not be the same in every patient. It is important not to think that simply because you have some of these symptoms you have lupus erythematosus. Some of the symptoms and findings in a typical illness include fever, progressive loss of health, commonly a skin rash with a typical butterfly lesion across the nose, possibly arthritis, and kidney disease and inflammation. Symptoms and signs from almost any organ of the body may be found.

There may be times of seeming improvement. The patient is likely to feel weak. The rash may cause slight itching. A butterfly-shaped rash may not be present but other abnormalities of the skin may be evident, such as undue redness of the palms and finger tips, pigmentation, and even bruising.

The diagnosis of lupus erythematosus is made by laboratory tests. The white blood count and the thrombocytes (blood platelets) are likely to be low. Urinary findings may resemble various kinds of kidney disease. The attending doctor knows the best treatment, which might include cortisone products for relief symptoms. The over-all prognosis is not good if there is a definite diagnosis of systemic lupus erythematosus.

The patient should remain in the care of his regular physician.

HEREDITY

From page 2

day shortens life by seven years on the average. Forty cigarettes a day involve a twelve-year handicap.

Heredity and Twins

Do twins run in families? I am acquainted with twin brothers who married and reared families. One family consists of parents and a pair of twins, a boy and a girl. Does such a case indicate that twinning is hereditary?

Here we are dealing with a question that does not have a simple answer. Twinning occurs more commonly in some races than in others, and this fact taken by itself supports the concept that twinning is heritable. On the other hand, the incidence of twins is about three times greater among mothers in the thirty-five to thirty-nine age bracket than in teen-age mothers. This observation taken alone favours an environmental influence.

There are two kinds of twins: identical, or monozygotic; and fraternal, or dizygotic. The identical twins are derived from a single egg cell (ovum), which after fertilization becomes separated into two groups of cells, each one of which develops into a complete individual. The fraternal twins come from two egg cells, which happened to become available for conception at the same time. In identical twins, the individuals are always of the same sex, because sex was established before the precursor cells had divided into two groups. Fraternal twins may be of the same or of the opposite sex, and actually are not more related to each other than are any siblings (brothers and sisters) in the same family.

In the case you cite it was not the father of the boy and girl twins (himself a twin) who was biologically responsible for twins coming into his family. It was his wife, who by happenstance produced two egg cells at the same time.

Most authorities in genetics believe that the production of identical twins is not directly determined by heredity, but it has been observed that fraternal twins occur with significant frequency in certain families. This fact has influenced geneticists to believe that the tendency to produce fraternal twins has a strong heredity component. Even in this latter instance such environmental factors as the age of the mother are superimposed on the inherited tendency.

Is left-handedness inherited?

Handedness, either right or left, depends on an inherited organizational pattern of the brain by which one side of the brain has a greater controlling influence over the body than the other does. When the left side of the brain is dominant, the person is right-handed. When the right side of the brain is dominant, the person is left-handed.

It is conceded that determination of brain dominance occurs at an earlier time in the infant's development than would permit him to choose for himself his hand of preference. Thus it is agreed that handedness is an inherited trait. Statistics bear out this fact by indicating that left-

handedness runs in some families and follows quite well the established laws of genetics.

It is interesting to note that about twenty per cent of one-year-old children are left-handed, whereas only about ten per cent of school children are left-handed. This fact is interpreted to mean that about half of the children who are inherently left-handed have been encouraged by their parents or teachers to hold their spoon or pencil in their right hand. This apparent change of handedness during early childhood does not affect the organization of the brain, and even in the case of a left-handed child who writes with his right hand it is still the right side of his brain that carries the controlling influence.

Re-education by which a naturally left-handed child learns to use his right hand places an extra hurdle in the child's learning process. Child psychologists and pædiatricians recommend that a naturally left-handed child be allowed to continue as a left-hand user. ***

MEDICAL PROVERBS

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with power over life or death, they arouse contradictory attitudes on the part of their patients who fear them, respect them, trust them completely, but also realize that doctors are often helpless.

Three elements are constantly turning up in the patient's opinion of his doctor: age, experience and luck. He does not like a doctor to be young: "A young doctor hunchbacks the cemetery" say the French, and the English add: "A new physician must have a new churchyard". A surgeon, however, must be young, with a sure hand and cold-blooded determination: "Pitiful surgeon spoileth sore". Experience is important: "Experience without learning is better than learning without experience" is a witty formula, complemented by the Arab proverb, "The only real doctor is the one with experience". The rights of empiricists are thus fully acknowledged. The whole of a doctor's life is spent in learning: "When a doctor dies he comes to the end of his apprenticeship". But the patient is suspicious of titles: just as "Good wine needs no bush" so "It is not the gown that makes the doctor", which refers to the furred gown and hood that doctors used to wear as a distinctive sign of their profession. Patients are particularly wary of ignorance: "An ignorant doctor will disarm nature" because often he will not let nature take its course; for the English, "Nature is the best physician".

Lucky or Learned?

But if experience is undoubtedly of value, luck can also be a trump card. "Meglio un medico fortunato che uno dotto"—"It's better to have a lucky doctor than a learned one", says the Italian proverb, and the English comment "Lucky men need no counsel".

Popular opinion, however, can at times be quite harsh. If, as Voltaire said, "A doctor is someone who pours drugs he barely knows into a body he knows even less", we could add that "The doctor is often more to be feared than the disease" and "The doctor cures the sickness but kills the patient". The following Spanish proverb questions the value of a three-cornered consultation: "One doctor cures, two discuss, three commit murder", which suggests the English "Doctors differ and patients die". "The learned assassins that parade as doctors . . . " is a frequent idea.

However, two Indian proverbs are reassuring to medical practitioners: "Don't live in a place where there is neither temple, school nor doctor" and "If you can't be king, be a doctor".

This rapid review is perhaps insufficient for a true appreciation of medical proverbs, but clearly they are of great historical, literary and scientific interest.

Summing up the medical knowledge of an epoch, these proverbs are neither simple figures of speech nor "sayings dragged out of the gutters of the market"—they are more than that. Many are the expressions of folk medicine that was not always ineffective, and their striking form is often not lacking in modern appeal. ***

—Courtesy of W. H. O.

ONIONS

From page 17

undergoing the same experiment, only with *boiled* onions. Throughout, blood samples were busily taken from all involved.

The result, according to one of the doctors involved, was the most unpleasant smell throughout the Royal Victoria Infirmary, and some extremely significant facts.

What normally happens when a person eats fatty foods is that the capacity of the blood to dissolve potential clots is reduced. A substance in the blood called fibrinogen is always likely to change into solid material called fibrin, and this fibrin is the finely meshed scaffolding on which blood clots build.

However, the blood of a healthy person is always able to dissolve this fibrin, and

thus stop the formation of clots, except when he eats a lot of fat.

The experiment by Dr. Menon and his colleagues in Newcastle showed, first of all, what everyone knew: that a large fatty breakfast significantly stopped that patients' blood dissolving the potentially dangerous fibrin.

It also showed that those who had eaten onions, boiled or fried, had an *increased* capacity to dissolve the fibrin. The onions had not only neutralized the baleful effect of the fatty diet, they had made their eaters less likely to suffer from blood clots.

When the specific ingredient in onions is discovered, and if it is proved conclusively that it prevents clots it may then be possible to swallow some odourless pill to encourage the clot-dissolving properties of the blood.

The research is still going on and no doubt, as in most medical matters, camps will form to credit or discredit the humble onion. Meanwhile, if you don't mind being a stinker, it's certain that onions won't do you any harm and it's more likely that they'll do you good.

Social life might become something of a problem; but, as a character remarks in Thornton Wilder's play, *The Matchmaker,* "People that's et onions is bad judges of who's et onions and who ain't." ***

Consider Carrots

by Louise Price Bell

Carrots are such common vegetables that many people ignore them except as a colourful addition to stew. This is where they make a big mistake, for besides being acknowledged by physicians as one of the best sources of vitamin A, a medium through which night blindness can be noticeably checked, carrots are good to eat.

Do not forget this golden-hued health-giving vegetable, and do not always cook it. It is true that tender carrots cooked in a small amount of water, well seasoned, and touched with margarine are delicious, but some of the vitamins are lost in cooking. There are so many ways to use carrots raw. Why waste the time, energy, and heat to cook them?

Scrub carrots of equal size, slice them with a vegetable slicer, and drop the bright strips into a bowl filled with chipped ice and water. Set it in your refrigerator for an hour or two, serve the curlicued crispies, and see how rapidly they disappear.

The next time you serve shredded cabbage for salad, shred a crisp raw carrot or two with the cabbage. It adds colour, vitamins, flavour, and verve to the salad. Grind an equal amount of crisp raw carrot and seedless white raisins, mix with your favourite salad dressing, and serve on crisp lettuce for a healthful and delicious salad that calls for repeat orders.

Make an orange gelatin base (or lemon, if you prefer, although you will not have so colourful a result), pour it into moulds until they are half full, and add enough finely grated raw carrot to fill them. This gelatin salad may be made with ground seedless raisins. When it is unmoulded and topped with mayonnaise and a spring of mint, it is colourful, particularly when served on a blue salad plate.

Crushed pineapple combines well with ground raw carrots, and when the two ingredients are used in equal proportions the salad is pretty enough for a party.

If you have never made a sandwich filling of equal parts raw carrots ground or grated and peanut butter moistened with enough salad dressing to make it spreadable, you have missed something. Spread it on whole-wheat bread, top it with tiny crisp lettuce leaves, and it makes a sandwich that is grand for school lunches and perfect for home consumption. It may become a family favourite to be used on a variety of occasions.

With garden-fresh carrots and onions, make a carrot-and-green-onion soup. Use your canned or frozen carrots for the same nourishing soup later in the season. To make it, heat three tablespoons margarine in a saucepan, add half a cup chopped onion, and simmer five minutes. Add three tablespoons flour, one and a half teaspoons salt, blend well, stir in five cups milk gradually, and cook until thickened, stirring constantly. Add one cup sieved or cubed carrots, and serve with crisp crackers. ***

Possible Benefits in Soft Contact Lenses

Eye experts do not agree on an unqualified endorsement of the new soft contact lenses, but two ophthalmologists recently pointed out potential advantages of the plastic products. Soft lenses, which must be treated differently from conventional contacts, are easier to insert and remove and more comfortable to wear for long periods, notes Dr. Sydney S. Deutch, assistant clinical professor at Boston University Medical School (U.S.A.). He also says that some eye conditions may benefit from use of soft lenses, including dry-eye syndromes, lime burns and bulbous keratitis, a condition involving swelling of the cornea and blisters.

Another ophthalmologist, Dr. Antonia R. Gasset of the University of Florida's College of Medicine, (U.S.A.) reports that some soft lenses have produced favourable results in erasing corneal irregularities and in treating corneal conditions needing protection. "Used as bandages, the most significant aspect of these corneas with scars and other irregularities without causing ulceration." Also the lens can take up medication and release it to the eye, providing a medicating effect over a long period.

—Today's Health

New Technique for Cancer Diagnosis

Considerable interest has been generated in medical and scientific circles by the report of a new technique for the early diagnosis of cancer, evolved by Dr. Chloe Tal of the Hadassah-Hebrew University Medical Centre. Dr. Tal found that a serologically distinct protein, which she calls T-globulin (Tumour-globulin), is present in the blood serum of cancer patients and pregnant women. When the test that she worked out is positive it can be concluded that the person tested, if not pregnant, is suffering from cancer. The placenta in pregnant women stimulates the production of T-globulin in the same way tumour cells do. "I suspect that all people are exposed all the time to cancerous cell mutations, but only a certain number get cancer," said Dr. Tal. "This, I believe, is due to an immunological response. The test shows when this response is not working satisfactorily, and T-globulin is found in the serum."

—Signs of the Times

Ways to A Longer Life?

Soviet gerontologists are working on various methods of prolonging life, including cultivation of adaptive mechanisms, application of vitamin and hormone therapy and replacement of organs. They claim, however, that the role of nervous and psychological factors cannot be underestimated. It is known that emotions such as fear or strong excitement can cause anxiety glycosuria (discharge of sugar in the urine). The relationship of prolonged grief, worry, frustration and other inhibitive emotions to the development of various diseases is now being studied. According to the scientists at the Institute of Gerontology of the U.S.S.R. Academy of Sciences, fifty per cent of all diseases occur from "psychic" reasons. Optimism and confidence in the future strengthens the health and adds a minimum of eight years to the human life, claim Soviet researchers.

—Science Digest

Chemicals May be Keys to Nerve Disorders

Nervous disorders such as multiple sclerosis, Tay-Sachs disease and Krabee disease may result from the body's failure to produce certain chemicals important in brain and nerve tissue, says Dr. Subhas C. Basu, assistant professor of chemistry, University of Notre Dame. Failure to produce these compounds, called gangliosides and cerebrosides, may result in the diseases. Now Dr. Basu plans to study whether enzymes responsible for synthesizing the important chemicals are missing from diseased brains.

—Today's Health

pure water for better life

IN the realm of good health nothing is more important than pure water. It is a choice blessing to man, one of his greatest necessities. Its proper use promotes good health.

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Applied externally, water helps to regulate the circulation of the blood. There is no better tonic than a cool or cold bath. Nothing can open the skin pores and thus aid in eliminating impurities more than a warm bath. Tepid baths relax the nerves and equalize the circulation.

Some people who have not experienced these benefits may be afraid of water. Such persons need to become acquainted with one of the greatest aids to real health. In many illnesses water treatments are effective in restoring the patient to health. There are many ways in which water can be applied to relieve pain and check disease. Thus, water is both a preventive of disease and an effective remedy for disease. It is virtually impossible to keep well if one cannot get water.

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