MARCH 1970

Herald of HEALTH

Food for Thought

by E. G. White

Our bodies are bulit up from the food we eat. There is a constant breaking down of the tissues of the body; every movement of every organ involves waste, and this waste is repaired from our food.

Those foods should be chosen that best supply the elements needed for building up the body. In this choice, appetite is not a safe guide. Through wrong habits of eating, the appetite has weakness instead of strength. We cannot safely be guided by the customs of society. The disease and suffering that everywhere prevail are largely due to popular errors in regard to diet.

Grains, fruits, nuts and vegetables constitute the diet chosen for us by our Creator. These foods, prepared in as simple and natural a manner as possible, are the most healthful and nourishing. They impart a strength, a power of endurance, and a vigour of intellect that are not afforded by a more complex and stimulating diet.

But not all foods wholesome in themselves are equally suited to our needs under all circumstances. Care should be taken in the selection of food. Our diet should be suited to the season, to the climate in which we live, and to the occupation we follow. Some foods that are adapted for use at one season or in one climate are not suited to another. God has given us an ample variety of healthful foods, and each person should choose from it the things that experience and sound judgment prove to be best suited to his own necessities.

Persons who have accustomed themselves to a rich, highly stimulating diet have an unnatural taste, and they cannot at once relish food that is plain and simple. It will take time for the taste to become natural and for the stomach to recover from the abuse it has suffered. But those who persevere in the use of wholesome food will, after a time, find it palatable.

CLIPPINGS and COMMENTS

London's famed Big Ben is tilting toward the Thames, but engineers believe the landmark at Westminister faces no immediate danger. The 316-foot tower has slipped only a few inches in the past 110 years.

✻

A pinhead size of material heated to the temperature of the sun's core—sixteen million degrees centigrade—would emit enough heat to kill a man 100 miles away.

✻

Deriving moisture from plants, the oryx, an African antelope, can go weeks or even months without drinking water.

✻

Lacking atmosphere, the moon feels the brunt of solar radiation, including deadly ultraviolet, X-rays, and gamma rays. Midday temperatures at the moon's equator are hotter than boiling water; with the coming of lunar night they plummet some 500 degrees Fahrenheit.

✻

The eighty or so pounds of moon rock that the Apollo astronauts brought back to earth are the most analyzed specimens since Adam found Eve. At least 144 scientists, spread all over the Western world, are subjecting the samples to every known test.

✻

Some 425,000 people die from cancer every year in India. Cancers inside the mouth, and of the voice-box and female genital organs are the types which most frequently cause death.

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Editor ..... THOMAS A. DAVIS
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ARTICLES

Food for Thought ..... *E. G. White* 2
Electric Nature of the Body ..... *Arthur Welkin* 4
The Healing Touch of Nature ... *Clifford R. Anderson, M.D.* 7
Muscles Matter ..... *A Physiotherapist* 9
Beauty is Eye-deep ..... *Vee Picton* 11
Medicine for the Soul ..... *J. D. Snider* 12
Keep Your Teeth ..... *Jean Wise* 14
Doctor, Do I Need Vitamins? ..... *John D. Rogers, M.D.* 16
Danger of Lack of Sleep ..... *Spectrum* 18
Arthritis ..... *Ellis L. Thompson, R.P.T.* 19
Habits for Health ..... *H. O. Swartout, M.D.* 25
Expose Your Child to Mumps ..... *Matilda Rose McLaren* 28
The Pancreas and Overweight ..... *J. DeWitt Fox, M.D.* 30
Life is a Training School ..... *E. G. White* 36

FEATURES

Clippings and Comments .. 3
Editorial 5
Your Radio Doctor 6
Notes on Nutrition 18
Little People 33
Medicine Today 35

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Electric Nature of the Body

by
Arthur Welkin

IN ROME DURING THE reign of Tiberius Cæsar a man named Antherio stepped on an electrified fish while walking along the sea-shore. The resulting electric shock was thought to have cured his gout. Many physicians of the Roman emperors used the shock from the torpedo fish to treat disease.

During the sixteenth century the physician William Gilbert coined the word *electric* from the Greek word meaning "amber." Gilbert used an amber rod to produce fractious electricity. Soon after that it was shown that electric sparks applied to the human body would cause muscles to contract. This procedure made it possible to research in kinesiology (the study of the principles of mechanics and anatomy in relation to human movement—muscle function) to determine the action of certain muscles by causing electrical contraction.

Since the discovery of electricity, man has learned that matter is electrical in nature and that practically all life processes are closely tied up with electrical changes. Absorption of material through living membranes, muscular activity, and function of the nerve cells of the brain involve electricity. Cells usually have an outside voltage of 0.1 volt more positive than inside voltage. This variation is due to unequal concentration of sodium and potassium ions on the two sides of the cell membrane.

Although the effect of electricity on man has been known for a long time, only in recent years has such knowledge been applied as treatment in illness. From recent experimental work we have learned that even though a nerve to a muscle has been cut, the rate of wasting that usually follows may be delayed by electrically stimulated contraction. Even many of the chemical changes that occur when mus-

To page 32

Editorial

GANDHI CENTENARY INTERNATIONAL CONFERENCE ON PROHIBITION

Among the many conferences New Delhi plays host to, perhaps none will be of more interest to our readers than the Gandhi Centenary International Conference on Prohibition which ended its five-day deliberations on January 30. Sponsored by the All-India Prohibition Council, the National Committee for Gandhi Centenary, the International Commission for the Prevention of Alcoholism, and the Indian Institute of Scientific Studies for the Prevention of Alcoholism, the conference drew national attention to the menace of alcohol to individual, national, and international welfare.

Inaugurating the conference, President V. V. Giri regretted that prohibition was being withdrawn or relaxed in many states. He hoped even in these states the last word has not been said yet. "We are looking forward," said the President, "for the day when complete prohibition will prevail in India." Wherever prohibition is not in full force, Mr. Giri suggested, "the closure of liquor shops on pay days, Sundays, and other holidays, and an increase in dry days in a week, gradually to pave the way for complete prohibition."

The conference agreed with the President and urged the Government to bring about total prohibition in the country within five years. The conference was of the opinion that education is not enough to bring about what Gandhiji termed "this great social reformation." Only through law can prohibition be enforced. To aid this enforcement, education is essential. When law and education cooperate effectively, the growing menace of intoxicating drinks can be checked.

Among the many resolutions passed unanimously by the conference four stand out for their far reaching implications:

(1) The conference requested the government to amend the election laws to make candidates take an oath of allegiance not only to the constitution but also to the principles contained in it, particularly concerning prohibition. The conference called upon all political parties to select only those condidates for election "who are prepared to sign a declaration of their faith in and observance of complete prohibition as envisaged in the Directive Principles of State Policy in the Constitution of India."

(2) The conference appealed to the government to issue a directive to insurance companies to introduce life, accident, and motor insurance policies with lower rates of premimum for non-drinkers as the risk involved in them is far less than the risk involved in drinkers.

(3) The conference also recommended to the government and educatianal bodies to introduce in schools and colleges suitable courses that deal with the dangerous effect of alcohol on the human body and mind.

(4) Finally, the conference urged the Government of India and the governments of other countries to introduce items of educative and informative propaganda pointing out the menace of the drink and drug evil through their mass media of communication and information and to enact laws to ban publication of advertisements and display of posters calculated to encourage drinking of liquor.

With such laubable resolutions, passed unanimously, the conference ended its work. But the questions we must all face in the interest of our health and for the betterment of the nation is: Can we afford the luxury of alcohol?

In a country struggling to overcome poverty, hunger, and disease, is it not a necessity that we have honest workers who are sober and whose mental and physical faculties are at their best, unimpaired by alcohol? In a country where liquor has swallowed up much of the advancement of the past twenty years, leaving the kisan and the labourer in miserable poverty, should we allow the temptation of excise revenue to rule the day and thus make the government a partner in the impoverishment of the people? In a country where more than three fourths of the population are undernourished and malnourished, should alcohol be permitted to erode the little physical vitality they have?

The answer is in no doubt. But the answer must be given firmly by voice and vote by the silent majority of over eighty per cent of the population who do not drink. India is the only country where prohibition can succeed. India can make history. "Nothing but ruin," said Gandhiji, "stares a nation in the face that is a prey to the drink habit."

—J. M. F.

The Healing

by Clifford R. Anderson
"YOUR RADIO DOCTOR"

The medical lecture had just ended. But still the group of doctors lingered around the conference table. No one seemed anxious to leave. They had been discussing a remarkable operation that had just been performed on a patient whose heart had been badly damaged by disease. Then the discussion turned to other medical conditions, and someone asked about divine healing. Several opinions were expressed, but no one seemed to have a very good answer.

Over on one side of the room, quietly listening to the discussion, sat an experienced pathologist. He smiled as some of the younger doctors began to express their various opinions. Then in a quiet voice he asked, "Is there any other healing than divine healing?" After a short pause he turned to one of the surgeons and said, "You know, Ted, you surgeons cut into people's bodies almost without thinking. It is so commonplace for you. And yet, how do you *know* those tissues will heal? And what makes them heal? Nothing that any of *us* can do, that's certain. All we can do is to bring the cut edges of the wound together, and then let Nature do the rest. What is that but divine healing?"

Touch of Nature

A quiet hush fell over the group. It was a new thought to many of them. The other doctor paused as he watched their expressions. Then he spoke again.

"You know, I believe that the healing of a wound is one of the truly-great miracles of Nature. I never cease to marvel at what I see going on under the microscope. We all take these things so much for granted. Yet the miracle of healing is taking place every day in every hospital, around the whole wide world. Some wounds heal quickly, others more slowly. But to me *every healing wound is a miracle*. And every scar marks the spot where the forces of life have won a victory over the forces of disease and death."

It was a quiet, thoughtful group that left the conference room that day. Some of them were thinking about that operation on that patient's heart. Once again they marvelled at the healing power of Nature, even though they were accustomed to seeing these things every day in their work. Was there anything more dramatic than opening that patient's chest, and watching the lungs filling and emptying rhythmically, providing the patient with that all-important life-giving oxygen? And then as the lungs were drawn aside, there was the heart beating within the pericardial sac, pumping the blood stream to all parts of the patient's body.

Several of them had assisted at the operation as the highly trained surgeon had opened the left auricle and freed the adhesions that were hampering the most important valve of the heart. Over on an instrument near the wall they had watched the tracing of the electric currents that were being generated in that heart while the operation was in progress. And then, when the operation was completed and all the tissues had been drawn back into the place again, they had sent the patient back to bed to recover. They had done their best. They could do no more. Now they must let Nature take over and heal the tissues. Many wonderful operations are being performed today, but they would be useless and impossible were it not for the co-operation of myraids of tiny living cells within the human body.

Healing Severed Nerve

The healing touch of Nature is truly wonderful. Let us imagine that you have gashed your arm, and that some large nerve trunk has been severed. From that point all the way down to your fingers those nerve fibres will die. Now the muscles they serve are no longer able to operate, and there may be no sensation in the skin of your fingers. Will it remain like this? Not for long. Very soon after the injury those nerve fibres *above* the cut will begin to grow again, even though they may have shown no sign of growth for many years. Under some mysterious impulse each of those severed nerve fibres now begins to reach out once again toward the place where once it served. Obstacles may obstruct its way, yet it will continue on its course if at all possible. Other kinds of scar tissue cells may be busy repairing the damage at the site of the injury. Between these other cells the tiny nerve fibres will carefully thread their way, never uniting with any of them.

Once past the obstruction, the young nerve fibres press on rapidly until at last they reach the spot where the old cells lie dead. Then tunnelling along through the old nerve trunk they finally arrive at the spot where the muscle cells lie paralyzed. There they quickly establish contact, and soon the wasted muscle cells begin to recover. The regeneration of a damaged nerve trunk may take weeks or months, but it is truly a miracle. The human body is full of remarkable things just like that.

The repair of injured tissue can be observed all through the animal and vegetable kingdoms. The

process is similar in all forms of life. Trees, plants, and flowers are all built up from living cells. When they are injured they repair the damage by putting forth new cells. These cells spring from the site of the injury. They fill the wound, and protect the plant from further loss. The same thing can be observed in every species of animal. For instance, if you should cut off the head of an earthworm, that worm will actually grow a new head! But in the higher forms of life the process of repair is not quite so complete.

Repairing a Serious Injury

Why is it that cells that may have been dormant for years will suddenly take on new growth when the need arises? There is no adequate explanation to this phenomenon, except what the ancient philosophers called "the healing power of Nature." Supposing you cut your finger. What happens? Almost instantly the blood pours out and washes the wound clean. Then after a short time the blood clots and seals off any further loss. This is only a beginning. Within a few hours all the connective tissue cells in the vicinity of the wound will begin to multiply and repair the damage. The tiny blood vessels that have been severed will soon grow into the wound, providing nutriment and building materials for the cells that are busy repairing the damage.

And here is something else that is very remarkable. If a wound is absolutely sterile, if there are no bacteria present, it may never heal. But if a few staphylococcus germs are introduced, healing will commence within a very short time. Now the body's defensive forces are alerted, and the process of repair becomes rapid. The connective tissue cells from each side of the wound will begin to reach over and make contact with those of the other side. Soon the tiny fibroblasts will bridge the gap, sewing the edges of the wound together, so that in a few days all that can be seen is a thin line of scar-tissue. When the repair has been completed the cells no longer grow and multiply. They settle down to a normal, quiet, existence, and life goes on just as before.

"... but to me every healing wound

In the presence of infection, the body's first line of defence is formed by the white blood cells. They go into action very rapidly. Poisons from a wound may find their way into the blood stream. Before long they will reach the bone marrow. Almost immediately large numbers of tiny white blood cells will begin moving out from the bone marrow and along the blood vessels to the site of the injury. There they quickly surround the germs and begin to devour them. Once inside the white cells, the germs are completely dissolved by a powerful digestive ferment produced by the cells. The more the germs multiply in the wound, the more rapidly the white blood cells pour out from the bone marrow to do battle with the invaders.

In certain types of infection large numbers of these leucocytes, or white blood cells, may be killed by the poisons that are carried by the germ. Yet even in their death these tiny white blood cells still serve the body. As they die they break up and release powerful chemicals that dissolve out the dead tissues and hasten healing.

In the blood stream there are many other substances besides the red and white blood cells. All of these play their part in repairing the body and keeping it healthy. One of these substances is known as fibrinogen. In the blood it is in a liquid state. But when it is exposed to the air it turns into tiny threads of fibrin. As the blood clots in the wound, these threads of fibrin bridge across the gap, and prepare a suitable battle ground on which the white cells can fight the infection and heal the wound. How can anyone ever really think that all this "just happened"? There is nothing accidental about it. Only an all-wise Creator could have designed such a remarkable system. Nothing is left to chance. Every detail of the human body is perfect.

Healing a Broken Bone

Nowhere is this better illustrated than in the healing of a broken bone. Immediately after a fracture the broken ends of the bone will begin to bleed. As the blood clots, the tiny threads of fibrin begin to bridge across the gap. Soon the bone cells go into action. They do not seem to work as individuals, but rather in teams, producing new bone. Under a powerful microscope this remarkable process has been filmed and projected upon a screen. Fine chalky spicules of bone may be seen, moving across the screen, just as if builders were raising scaffold-poles for a new building. Cells that have been dormant for years now go into what has been called "a riot of activity."

Yet there is nothing haphazard about what is taking place. It is always an orderly process. And when the ends of the bone have been joined together the activity stops just as mysteriously as it started. This is the healing touch of nature and of God. It is all too wonderful for us to comprehend fully.

Yes, I know there are some philosophers who try to explain away these mysteries as "natural causes," whatever that vague term may mean. Such terms are only used to cover our ignorance. They have no real meaning. Voltaire, who despised the religious dogmatism of his age, was equally perplexed over the tendency of those around him who indulged in this same shallow type of thinking. Picking up his watch, he turned to one critic and said, "This world embarrasses me. I cannot think that this watch exists, and yet has *no watchmaker.*"

Nor can I for one moment think that this marvellous human body, with all its endless physical, chemical, and electrical reactions, came into being by some mere chance. There is nothing accidental in the way those tiny white blood cells will move in and devour the germs that would destroy my life, nor in the mysterious way the tiny fibroblasts will sew together the edges of a wound, nor in the way those microscopic osteoblasts will knit together the fragments of a broken bone.

To the careful observer, everything in life has a purpose. We may not always know the reason. But the more we study the human body the more convinced we become that the whole universe is but the expression of the mind of God. Disharmony and disease have invaded the world in which we live, and all of us have been vitally affected. Some have been weakened through illness. Others may have lost all hope, because of some deep sorrow. With some of us the trouble is in the body. With others it may be in the mind. And with many others both mind and body may be involved. But whatever the cause, we can all look up and smile through our weaknesses and our tears.

We have no reason to fear. Whatever our affliction, all we need is complete faith in the healing power of God. His power is there, within our reach, just waiting to be tapped. The boundless resources of the universe are ours for the asking. He who guides the mighty stars and suns and planets on their courses through the heavens has made provision for the healing of every disease that afflicts the human body. All we need is to learn how to live in harmony with the laws of the universe, so that these marvellous miracles of healing may be ours now and through all the days to come.

is a miracle . . . "

Muscles Matter

By A Physiotherapist

These days almost everyone knows about the importance of diet and exercise in maintaining good health. People may interpret information in the wrong way—but they know. They read about it, they hear about it, they talk about it. Misconceptions arise, frequently over exercise: How much? What kind? Does it slim? These questions generally refer to sport or set exercises done at a particular time. Exercise is defined as exertion of muscles. We use the term to denote activity. But when a muscle contracts it is exerting itself and it can do this when the body is apparently at rest.

In order to maintain a healthy state of tone, a muscle must do work. A particular muscle may work when you play a set of tennis; it depends on whether it is used in the movement you make. It will work if you consciously tighten it. In tightening a muscle or group of muscles, you do not necessarily move the

position of a joint. You can tighten your musles silently, unseen, without anybody knowing you are doing it. Certain muscles need tightening frequently to support internal organs, to pump on sluggish blood flow or to prevent joints from becoming overstrained.

Children are supple and active. They enjoy using their muscles. They do all sorts of extraordinary things ensuring the use of all of them. There is no need in normal children for muscle awareness. They are sublimely unaware. As you get older, you sit more. Sitting may be essential to your job. Perhaps sport does not fit into the schedule. Then sit and exercise! Become aware of your muscles. The busiest executive has time to tighten a muscle between or even during phone calls. After a while it becomes as automatic as scratching your ear or rubbing your chin.

Wiggle Your Toes

Let us see what selective muscle tightening can do. Let us begin with the feet. Parents nowadays start children off with the right idea—broad-toed shoes, bare-foot or thonged in summer. Having produced a foot as spread and mobile as a native's, the parents now watch the shoe manufacturers proceed to deform it from the teens upwards, cramping it into A and B "fashion" fittings. "Oh, no, Madam," says a shocked attendant, "we don't stock fashion shoes in a C fitting!"

Tight shoes lead to bunions or a flat transverse arch under the base of the toes, nipping the nerves with every agonizing step you take, and in either case making you an eventual candidate for the surgeon. However, some of the effects can be warded off not only by getting the right shoes, but by tightening the little muscles supporting the arch of the foot. These muscles become practically paralysed by shoes.

Watch a child wiggle his toes and see how far you have retrogressed. Now try this. Press your toes into the ground and make a cave under the base of the toes, but do not curl toes under. It may be a month before you can do it! Eventually it can be done quite effectively in shoes. I do it automatically if I am feeling impatient.

Muscles get dreadfully flabby if they are not used, and this can happen almost overnight. A trivial knee injury can result in a wasted thigh muscle in a few weeks from saving the leg, and this can lead to an unstable knee joint. Learn to tighten your thigh muscle to protect your joint. It keeps those thighs shapely too!

Elderly people would be less prone to bedsores if they had made it a habit to tighten their buttock muscles, providing themselves for a little longer with an inbuilt cushion to sit on. And what about the fifties to sixties whose triceps, the muscles at the back of the upper arm, hang limply away from the bone? Not very attractive.

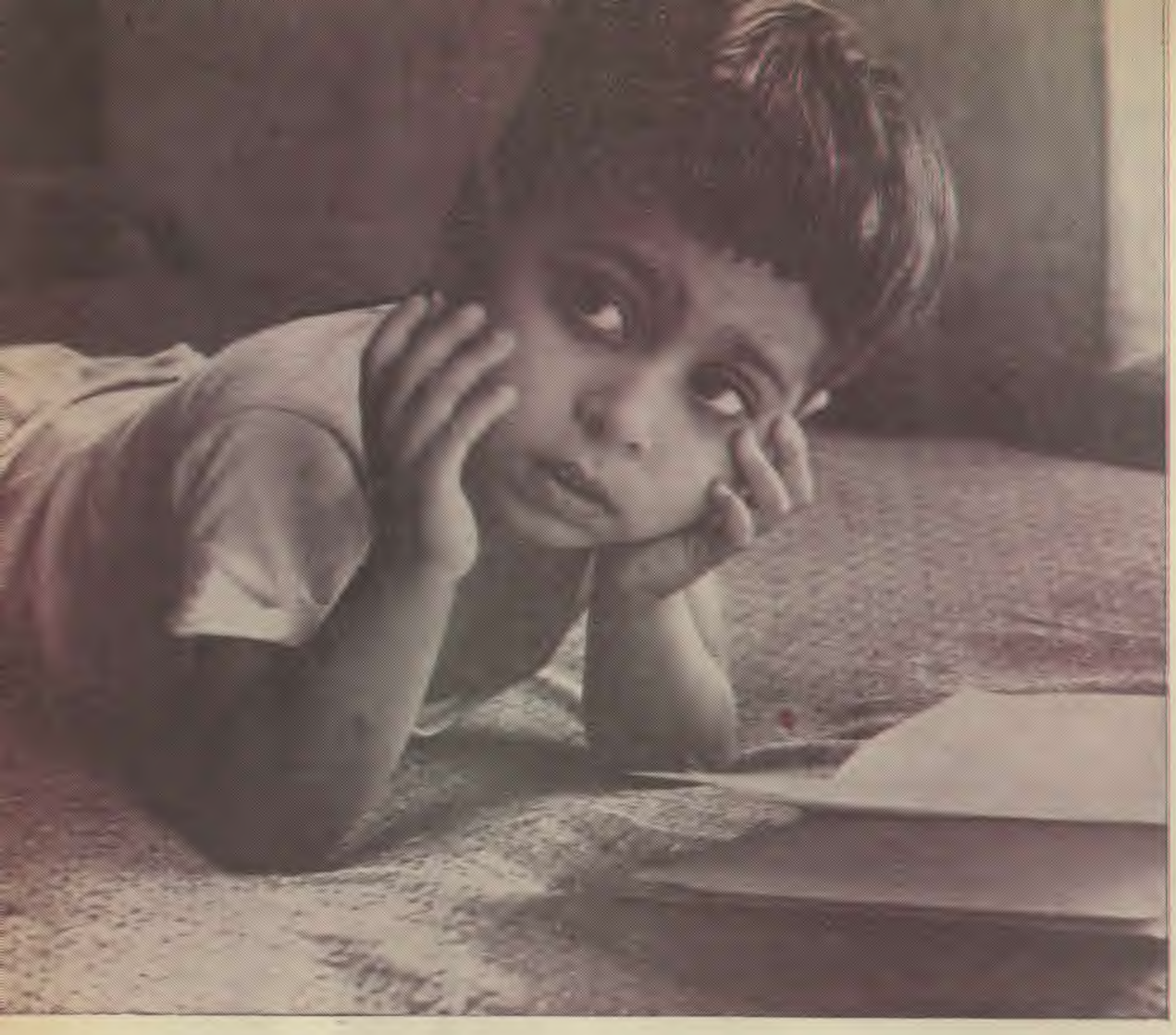
Especially for Women

Women should tighten the pelvic floor, that muscular sling which prevents the pelvic organs from prolapsing. Weakened in childbirth, it often never recovers. How many women trail round with a sinking feeling in the lower abdomen which a little consistent effort could overcome. The encouraging thing about muscles is that they can and do recuperate, even if they have been long neglected and have reached a very low ebb. Providing the nerve supply is intact, the muscle will tighten when you tell it to. The more often it is tightened, the healthier it becomes. But avoid tiring the muscles in the early stages, and always relax fully between each contraction. The response may be feeble to begin with, but gradually it will improve until it is responding as promptly and as strongly as if you were half the age you are.

People with good muscle tone have a spring in their step. Their bodies store hidden energy. They do not sag. Notice the flat abdomen and trim waist of a girl or young man. You can have almost the same at seventeen or seventy. All that is needed is regular tightening of the abdominal muscles, pulling the tummy in, endeavouring to make it flat and tightening the waistline. There is no miracle cure for the sagging flesh that you try to stuff into some glamorous foundation garment. Try one hundred pull-ins a day for six months. Success is measured in direct proportion to effort.

For specific muscle improvement, or where there is definite damage, it would be advisable to consult a specialist. Still, if you tighten up your arches, your thighs, buttocks and abdomen, you may not know what you are avoiding, but you will feel better and look younger. As you get to know your muscles, add the calves, the pumps that send the blood in the veins uphill, tighten them to their fullest extent and then relax; the triceps, pushing against a wall till the muscle feels hard; the shoulder girdle muscles, pulling the muscles back till the shoulder blades practically touch. Once you show your lazy muscles how to work they will soon enjoy working for you as they did in childhood.

Most muscle contractions can be done without making yourself conspicuous. Fill in those spare minutes while you are waiting for the lights to change, listening to your neighbours across the fence, waiting for the shop clerk to serve you, or just simply sitting.



By Vee Picton

BEAUTY IS EYE-DEEP

THERE IS NO EASIER METHOD OF JUDGing general good health and vitality than through bright clear eyes. Considering they are one of our most precious possessions, it is amazing how casually we tend to treat them.

Eyen are "the mirrors of our souls," so it has been said. They show others how we really feel, even when we try hard to pretend otherwise. Mirthful eyes, sad eyes, flashing angry ones. They are capable of expressing every kind of emotion. Some people even "talk with their eyes."

Eyes can be compared in some ways to a camera. When lens (our eyes) develop an inability to focus correctly, this causes short- or long-sightedness. The defect in the lens is then adjusted by wearing glasses. As we grow older it is quite common to discover that when we read small print we see it clearly only at arm's length. This is quite a natural procedure, and no cause for alarm. In fact, even with perfect vision, when one reaches the age of about forty, it is sensible to have an eye test every two years or so.

Whatever your age, try never to become too demanding where your eyes are concerned. If you do

To page 22

medicine for the soul

by J. D. Snider

THE GREEKS WROTE AN INSCRIPtion over the door of the library at Thebes which said that books are medicine for the soul. The Latins called them a delight of the mind. Frederick Faber, famed English religious philosopher, declared that "booklove has broadened many a narrow soul, many a close, stifled, unwindowned heart has it filled with mountain air and sunshine, thus making room for God and man where there was no room before."

One of our modern legends tells of the visit to America of a Chinese philosopher who puzzled his New York guide when he halted their mad rush to see all the city's sights in one day to ask politely, "What do you do with the minute you save running up an escalator?"

Neither the guide nor millions of his fellow men have ever bothered to reason out an answer to that question. On every side we see people rushing from one thing to another, seemingly without time enough to do all the things thy want to do and still be on time for the next thing.

If in this busy, bustling age you sometimes find your heart a little weary of life—things look small and not worth living for and you think your lot is harder than you deserve—try snatching a vitamin or two from a favourite volume in the field of cultural and spiritual literature. It will take the grey clouds away, and leave a blue sky over your head for days and weeks on end.

You may be having a pretty hard time of it, but a sympathetic author will help you to realize that life is sweet and well enough living. "Good books," wrote Horace Mann, "are to the mind what the warming sun and the refreshing rain of spring are to seeds which have lain dormant in the frosts of winter. They are more, for they may save from that which is worse than death, as well as bless that which is better than life."

Of course it is economical to be informed, and financially wise—knowledge gets bread and butter! But while earning your bread it is a good thing once in a while "to loaf and invite the soul."

When our bodies are weary, our spirits are low, and we feel sick of life in general, the right book is good medicine and usually a sure cure for the worst case of blues. For books lure us away from ourselves and the tasks we are everlastingly at. When reading

"Booklove has broadened many a narrow soul; many a close, stifled, unwindowed heart has it filled with mountain air and sunshine, thus making room for God and man where there was no room before."

them becomes a delight the compulsion of the schoolmaster is all taken away from the situation. It is no longer a task, but a coveted privilege.

We learn to read books joyously just as we visit with our best friends. They become a delightful lure when we are weary and heavy laden. Especially is this true of our bedside books, those volumes that are a "little torn and dog's eared." Their soiled pages and worn-out appearance tell of the thousand times we have turned over their leaves with delight.

One can no more explain this love of books than he can explain the love of babies, but the book-lover loves his books as he loves his friends. We cannot say that books exactly return our love, but they certainly never cause us pain by slighting it, as our friends and sweethearts sometimes do. Some affections are so strong that they cannot be plucked from the heart where they have lived, although they may serve only to torture and to torment. The book-lover does not suffer this bitterness of an unrequited affection.

"Except a living man," said Charles Kingsley, "there is nothing more wonderful than a book—a message from the dead—from human souls whom we never saw, who lived, perhaps, thousands of miles away, and yet these, on little sheets of paper, speak to us, amuse, vivify us, teach us, comfort us, open their hearts to us as brothers." The great dead who lived centuries ago are beyond our physical reach, and the great living are usually almost as inaccessible, but through their books we can converse with them and look into their innermost hearts.

George Barr McCutcheon's bookplate bore these lovely words: "Books Once Were Men." Because they sometimes seems so alive, we almost feel that they still are men. An author's thoughts are kept alive in books to perpetuate his personality. Through books they enjoy a kind of immortality that keeps them in existence for thousands of years. The very language in which they were conceived may die, but the thoughts themselves triumph over bronze and marble.

An author becomes a book. And what better metamorphosis could he desire? Outside his book he is but clay. In his book he rises as it were from the grave and walks side by side with us through life, talking to us from the page his thoughts were breathed on. His living words run like laughing water from the fountain of his heart, revealing the spaciousness of the soul within him.

How quiet, how modest, he is—as unobstrusive as the falling of the gloaming, with its gentle lights and many wandering winds. He smites the wrong, but loves the right. He knows the struggles we must pass through to discover ourselves, and he knows how to help us when we are wrestling with life's greatest problems. He whispers of things that fire our cheeks and stir our heart with hope. Through few may have cared to hear his spoken words, millions listen intently for the beating of his heart through the printed page.

"Nine cities claim him dead, Through which the living Homer begged his bread."

In one sense the companionship of books is preferable even to that of personal friends. In the book world we do not have to decide beforehand what friend we shall invite to spend the evening with us. When we sit down by the evening lamp for an hour's companionship, we can give our invitation according to our whim.

If we invite a book friend, only to find that we are not in the mood to have him talk to us, we can shut him up without hurting his feelings, and immediately invite another. We merely put up our hand to him, and he comes down from his place on the shelf and begins to talk to us. Moreover, our friends at times may talk on some subject we do not know too much about, or talk on when we may want to reflect on what has already been said. A good book never treats us so. A silly, cheap, or feeble book we can lay down. And at bedtime if *To page 34*

KEEP YOUR Teeth

by Jean Wise

MOUTH HYGIENE accomplishes mouth cleanliness, and it restricts dental decay and other mouth diseases. When people use good mouth-hygiene measures their general health benefits. Because through the mouth food is introduced into the body for all nutrition, it is important that the mouth be kept in condition.

Unless teeth in good condition and in the proper number are present, there is strain on other organs of the body, with the final result of possibly causing ulcers and other diseases of the digestive system.

Clean healthy teeth give a person confidence in his appearance. Some important reasons why he should practice good oral (mouth) hygiene are that pain, time lost from work, and dental expense will be greatly reduced. To guarantee sound oral health, practise good oral hygiene faithfully three times daily, not on a hit-or-miss basis or after pain indicates serious trouble. As well as brushing the teeth three times a day, a dental examination twice a year is a fairly sure way to discover early mouth disease, including tooth cavities. Because many people have crooked teeth, they find it difficult to keep the crowded areas clean and healthy. The dentist checks such areas to be sure they are sound and in good condition.

Parents should begin taking their children to the dentist soon after the second birthday. Children can be taught the importance of caring for their teeth before there is painful dental damage and before they form wrong dental habits. By early examination the dentist can learn whether the children's teeth are growing out properly. If guidance is necessary for teeth coming in crooked, it can be accomplished before the teeth have become stabilized in a wrong position.

Most people clean their teeth in some manner, but many fail to

realize that the gums (gingiva) need to be stimulated. It is lack of gum stimulation that leads to disease of the supporting tissues of the teeth.

Because most people fail to brush the gums properly, the importance of visiting a dentist regularly cannot be overemphasized. During chewing of food, many particles become trapped in the shallow groove between gums and teeth. Soon the food particles collect bacteria and form a cement-like deposit (calculus) around each tooth. Only a dentist or a dental hygienist can remove this calculus.

Improper gum stimulation and deposits of calculus are the main causes of irritation, inflamed gums, and loss of dental bone with later loss of dental fibres that connect gums to jawbone. It has been believed that teeth usually are lost because of dental caries (decay), but the fact is that as many as eighty per cent of all teeth lost are extracted because of gum disease, rather than dental caries.

There are many brushing techniques for cleansing the teeth. The cross stroke, or up-and-down movement, although most common, is not acceptable. Its disadvantages are that food particles are not removed from the gum margin or between the teeth, grooves are worn in the teeth, and the gums between the teeth become rounded and blunt, instead of remaining pointed and tightly fitting. In the healthy mouth the gums fill the spaces between the teeth with a sharp, knifelike point.

A second tooth-brushing method to be avoided is the circular stroke. The main disadvantage is that it forces food particles under the gums. Also, it tends to force the gums on the upper arch above the normal level, progressively exposing the roots of the teeth.

The press-and-roll method is believed to be best for most people to prevent calculus formation on the teeth. This method involves two motions:

1. The side of the bristles of the toothbrush are placed against the gum tissue with the points of the brush facing upward on the upper arch, downward on the lower arch, and enough force is applied with the brush in this position to whiten the gums temporarily.

2. By rolling the toothbrush toward the teeth and brushing toward the chewing surfaces, the bristles are moved firmly lengthwise over the tooth surfaces. The rolling stroke should be used ten times in each area before the brush is moved to another position in the mouth. The outer and inner surfaces of the teeth should be brushed in this manner. It is a good idea to watch in the mirror to be sure that all areas of the mouth are properly brushed.

The advantages of this stroke are that the gums are massaged while the food particles are pressed from beneath them and from between the teeth, leaving the gums between the teeth pointed and healthy.

3. The occlusal (chewing) surfaces of both upper and lower arches need to be brushed. These surfaces contain many grooves where food is easily trapped. The bristles should be scrubbed back and forth across the surfaces to dislodge any particles that may be packed into the pits and grooves.

A firm natural-bristle two-row is preferable for most people. The natural bristles are preferred to the synthetic bristles because they are more flexible and do a superior job of massaging and stimulating gum tissue besides cleansing and polishing the teeth. Nylon bristles become sharper with use, and they may irritate the tissues instead of stimulating them.

Because each person's mouth is different, it is wise to ask the family dentist which kind of toothbrush he recommends. After each brushing, the toothbrush should be thoroughly rinsed under running water to remove food particles and toothpaste. The natural-bristle brush should be allowed to dry for twenty-four hours; otherwise it loses its firmness within a week and thereby loses its efficiency in cleaning and stimulating the gums. It is difficult for microorganisms (germs) to survive in a clean, dry brush. It is wise to have several brushes with different coloured handles for easy identification and to use them alternately to allow time for thorough drying.

The dentifrice (toothpaste) you purchase for your family is a matter of individual preference. Children may be more willing to brush their teeth if they have a pleasant-tasting dentifrice. Even adults enjoy a good tasting toothpaste. There are some people who prefer soda or salt for cleaning the teeth. This is a decision that every family may make, for there are inexpensive and effective toothpastes and powders on the market.

Good Dental Routine

Remember to ensure good dental health by following this plan:

1. Brush your teeth after every meal—and do not snack. Eat few sweets.

2. Visit the dentist twice a year. Begin dental visits when children are young—usualy between ages two and three.

Regular dental visits reveal tooth irregularities to the dentists before they become major conditions a doctor would find hard to deal with.

Children who begin visiting the dentist before a need arises adapt well to him when it is necessary.

3. Have X-rays yearly or as often as your dentist advises.

4. Have teeth cleansed by the dentist or dental hygienist as often as he suggests, depending on your mouth and the condition of your teeth and gums.

The author,

Dr. John D. Rogers, says,

"It is my opinion, and incidentally it is the

Doctor, Do I Need

PATIENT: DOCTOR, DON'T YOU THINK everyone should take vitamin pills?

Doctor: In my opinion, and incidentally it is the opinion of many physicians, the public has gone vitamin crazy.

Patient: Crazy? What do you mean crazy? Aren't vitamins any good? After all, all those millions of people can't be wrong.

Doctor: It's just this way. I don't mean to say that we don't need vitamins but it hasn't occurred to some people that there is more than one way to get them. We hear so much about vitamins these days that you would think it impossible to get them anywhere but from the artificial source. Hypnotized by the latest health fad, unthinking people gulp down great quantities of vitamin pills to ward off this disease or that. We even have vitamin soaps and vitamin creams for the ladies, to make their skins more healthy and to bring back that schoolgirl complexion. Vitamin cough drops are now obtainable. In some places even the coffee has been vitaminized. And that's just a plain joke to me, if you want to know what I think about it.

Patient: Go ahead, I'd like to know, doctor.

Doctor: This is one case where I think the vitamin advertisers have something. The only joke is that the vitamin they add to the coffee is the only thing good in it, unless milk or cream is added. Coffee contains caffeine, which is a stimulant and harms the nervous system: It would be far better to use one of the substitutes made from roasted cereals, and then one would get the vitamins in the form in which nature made them. You have heard of these cereal beverages, haven't you?

Patient: Yes, indeed, doctor, but I want to hear more on this vitamin business.

Doctor: To listen to the advertisers you would wonder how anybody ever lived before their recent discovery. Just because we have known them by name for only a few years doesn't mean they were not in existence. They were present in food from the very beginning.

A few months ago I was reading from a book on medicine that was one hundred and fifty years old. The medical authorities discovered that the sailors in the British Navy were largely protected from scurvy when they had fruit juice and vegetables. Scurvy was formerly a dreaded disease among those who took long sea voyages. The men would develop bleeding gums and skin blemishes and would even die. We know now that it was because they couldn't get fresh fruits and vegetables. Why should a person in average health today waste his money buying vitamin C pills when he can get this vitamin from oranges, lemons, grapefruit, tomatoes, vegetables, etc?

opinion of many physicians, that the public has gone vitamin crazy."

Patient: But doctor, don't you believe vitamin preparations should ever be used?

Doctor: I most certainly do. I wish I had time to tell you of some of the remarkable results I have seen from the administration of vitamins when they were indicated. It is nothing short of phenomenal in people suffering from pellagra. You can take an individual with this disease, and by means of a high vitamin diet and an extra supply of specific vitamins, change the picture from one of hopelessness to comparative health in a few weeks. This is also true of other conditions.

The point I wish to make is that vitamin preparations should not be depended upon for your vitamin supply. The doctors have no quarrel with vitamins. Our quarrel is with the advertisers who, unconsciously, perhaps, lead folk on to believe that they can neglect diet, sunshine and other health measures, and then when not feeling quite up to par, take some pills and be all right. We need to teach the people to depend more and more on good wholesome food in as natural a state as possible and not so much on the chemist shop.

Patient: Now, doctor, you have blasted some of my ideas. I had hopes of eating as I pleased and simply taking some pills.

Doctor: It can't be done that way. The vitamin "addicts" could save money and assure themselves of a more adequate vitamin supply by switching from fad to food. I believe it is much better to eat your way to health. Let me emphasize the point that I believe we are much more certain of getting the vitamins we need by using an all-round well-balanced diet.

Patient: Do you think, doctor, that vitamins will help a case of nerves?

Doctor: If one feels quarrelsome, depressed, irritable, or has "the jitters," as we call it, there is a distinct possibility that these symptoms may be due to a lack of vitamin B. In that case liberal amounts of vitamin B may be very helpful.

Patient: I think, doctor, you'd better tell me where to get some vitamin B.

Doctor: Indeed I will. In fact, vitamin B is widely found in natural foods. But some of the richest sources are dried brewers' yeast, yeast extracts, whole-grain cereals, such as oatmeal, wheat and rice. Vitamin is also found in dried beans; and peas are good sources; fresh fruits and vegetables, too, but in lesser amounts. And one of the important members of the vitamin B family, thiamin (vitamin B_1), may be lost in cooking through overheating, or lost in the water.

Patient: Doctor, from the list you give, I guess we'll find our vitamins in that garden at home. It sounds as if we have a gold mine and didn't know it until now.

Vitamins ?

DANGER OF LACK OF SLEEP

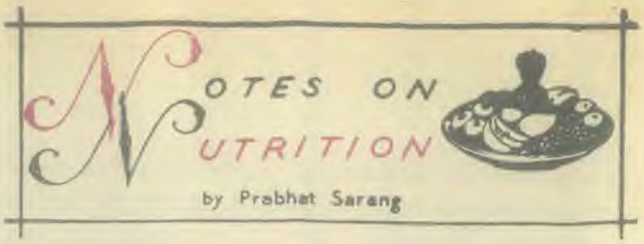
IF YOU HAVE under five hours sleep a night for two nights running it is likely to have a bad effect on how well you do your job. And less than two hours sleep in a single night is liable to impair your performance the next morning. These are two tentative conclusions which have emerged from work being carried out at the Applied Psychology Research Unit at Cambridge, England by Dr. Robert Wilkinson. He emphasizes, however, that the results of his experiments cannot be directly applied to ordinary working conditions, because they were carried out in the laboratory. None the less, the results are striking enough to provide a strong argument for more research on the effect of lack of sleep under ordinary working conditions.

Dr. Wilkinson carried out his experiments on nineteen young volunteers from the armed forces for a period lasting six weeks. Although the men got up at the same time every morning during the experiment, to start their tasks, they were made to go to bed at different times the night before, one at 11 in the evening, providing seven and half hours sleep, one at 1.30 in the morning, giving five hours sleep, one at 3.30—three hours sleep—one at 4.30 who got two hours sleep, one at 5.30—one hour's sleep—while one got no sleep at all. Having carried out their day of tests the men followed exactly the same procedure the next night, so that for the second working day each man had two nights running on his particular sleep ration.

Results showed that performance was signinficantly worse after one night's deprivation by a matter of several per cent, as soon as the sleep rations fell to two hours or less in a single night. But, more important in terms of normal life, efficiency was also lowered after two successive nights of only five hours sleep. Evidently, we all need at least five hours and seven seems a more nensible figure. The first two hours or so of our night's sleep are much more important than the rest. We sleep most deeply and are least likely to dream during those first two hours. When the amount of sleep is reduced to less than two hours, to one hour, or to no sleep at all, then the ability to perform tasks itself becomes less.

Apart from the obvious implication for pilots, policemen, doctors, nurses, and other vital members of the community who frequently miss their sleep, there is an evident moral here. If you must miss your sleep try never to do it two nights running, and always get at least two hours sleep in anyone night.

—*Spectrum*



NUMBER—18

VEGETABLES FOR VIGOUR

A VARIETY OF VEGETABLES are available in Southern Asia to cater to every taste, purse and nutritional requirement. Vegetables have certain common characteristics—they are not rich in protein or fat, but contain a number of vitamins and minerals essential for a healthy and vigorous life, and many vegetables are strongly alkaline. The kind and amount of mineral varies from vegetable to vegetable.

Vegetables are corrective foods in the dietary; they offer nutrients that are not always available in the staple foods. Wheat, rice, dhal, beans, meat, etc, lack some essential food factors—vitamins A and C, for example. They also have too little calcium. For these, we turn to the vegetables.

Vegetable combinations are important. They enhance the nutritive value of the dish and become more palatable. Such combinations can be used in curries, stews and *pulao*. Some of the favourite combinations are:

Cauliflower, tomato, green peas, carrot, French beans, potato, cabbage and shredded carrot.

Many vegetables which are usually cooked are equally or perhaps more, delightful when eaten raw. Cauliflower flowerettes, ladies-fingers, tender green peas and *chowli* may very well be eaten raw. They are more nutritious that way—provided one can digest them raw.

Most vegetables contain a high percentage of fibre. They should not, therefore, be used in case of an inflamed and irritated stomach. One notable exception is ladies-fingers *(bhendi)*—they have a soothing effect on inflamed intestines.

The nutritive value, per 100 g., of the following vegetables is:

	Brinjal	Cauliflower	French Beans	Ladies fingers
Protein (g.)	1.4	2.60	1.70	1.90
Calories	24.0	30.00	26.00	35.00
Calcium (mg.)	18.0	33.00	50.00	66.00
Phosphorus (mg.)	47.0	57.00	28.00	56.00
Iron (mg.)	0.9	1.50	1.70	1.50
Thiamine	0.04	0.04	0.06 0.08	0.07
Tibouavin (mg.)	0.11	0.10	0.30	0.10
Niacin (mg.)	0.90	1.00	14.00	0.60
Vitamin C (mg.)	12.00	56.00	221.00	13.00
Vitamin (I.U.)	124.00	51.00		88.00

ARTHRITIS

by Ellis L. Thompson, R.P.T.

GRANDMA WOULD HAVE BEEN ONE hundred years old in just three more months the day we laid her to rest. Hers had been an active life of service to others. Never once could anyone recall her making a disparaging remark about someone, fiinding fault, or telling how someone had wronged her. The fault some people found with grandma was that no matter how little she had for herself she always found someone worse off than she was to share it with.

There was one peculiarity she had upon which other people looked askance. She was a great believer in herbs. She had some old herb books to which she referred from time to time. One of her teas was sassafras. The rest of us in the family were not interested enough to give thought to her remedies or to the fact that she was not under the care of a physician, that is, until she passed away. Her books disappeared without anyone knowing what happened to them.

Grandma was a great walker. If she had business three miles from home she walked. If no transportation was available back home, her feet carried her. She was well up into her seventies when her roof began to leak. Instead of calling on one of her three sons (who were followers of the building trade, trying to look after their mother without destroying her in-

dependence), she climbed up onto the roof on her creaky old ladder and repaired it herself.

Grandma did one other thing that was rather peculiar to us who more or less live by the customs and styles of the day. She dressed warmly, and believed in using plenty of water outside and in. She used many treatments, some of which were hot and cold fomentations. After her ninety-ninth birthday grandma fell and injured herself so that she had to be hospitalized. She was so vigorous that she survived the ordeal and went on to live another six months or so.

Even when grandma was full of years she was free from arthritis, the disease so prevalent and debilitating in the aged. The way she lived and the things she did were preventive medicine to avoid this painful condition. There is no known cure for arthritis, but people suffering from it can find some comfort and relief from pain.

Grandma's health habits and treatments contributed greatly to her longevity, because her system was kept clean and free from many of the foods that are detrimental to health.

What is Arthritis?

A definition of arthritis, of which there are several varieties, is literally "inflammation of the joints." This malady includes diseases that cause aching, stiffness, and pain not only in joints but also in muscles, ligaments, and tendons. The most common kinds are osteoarthritis and rheumatoid arthritis.

Osteoarthritis is primarily a disease of aging. It is a degenerative disease resulting from wear and tear of joint surfaces. The cartilage covering the ends of bones at joints degenerates and is damaged, generally in those parts that do the heaviest work. Overweight and poor posture add to this problem. The main symptoms are pain and stiffness in such joints as back, hips, knees, and fingers.

Rheumatoid arthritis is usually the most crippling. Its main symptoms are fever and weakness, fatigue, loss of appetite and weight, muscle aching, and inflammation, pain, and swelling in the joints. It damages the ligaments and coverings of the joints and muscles and some organs of the body. The main joints involved are those of the hands, wrists, shoulders, knees, ankles, and feet. The joints may become weakened and crooked, with the crippling occuring when the patients keep the joints bent in trying to relieve pain.

Rheumatoid arthritis has an acute phase and a chronic phase. During acute attacks, the patient is genuinely sick, with the joints swollen and hot. Bed rest is usually prescribed during this period. It may vary from a complete twenty-four hour-a-day rest to ten or twelve hours daily. The patient should understand that bed rest does not mean complete immobilization of the joints. Prolonged rest without specific instruction in bed positioning and joint mobilization may lead quickly to deformity and impaired joint motion.

Once the acute stage of the disease has passed, rest ceases to be urgent. In the chronic stage exercise is not a cure, but it increases normal function of afflicted parts. Even in severe cases, mild muscle-setting exercise (tightening of the muscle without moving the joint) is prescribed while the patient is still in bed. The object is to maintain or increase the strength of the muscles, keep the affected joints as flexible as possible for the widest range of motion, and prevent deformity.

There is a triple goal in treating the arthritic patient:

1. The most important aim in treatment is prevention of deformity by correct body positioning and maintenance of range of motion and muscle strength.
2. The second aim is preservation of function, known to physical therapists as ADL—activities of daily living.
3. The final aim is relief of pain and muscle spasm.

A person so afflicted by pain and fever should be under the care of his physician. Only your doctor can give the proper prescriptions for medication and can help you to get the utmost from it.

Posture and Exercise

Proper body positioning prevents further deformities.The patient should change his position at frequent intervals to prevent muscle contractures. A bedboard of one-inch plywood running the full length of the bed helps prevent dorsal kyphosis (abnormal curvature of the back) and/or hip-flexion contractures. For the same reason, avoid placing pillows under the head and knees.

An upright foot board helps hold the feet in the correct position and prevents foot drop from the weight of the covers.

Exercises, including taking the patient's arms and legs through their range of motion, prevent deformity, wasting away of muscles, and pain in obstructive blood-vessel disease by improving blood circulation. Early in the period of exercise, instruction emphasis is placed on exercising muscle groups that oppose the direction of usual deformities—extension instead of flexion. Quadriceps, the muscles on top of the thigh, and gluteals, the muscles people sit on,

can benefit especially from muscle-setting exercises. During such exercise these muscles should be held tight for ten to fifteen seconds.

The minimal activity for such a patient is two or three routines of each motion three times a day. Repetition is increased until ten routines can be done during each of the three sessions. None are to be done more than ten times during each exercise period.

There are two safe rules to follow in determining how much exercise an arthritis patient should have. If pain develops or increases during the exercise and lasts more than two hours or if there is no pain but the joints are stiff the next day, there had been overexercising. Grandma's walking and other activities kept her joints from pain and stiffness. A physician was overheard telling a patient, "If you are active and doing somthing the pain may not go away, but you are so involved and interested in what you are doing that you don't notice it."

As a rule, people who are active and going about their business either do not have as many aches and pains as people with nothing to do or else they do not have time to bother other people with them.

Grandma tried to keep herself always warm. The effect of heat on the body increases blood circulation, which carries away waste from the body parts, and causes vasodilation followed by vasoconstriction—activity of the blood vessels. Naturally this activity increases blood circulation.

A general rule is that the better the blood circulation, the more free people are from pain. This rule can be demonstrated by constricting the flow of blood by placing a tight rubber band around a finger. The longer it stays the darker the contaminated blood becomes and the more it aches and pains.

Physical therapy

Heat in the form of hot fomentation cloths (hot compresses of Turkish towels wrung out of hot water and wrapped in plastic) or paraffin baths, is used for arthritis before giving them exercises that produce active joint motion. Heat tends to diminish pain associated with muscle spasm and permits greater range of motion. A hot tub bath of 100 to 102 degrees for fifteen to twenty minutes upon arising and retiring is good for multiple-joint involvement. Fomentations, used for thirty minutes, should be changed as necessary to maintain comfortable heat.

Paraffin baths, consisting of four parts paraffin to one part mineral oil melted in a double boiler at a temperature not over 125 degrees heats the joint and keeps the skin soft and pliable. The hand is dipped into the warm paraffin eight times and then wrapped in a towel for fifteen minutes with the paraffin build-up left intact. The larger joints can be covered with the warm paraffin by means of a paint brush.

Take care with the paraffin, for it is inflammable and if heated too hot will burn. The mineral oil is used in it to make sure that it melts at a safe low heat.

The effect on the body of cold applications is to reduce swelling and inflammation and remove fluid from an inflammed joint. Cold acts as a constrictor of blood vessels in the first fifteen to twenty minutes and after that it causes dilation of blood vessels, just the opposite of the effect of heat.

Stroking a painful arthritic area with an ice cube for only two or three minutes often relaxes spasm and reduces pain. Sometimes an ice dip or an ice-cold water pack for fifteen to twenty minutes is used.

Shortly after I graduated in 1950 from the Department of Physical Theraphy at Loma Linda University (U.S.A.), I went to work in the men's hydrotherapy department at Glendale Sanitarium, Glendale, California. A certain physician came in every night for hydrotherapy treatments. He varied them from time to time between an electric-light bath and a warm to cool shower.

He asked his favourite therapist to work on him. Not all the therapists in that department were privileged to do so, and I felt quite proud one day when his therapist was not in and I was accepted. From then on he accepted my help from time to time.

This gentleman of the medical profession had access to the steroids, which were just coming into use. As I recall, he was taking cortisone. Because it is tolerated by some people but can be very harmful to others, it has to be watched closely by a physician.

This doctor began his treatment with hot fomentations—three series of hot packs, each followed by a cool cloth rubbed over the skin before application of the next one. Then he took either an electric-light bath from a series of bulbs in a wooden cabinet or

TODAY AND TOMORROW

It is not the cares of today, but the cares of tomorrow that weigh a man down. For the needs of today we have corresponding strength given. For tomorrow we are told to trust. It is not ours yet.

—George Macdonald

a percussion spray to the desired body part. This spray is a shower with multiple sprays played on the patient's body on one side a hose and nozzle with water run up and down the spine by the therapist on the other side. The temperature of the water and the force of the spray from the hose can be regulated.

This treatment was given meticulously by the therapist. The physician did not want his shower too hot or too cold. He said that extreme heat or cold caused him to ache. After about five minutes of this spray treatment he was carefully dried and massaged gently. The importance of the massage being done right was the reason he was so careful in choosing his therapist. He said, "The medication numbs my joints. If you are too rough with your massage I will not feel it now, but tomorrow I will be sore."

At one time his joints had been so swollen and his hands so contracted that he had to give up surgery (he belonged to the Royal College of Surgeons). When I saw him he was back doing surgery, with good movement in all joints of his hands except for flexor contractures in the little fingers.

Most cases of arthritis do not respond this well, but then most people do not have access to a first-class therapy department, as he did. The cost also may be prohibitive to many people. However, if a patient does find these treatments beneficial, he might wish to do a little rearranging of the plumbing in his own bathroom. He may find that skilled workmen can arrange showers to come from several directions upon his body and install a regulator with a thermometer on it to do such a treatment. Even a tub of water properly used might bring more comfort than is imaginable.

Massages

Some people think that massage is of limited usefulness because it neither prevents atrophy nor increases muscle tone, but it is known that massage can be a sedative or a stimulant in the way it is administered. It can be used to drain venous blood from areas, thus helping to tone up a person and contributing to his well-being. Light stroking massage over muscle groups near and not so near but not over acutely inflamed and involved joints, beginning away from the heart and stroking toward the heart, serves as a counterirritant, relieves muscle spasms, and decreases contractures. Often we begin at the elbow and stroke to the shoulder, then from the wrist to the elbow, and last the hand, being careful around the finger joints. If massage is not done properly, it can be irritating instead of comforting to the patient.

Diet

Diet is also of importance to the arthritic. People suffering from rheumatoid arthritis are often underweight, whereas those suffering from osteoarthritis are often overweight. Some sufferers are very careful about what they eat. There is literature from reliable sources that declares faddist diets to be of no benefit. On the other hand, it is known that certain foods can cause a flare-up of the condition.

There could be a lesson in this fact for us. A health giving diet may have been one of the grandma's secrets.

EYE DEEP

From page 11

a great deal of close work, always make certain to have plenty of adequate light.

With regard to correct lighting for homes, it is rather alarming how so many people still do not consider this important. Central lighting fittings are unsuitable for close-up work as they tend to shine directly onto the face. Ideally suited for this is a reading lamp tall enough to send its shaft of light over the shoulder. Because of its brightness, fluorescent lighting is also considered far too glaring for close work over long periods.

Sensitive eyes show strain quickly. Their lustre dulls, the whites of the eyes, that should be clear and have a faint blue tinge to them, become an ugly yellow, and bloodshot streaks appear.

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I, V. Raju, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Date: February 28, 1970.

Signature of the publisher
V. Raju

Not only strain from over-work can cause this complaint. It can be brought about by long days in the hot sun and dust-filled air, swimming in the sea or in chlorinated pools; even smoked-filled rooms cause eyes to redden and water. Nature is far more kind to us than we often are to ourselves, for strained, bloodshot eyes are her sign to show us something is amiss and her warning to rest our eyes more than we are doing.

Regular sleep and a simple diet are the best aid to keeping our eyes in good condition. When they feel tired there is nothing wrong with pampering them a little also.

A mild eye lotion helps to soothe inflammation and acts as a tonic for tired, overworked eyes. It is, in fact, as important to keep your eyes clean as it is to keep the rest of your body clean. Get into the habit of using an eye lotion regularly as you feel you need it, using fresh lotion for each eye and washing the eye bath in between. Very little lotion is needed to cleanse your eyes. Place the eye bath to the open eye, tilt head backwards and then sideways, feel the lotion cooling and washing. Make sure to keep your eye bath scrupulously clean. If you are treating children with this method, it might help to make a game of it. Many children react strongly against having anything done to their eyes.

A simple but effective eye lotion can be made by adding a teaspoonful of common salt (not iodized) to one pint of pre-boiled water. Bottle and keep in the medicine chest. Many types of reliable eye lotions and eye drops can be purchased from your chemist, along with eye ointments.

A very restful exercise for overworked, strained eyes is to go to a window or go outside and first look at something close at hand, then at some far-away object. Do this for a minute or two, then without moving your head, look down to the right, then to the left, then up to the right and then to the left alternately.

Proper home lighting is essential for the care of the eyes

To exercise and strengthen the eye muscles, try rolling the eyes in a full circle first around to the left and then around to the right; this can be a fun game, too, especially where there are kiddies. Try each rolling movement about ten times each way.

Hold a pencil at arm's length. Now bring it slowly towards you, keeping your eyes focused on the point all the while. Stop at about one foot from your face and repeat this about ten times.

Another exercise that can be done anywhere at any time, is to close the eyes gently and "think black velvet." Try hard to think of soft black velvet, and soon sure enough, you will see only black. This one can be so restful it can set you right off snoozing!

The eyesight of small children (and, indeed, of all age groups) should be carefully watched. If it is noticed that they are peering too closely at any work they are doing or at books when reading (about a foot away from the eyes is normal for reading or close work) then it would do no harm to take them for an eye test.

Healthy eyesight goes hand in hand with good general health. The eyes nourished by pure, rich blood are bright, healthy and strong.

Take care of your eyes, treat them properly, and they in turn will repay you a thousandfold.

HABITS

WITHOUT HABITS IT WOULD BE hard to stay alive, and harder yet to get anything worth while done. Consider a simple activity like walking. If you had to think about every step—whether to take it or not, how long it should be, which foot to lift, how and when and how high to lift it, and how and when to put it down —you would do a clumsy job of walking. You wouldn't be able to think of anything else at the time, and would soon be exhausted. If you don't think so, try it and see.

Foot motions in walking become a habit with a normal person before the third year of life. Once you have started for some destination, you can watch the scenery along the way, talk with a friend as you walk, think about what you intend to do when you reach your destination, or let your mind dwell on subjects that have nothing to do with your trip. Yet your feet and legs very amiably take you where you want to go.

Piano playing is more complex than walking.

The motions are laborious and awkward to you at first, but later become so thoroughly habitual that the proper fingers go to the proper keys in a fraction of a second after your eyes see the corresponding notes. I have known several pianists who could memorize a selection, play it over a few times, and then go through it from beginning to end without a mistake, while looking about the room or carrying on a conversation.

The habitual acts or motions that enable you to walk, run, and play a piano are good, and are more or less beneficial to health. Still other good habits will do even more for your health of body or mind.

There are three fundamental rules for good habit formation. First, do with thought and determination the act you wish to make habitual. Second, watch for every opportunity to repeat this act. Third, never allow yourself to make an exception and neglect this opportunity. Daily acts make stronger habits than weekly acts.

The Importance of Rhythm

We recognize that rhythm is important insofar as our vital activities are concerned. Such rhythm activities, as breathing, the heart-beat, the contractions of the stomach, waking and sleeping, work and rest, mealtimes, and variations of the body temperature from morning low to evening high are all part of the healthy organism. The principle of the regular rhythm will help you to form good habits, for it is clear that regularity is good for you and irregularity is bad.

You can do very little directly to affect the rhythm of your breathing or heart beat. They go on without your thinking about them, and began long before you were able to think about anything.

Perhaps the most important for life and health that you can strongly influence is your food. You can form the habit of selecting foods that will provide you balanced nutrition. First of all, you get a general knowledge of what the common foods are made of. You can get plenty of information on this subject so that if you want to learn you can. Discussions on

FOR HEALTH

By
H. O. Swartout, M.D.

food regularly appear in HERALD OF HEALTH. After you learn what you should eat to get a balanced diet, thoughtfully choose for a few weeks the kinds and amounts of foods that you know will give you good health. You will discover that a good choice of food is becoming habitual, and you will have less and less difficulty in doing it.

Importance of Chewing

Do you long to eat a meal without discomfort? You can do something to help yourself! We have mentioned the value to you of regularity of mealtimes and of thorough chewing of food. Make it a habit to eat on time and chew your food well. Hurried eating without proper chewing of food for a single meal may undo the good done by proper chewing at several previous meals.

Regular trips to the bathroom contribute much to good health. Whenever you eat a meal the walls of your stomach begin rhythmic contractions. These contractions spread downward in successive waves, and

your entire digestive system falls into line. Make your habits to eat on time and chew your food well. Hurried eating without proper chewing of food for a single meal may undo the good done by proper chewing at several previous meals. Make your habits correspond. Continue in relaxed regularity until your body responds, and you will have a healthful habit.

Do you feel yourself slipping because you don't get your full quota of sleep? Do you know that your powers are dimming because you do not have the refreshment that a peaceful night's sleep every night brings you? Help yourself to health!

Sleep is important to health. Some of your habits have a great deal of influence on your sleep. Perhaps the most important is a regular bedtime. This may be a little later for you than others. But whatever time you choose, don't let your sleep be broken. The average adult does best with about eight hours of sleep. A good plan is to decide on a rising time that will allow for relaxed bathing, dressing, and eating breakfast before starting the day's work. Choose your rising time carefullly, and place your bedtime eight hours before it. Regularity in both bedtime and rising time will materially benefit your health.

Eating and Sleep

Another habit that will promote restful sleep is to allow for at least three hours regularly between bedtime and your last meal before going to bed. You will sleep better if this meal is not too heavy, and if you do not take stimulating foods or drinks with it. If you will habitually follow this suppertime advice, you will usually become sleepy enough to drop off without delay if you retire at your regular bedtime. You will seldom need an alarm clock to waken when your regular rising time arrives.

When you make exercise a regular habit, not something hit or miss, you are almost sure not to neglect getting the lift that a turn in the zesty outdoor air will give you. Taking exercise regularly on weekends may be called a habit, but it will not give you the exercise you need for feeling like a million rupees. Select an activity you can enjoy every day when choosing your kind of exercise to take for blooming health.

Regular bathing is a habit that will bring you a delightful sense of well-being, whether you take it for cleanliness or for stepping up the circulation of your blood. One whose work or exercise causes much perspiration needs a daily warm cleaning bath or shower. To feel your best, take it habitually every day. If you are one of the comparatively few who need warm foot baths to improve the circulation in feet and legs, you will find they make your feet and legs most comfortable if you take them every evening just before bedtime. You will sleep too.

Regular face washing and hair combing go far toward keeping you socially acceptable and feeling poised and well groomed. They are an important factor in mental health, for it is often the person who feels himself unwanted, who develops some form of mental illness.

Speaking of mental illness, one of the chief reasons why people become mentally ill is that they stay all wrapped up in themselves. One way to keep yourself in top form mentally is to practise the noble habit of watching for chances to help other people. They need it, and so do you.

Regular brushing of your teeth is a habit similar to face washing and hair combing, but it has more influence on your physical health. Good teeth contribute substantially to good health, and brushing the teeth regularly soon after every meal will greatly reduce your rate of tooth decay and loss.

Hand washing and nail cleaning are also in a class with face washing and hair combing, for soiled hands and nails will keep a person from being aceptable in decent society. But here again there is a possibility of much influence on the physical health. This is true even when there may be no visible soil on the hands. Your hands come in contact with much of your food as you eat it. They can easily become contaminated with disease germs, because they handle so many things that may have such germs on them. This can easily happen by contact with body discharges or contaminated parts of the body when at the toilet. Washing the hands regularly after going to the toilet and before each meal is a most important health habit.

You will be the gainer when you make habit work for you. Set your pace for health, and habit will smooth the way for you. Collect your bonus in time saved and in better health.

EXPOSE YOUR CHILD TO MUMPS

by
Matilda Rose Mclaren

ALL CHILDREN SHOULD HAVE MUMPS, say the doctors. To escape this disease as a child is to court serious trouble during puberty or adulthood. My attorney husband and I were parents of three children when one hot July morning we found our selves with swollen heads. My husband, one of seven children, had taught school for several years. I was brought up in a country doctor's combination office-home, one of three children, and also had taught school.

"How," we asked through clenched teeth, "did we ever escape mumps until now?" The neighbours brought in bland foods for us to eat and told us that we could no longer have children.

We called the doctor. He ordered cold applied to my husband and heat to me, and said, "I'll send out prescriptions for each of you. By evening you should feel like new people."

But by evening my husband had fainted twice, and my neck was swollen until I could not tell where my chest began and my chin left off. My head was outsize.

About five o'clock of that day we each ran a high temperature. Neighbours called the doctor again. He shook his head.

"We may have to resort to surgery," he said to my husband. "I thought we had this headed off. Whatever you do, don't get onto your feet. Not for anything. I wonder why your medicine didn't work. Let me see what the drugstore delivered."

My medicine was on the bedside table, my husband's was on the nearby window sill. He studied both supplies. Suddenly he sat down on the foot of my bed and laughed until it shook. "You know what?" he cried. "Neither of you is wearing your glasses, so you didn't read the labels carefully, and you accidentally traded medicine. Your husband's been taking ovarian medicine, and you——Ha, ha, ha!"

Do not let anyone tell you mumps is a laughing matter. An infectious communicable disease, mumps usually localizes in the salivary glands and manifests

itself with painful swelling. Often it affects other gands, particularly pancreatic and sex glands.

Not always is there swelling in mumps. Sometimes brain, eyes, and ears are involved, and the case is diagnosed as grippe, or influenza. Then the patient may find himself in painful trouble.

Apparently mumps has been with us since ancient times. Hippocrates, called the father of medicine, who lived from 460 to 377 B.C., speaks of it in his article "Epidemics" as a disease without discharge or ripening, and says that as an accompaniment inflammation of the testes may plague men, lumping of the breasts may torture women. No group of people is naturally immune to mumps.

Because of crowded living conditions, city children are more susceptible to mumps than country children are. By adulthood, many city people have already had mumps, and of course more rural adults come down with mumps than city adults do. Place rural young adults in camp, and (as we learned the hard way during both world wars) mumps epidemics are sure to break out.

Mumps is not so contagious as measles or chickenpox. It is caused by a filterable virus that can be isolated from the saliva during the first six days of infection. Mumps usually hits a community at the end of winter or in early spring, but it can (as in our case) slip up on people later in the year.

Mumps epidemics run in cycles, in some areas every three years and in other areas every seven years. Why males contract the disease more easily than females no one knows. Rarely is it contracted under four years or after forty years of age. The people in the five-to-fifteen-year bracket are most often attacked; in fact, this group accounts for eighty-seven per cent of cases.

Transmission of mumps is probably by saliva droplets or air-borne viruses. No one has ever pinpointed the time when the disease is most infectious. Probably it is a short time before swelling appears in front of the ears and throughout the swelled period, which usually continues up to twelve days, but eight to thirty days of swelling have been recorded.

If mumps is going around and your child complains of a sore throat, is nauseated, chilly, and has a headache, you may find him running a low fever. Watch for swelling, and do not be surprised if his temperature eventually reaches 104°F. For several days glandular swelling will increase, for several more days it will stand still, and then it will subside as slowly as it rose. The patient may swell on only one side or on both sides. Because one side is more swollen than the other, the less-swollen side may pass for normal.

Although mumps has a low fatality rate and no cure for the disease has yet been discovered, it is best to call the doctor, for he can help make the patient comfortable. It is important to keep the patient's nose and mouth clean. Bed rest is recommended, even for children who are having the disease lightly, and it is imperative for any patient over ten years of age. To ward off complications, teen-agers and adults should not be allowed to get up even to go to the bathroom. Supply a bedpan for their use. Pain in the lower abdomen is not unusual. Pressure on the spine can cause extreme nervousness.

If testes have become involved, apply an ice bag. Support its weight by placing a pillow between the thighs to help carry the load. Never leave it on more than four hours at a time. Remove it for one whole hour, then reapply. In severe testes involvement, the doctor may suggest surgical incision to bring relief. He may suggest spinal puncture to relieve the extreme nervousness adults sometimes have.

Support pendulous breasts by a nursing binder.

Even when the jaws are not too involved, give the patient liquid foods. Do not let him get up on on his feet until all swelling has subsided. Complications have been known to show up three weeks later.

Symptoms may be akin to those of encephalitis or meningitis. Deafness as a result of mumps is permanent. Fortunately, it usually affects only one ear.

Young children rarely suffer complications, but one fifth of all boy mumps patients past the age of nine suffer testes involvement.

Doctors say that it is not wise to shield from mumps any child past four years of age. Should a child contract it later, do not lose sleep over his future virility. During World War I, the French army reported 175,000 cases of mumps and not one case of established sterility. Inability to produce children has never been recorded as an aftermath of female complications, which occur in about five per cent of recorded cases. Mumps is often blamed for impotency due to other causes. My husband and I had two sons after having mumps.

We know a childless widower whose mother mourned at her daughter-in-law's funeral, "If Kumar hadn't had the mumps in the army, he might not be standing alone today. Ten years they waited for a family, with no luck." After a time Kumar remarried, and he soon had a family.

Once you have had mumps, you probably are immune for life. Rarely does a person come down with it the second time. If only one side swells, a child often may be immune for life. Only one third of infected children are afflicted with swelling. If you are a teenager or older, it is smart to run away from mumps.

Wonder drugs have little if any effect on the invading virus. For years doctors *To page 34*

The Pancreas and Overweight

by J. DeWitt Fox, M.D.

THE PANCREAS IS A DOUBLE-DUTY mystery gland which is vital to your digestion and to your body's use of sugar. Its activity is the reason a fat person can eat a three-pound box of sweets at a sitting.

This little gland is always working away deep in the abdomen. It secretes juices to digest the food, helps regulate the blood sugar at a healthful level, and controls the appetite. This mystery gland, only recently appreciated by physicians and surgeons, is vital to health.

If your pancreas should suddenly stop functioning, serious disease would follow, ranging from serious abdominal pain (pancreatitis) to diabetes mellitus, with extremely high blood sugar. A look at some of the services this gland quietly renders each day will help you appreciate the wonderful body you have.

The pancreas serves as an organ of digestion by secreting vital enzymes into the duodenum (the upper small intestine) and at the same time it is an endocrine gland, which means it secretes its hormone, insulin, directly into the blood stream. Insulin is vital to the metabolizing of sugar by the body. As sugar and starch are absorbed by the intestines, insulin aids the uptake of glucose by the body cells, especially of the muscles, during exercise.

Among the digestive enzymes secreted by the pancreas is trypsin, a protein digestant, which breaks meat and other protein foods down into their component amino acids. These acids can then be absorbed by the small intestine and transported by the blood stream to the liver.

Lipase (*lipid*, meaning "fat") is the fat-digesting enzyme, which helps to break down fatty foods into fatty acids.

Amylopsin is a pancreatic enzyme that converts starchy foods into sugar.

Your Power-packed Pancreas

The real power packed by your pancreas lies in its endocrine function—secreting insulin. Insulin is the automatic regulator of sugar in the blood. It is vital to more than the function of the muscles and glands. The altertness of the brain depends on he correct amount of glucose (blood sugar) circulating at any given moment.

Because insulin is one of the most powerful appetite stimulants known, it is sometimes used by physicians to spark the lagging appetite of the thin and wan elderly patient.

Insulin can be a friend or foe. To the fat person sitting up in the evening with a good book and a box of chocolates, it can be almost lethal. It is insulin that

spurs him to eat the entire box of chocolates before he goes to bed. Sugar is actually the culprit, but let us take a look inside to see how it happens.

As the chocolate and sugar are eaten and pass into the small intestine, the pancreas pours out lipase to digest the chocolate. Amylopsin and other sugar-splitting enzymes go to work on the sugar. The sugar eventually is absorbed, and it passes into the blood stream.

The blood-sugar level rises rapidly to a high point. Normal blood sugar is seventy to 120 milligrams per cent. After digestion of chocolates, it may rise above 200.

Once the blood-sugar level rises this high, the pancreas is triggered to pour insulin into the blood stream to help route the sugar into liver and muscles for storage. Insulin makes sugar usable by body and brain. As this high level of sugar circulates through the brain in the region of the pituitary gland and the hypothalamus, it contacts a little nerve mechanism —a sort of thermostat—that has been called the appetite centre. For our purposes we will call it the appestat. It is a regulator of appetite, and it functions at the prodding of a low blood-sugar level—below eighty milligrams per cent.

This explanation may sound a little complex, but we will try to help you visualize this body function. As the sugar level rises, insulin pours out in great quantities to bring it back to normal. In so doing, it drops the level quite low, in fact below the normal seventy to eighty milligrams per cent point.

At that moment a message goes to the appestat to tell you that you are hungry and need more sugar or food. At this point our fat person is acutely hungry, and this feeling calls for another chocolate with its many calories. This up-and-down stimulus to the pancreas to put out insulin and to the appestat to eat more sugar may continue until the thirty-five pieces in a box of chocolates are consumed, and the 3,500 calories add a full pound to the already heavy body.

Give Your Pancreas A Rest

On the other hand, we can co-operate with our pancreas and actually give it a day or two of rest. Then the insulin is as quiet as a purring kitten. In fact, the best way to depress your appetite is not always with medicine. You can let nature do it for you by shutting down your insulin factory.

Let us say you are ten pounds overweight. You would like to lose it sensibly and with a reasonable amount of speed. Here is how: Eliminate all carbohydrates from your diet. This regimen means that you must go on practically a total fast. Once you stop putting starch and sugar into your blood stream, the pancreas rests, the insulin is not stimulated, and —most pleasant of all—neither is your appetite.

Now you are not hungry. You can go for as long as a week on a total fast and not have hunger pangs. Why not? Because you have put your pancreas to rest for the time being, like the car that is put up on blocks for a time. This rest is not only good for your pancreas, it is a welcome joy to your appestat and to you personally. After two days even the gnawing peristalsis of the stomach will cease. Actually, it can be relieved by a glass of water.

With this knowledge, the reducer can play tricks on his pancreas. He can shut down the appetite stimulation of insulin and give his pancreas a happy rest. He may even prevent diabetes if he is on the borderline of developing it.

This fact is undoubtedly the reason many an overweight diabetic who must take oral medication or insulin by injection can throw away his pills or needles when he reduces and stops putting the added strain on his little islet cells of Langerhans, which are secreting insulin.

By giving your pancreas a rest and a better health quotient you will put your mind at rest also. By using your powers of will you make life enjoyable.

If you are a diabetic, by all means drop your weight to normal or slightly below normal, exercise a regular amount daily, and remain under you physian's constant care. Also give your pancreas a rest periodically by reducing almost all carbohydrate foods.

May your pancreas ever be peaceful, and may it serve as your potent purveyor of pleasant digestive juices and be the joyous stimulus to a healthy but not ravenous appetite. By all means, play fair with your mysterious little pancreas, and it wil serve you well for life.

CLOTHES, ATTITUDE AND HEALTH

It is a fact that looking fit helps us to be fit. A pale, unwashed, unshaven tramp in dirty rags actually resists physical or mental stresses more effectively after a shave, a bath and a change into clean clothes.

My grandmother first introduced me to these truths when I was six. I was crying desperately, when she looked at me with a particularly benevolent and protective look and said, "Anytime you feel that low, just try to smile with your face, and you'll see ... soon your whole being will be smiling." I tried it. It works.

—Adapted

ELECTRIC NATURE

From page 4

cles lose their nerve supply may be delayed. The application of electric current to the human body has received promotion since a medical specialty called physical medicine and rehabilitation has been developed. Now the physician uses electric currents to delay degenerative changes in the muscle after the nerve is severed.

Certain kinds of currents are most easily tolerated in treatement because they do not cause stimulation of the sensory-nerve ending as other kinds do. Elecetrical stimulation indicates to the physician whether a muscle has stopped functioning because its nerve supply is interrupted, and whether the nerve to the muscle is growing back.

Through scientific developments the doctor is able to detect the tiny amount of current caused when a muscle fibre contracts. He amplifies the minute amount of current thousands of times. By means of a loudspeaker he can listen to, and by means of an electrical projection on a screen he can see, the waves created by muscle contraction. This scientific process is called electromyography.

Electric currents in the muscle can be measured by the electromyograph, called EMG. Some years ago there appeared in the *Saturday Evening Post* an article describing such an experiment. It was performed to determine whether the nerve would regenerate. A needle was injected into the tissue of a volunteer in whom a nerve was deliberately cut. The electric currents were amplified and made audible by a loudspeaker.

The volunteer knew that the nerve might not grow back, but he was willing to try. He was placed under anæsthetic and two nerves were carefully exposed and crushed by a delicate procedure. At once the muscles to his left wrist and hand became paralyzed. They were electrically dead. The EMG was not able to find any signals for more than two weeks. After eighteen days the machine found the first sign of electrical response. From that time on for some weeks there was a crackling sound from the EMG. Present-day doctors know it meant that the muscle was not being supplied by a nerve but that the muscles were still alive.

On the fifty-fifth day came the next change. Added to the crackling sound was a repeated chugging sound, which revealed that the first restorative nerve fibres had gotten to the muscle. In nine days the first indication of recovery showed up, and in twelve days the muscles were able to stir the wrist. In two months the paralysis was just about healed.

It was found by Drs. W. K. Volkars and W. Candib of Schenectady, New York, that muscle broadcasts not only relatively powerful signals (of a few hundred cycles per second, as commonly used in diagnosis of the heart with the electrocardiograph) but also weak high-frequency electrical signals. By using a new ultralow-noise transistor amplifier, they picked up muscle signals up to 50,000 cycles per second in frequency.

The human nervous system is much like the telephone system, the nerves acting as the telephone lines and the brain as the switchboard. But the brain is more complicated than any electrical system man can devise.

It was my responsibility for more than fifty years to check the safety of electrical systems in a wide area for hospitals, theatres, industrial plants, and homes. Years before I had worked with the crude electrical apparatus of the first world war. I have witnessed one breakthrough after another in the electrical field to the ushering in of the present era with its marvellous developments. The brain is more complicated than any of these electrical systems, and in good health it is perfect. To help you realize what an extraordinary electrical system the brain is, here is an idea from the article "Your Brain Is Like a Wet-Cell Battery," which appeared in *Popular Science Monthly* some years ago.

The brain may be compared to a computer, but such a machine as complex as the brain would need a five-storey building many blocks square filled with mechanism, and it would call for all the waters of Niagara Falls to cool the tubes required. A medical scientist figured that the largest computer ever devised might be about equal to an ant's brain.

The brain is a complicated organ because of the large number of cells it contains. The cerebrum, one of the three parts of the brain, contains as many as fifteen billion cells. A famed nuclear physicist and Nobel prize winner pointed to his head and said, "What never ceases to impress me is the vast knowledge of things about us that can be stored within a tiny place such as this."

That the brain gives off waves of electrical impulses at regular intervals was discovered by Hans Berger a German psychiatrist. His study of brain waves resulted in the development of a new medical science called electroencephalography. By attaching electrode connections to the skull, we can record a person's brain-wave pattern, called an electroencephalogram.

Each person has his own pattern of shift in frequency of the electric pulsations and amplitude. The brain-wave pattern varies according to activity. Today most modern hospitals are equipped to provid studies of the brain waves. The encephalograph machine is indispensable to the modern brain surgeon.

A PAGE FOR
LITTLE PEOPLE

SEE HERE MR. JONES

by Mary Shearly

PAUL SWUNG HIS LUNCH PAIL as he hurried into the school yard. Then he stopped. What was that big yellow trailer doing in front of the school? But he didn't have time to go over and find out, because the bell rang just then. So Paul hurried into his room with the other first graders.

When all the boys and girls were in their seats, Miss Wallace, the teacher said, "Good morning. Today all the children in the first grade are going to have their eyes tested. Most of you saw the big yellow trailer in front of the school when you came in. A nurse will be in the trailer, and she will test your eyes. You will march over in single file, and the nurse will tell you what to do."

The children marched over to the trailer. Paul was third in line. He went into the trailer with the boy and girl ahead of him. The nurse showed the children a chart with letters on it. Some of the letters were big while others were smaller, and some were very small.

Paul watched while the nurse asked the little girl to read the line of big letters. Then she read the smaller letters. The little girl could read all the letters the nurse pointed to on the chart.

"Now you may go back to your classroom," the nurse told the little girl. "Your eyes are all right."

The boys eyes were all right too. But when Paul tried, some of the letters looked fuzzy.

The nurse wrote something on a card and handed it to Paul. "Please take this card to your mother," she said. "You may go back to your room now, but don't forget to take the card home."

All morning Paul wondered what the card said. Some of the words were too hard for him to read; so he couldn't make out what the nurse had written.

When he got home, he gave mother the card.

Mother read it. "The card says we should take you to an eye doctor to see if you need glasses. I will make an appointment for this afternoon if possible."

So mother took Paul to the eye doctor. He had Paul look at all sorts of things and tell what he saw. When the tests were finished, the doctor said, "Paul needs glasses. He will be able to see better with them."

The doctor showed mother and Paul rows and rows of frames for glasses. He tried several frames on Paul. At last Paul and mother picked out the pair that suited them best.

"Come back in a week and the glasses will be ready," the doctor said.

When Paul got his glasses, they felt strange, and he looked so different. All the first graders stared at him. They had never seen Paul wear glasses before.

He didn't want to wear his glasses. He'd put them in the case in his pocket whenever he was away from mother or the teacher.

One day when he went to the park to play he saw a dog. He was sure his eyes were playing a trick on him that day. He took his glasses from his pocket and put them on and looked at the dog again. It was the strangest thing. That dog was wearing glasses. Paul stared and stared. The dog came over to him and dropped a ball at his feet.

Paul bent down to pick up the ball and look more closely at the glasses. He saw the glasses were fastened around the dog's head by a strap.

The dog barked and wagged his tail and seemed to be begging Paul to play with him. Paul tossed the ball. The dog got it and brought it back. The boy and the dog had a lot of fun. Then dog got it and

Paul was surprised to see a dog wearing glasses.

brought it back. The boy and the dog had a lot of fun. Then someone from a porch across the street called, "Mr. Jones! Mr. Jones! Come on , boy."

The dog picked up the ball and trotted toward the voice. Paul followed the dog across the street.

"Oh, there you are, Mr. Jones. I see you have found a friend."

Paul looked up at the lady on the porch who patted the dog.

"Why is Mr. Jones wearing glasses?" Paul asked. "I never saw a dog wearing glasses before."

The lady laughed. "Well, you see, Mr. Jones used to bump into things. We thought maybe he was having eye trouble; so we took him to a doctor. Because Mr. Jones couldn't read an eye chart, the doctor tried different glasses on him and put things in his way. When he walked around the things without bumping into them, the doctor knew he had found the right pair of glasses for him. It took quite a whlie for Mr. Jones to get used to wearing the glasses."

Paul nodded. He knew about that!

"Now," the lady went on, stroking the dog's head, "he only has them off during the night. First thing in the morning he comes to me and I put his glasses on. He knows it is better for him to wear glasses."

Paul patted the big, curly dog. "You're a smart dog, Mr. Jones. We know our folks love us and want us to see where we are going."

Paul rubbed his glasses with a clean handkerchief and put them on. "I'll see you tomorrow, Mr. Jones," he said; and he went home whistling.

MEDICINE

From page 13

insomnia robs us of much-needed rest, there are countless books guaranteed to put us to sleep.

In these tangled, tormented times, when the world is nominally at peace but still sadly torn with the rack and ruin of war we can find recreation for fatigue, counsel for sober hours, and solace for sickness and sorrow among our book friends—"those companions of a mile," as Alfred Noyes' poem says, that go along with us for half an hour or so, make our way pleasanter while they are by our side, and then quietly step aside. "To

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Whoever makes two ears of corn, or two blades of grass, to grow where only one grew before, deserves better of mankind, and does more essential service to his country than the whole race of politicians put together.

—Dean Swift

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divest myself of a troublesome fancy," says Montaigne, " 'tis but to run to my books."

But the supreme recompense of book love is that in their high-class company something different is brought into our drab, workaday lives, giving us greater light and power. Goethe expressed it in living terms when speaking of Winklemann. "You don't learn anything when you read him," he said, "but you become something." In other words, our own personalities grow and develop as the creative genius in the book raises us to his level of discernment and wisdom. The contagious touch of his personality stimulates and enlarges our intellect, enriches our spirit, and strengthens our soul until, in truth, we become something.

Someone has very aptly said, "If you can sit down on an evening and enjoy a book until bedtime, you may know that you are among the fortunate ones of earth." Books need loving and reading—that is what they need. We need to love them and read them—that is what we need.

MUMPS

From page 29

have researched mumps vaccination. In 1916 a Dr. Wollstein actually infected cats with mumps. The Maryland State Department of Health announced on January 20, 1969, that an effective live attenuated mumps vaccine is available and is being used. This vaccine gives good immunity, comparable to that of the polio and measles vaccine. It is recommended for children very young or in poor physical condition and to ward off epidemics in camps. During the second world war it was learned that hyperimmune gamma globulin did help avoid epidemics.

If your child comes down with mumps and you do not know whether you have ever had it, your doctor can give you a skin test for the answer. If the test shows that you have not had it, play safe and take the vaccine. You may have had the disease without any swelling, with your disease diagnosed as influenza. That this used to happen more frequently than was recognized showed up during the second world war, made on a study of medical students who had no recollection of having had mumps in childhood. Skin tests revealed that fifty per cent had had it and were immune. The other fifty per cent were alerted.

Should you wake up some morning and find yourself with a full-blown case of mumps, put on your glasses before you take your medicine!

MEDICINE TODAY

TOO MUCH WASHING?

Hard scrubbing with brush or cloth irritates the skin and may permit greater bacterial invasion than no washing at all, says Dr. Ralph C. Richards of the University of Utah Medical Centre, U.S.A. Bathing probably removes only about seven per cent of skin bacteria, he adds.

Dr. Richards is participating in a study to discover more efficient means of cleansing. He has found, for instance, that "seventy per cent ethyl alcohol will remove more bacteria from the average person in one minute than five to ten minutes of hard scrubbing with a brush."

Dr. Richards says that the bacterial flora of a person's body may be as unique as his personality. He gives this example: If two people are exposed to the same environment, one may acquire a germ count on hands and forearms of only 100,000 while the other's count may be 100,000,000.

The face is bacteriologically the dirtiest skin surface; it supports 100 to 1,000 times more bacteria than the chest or back, he says. The back is almost sterile in many people. Related studies of the mouth show that it has such a high bacteria count that the child who sucks his thumb contaminates the thumb, not his mouth.

HYSTERECTOMY: PRO AND CON

Thousands of hysterectomies are performed yearly for abnormal conditions in the uterus.

One view is that the ovaries, through secretion of female hormones, are essential to a woman's health, help keep her youthful and delay the menopause. The other view is that the ovaries continue to release eggs that have no place to go, so why keep them? Furthermore, the hormones could accelerate development of cancer, particularly in the breast or ovaries themselves.

In a mammoth study of 9,000 New York women who had hysterectomies between 1928 and 1952, Dr. Frank P. Pauloacek of Chicago has reached a preliminary conclusion that it makes no difference if the ovaries are left in or taken out. Results appear to be about the same.

Women who retained their ovaries at hysterectomy for a benign disease had no greater death-rate than might be expected.

Nor was longevity increased by preserving the ovaries.

Dr. Pauloacek, now medical director of the Cancer Prevention Centre of Chicago, carried out the study at the State University of New York with Drs. Clyde L. Randall and John B. Graham. Another 1,500 women remain to be analyzed before final conclusions are drawn.

—Science Digest

NEW VACCINES

With vaccines against three viral infections of childhood—measles, mumps, and German measles—at hand, the prospects for additional vaccines are good, says Dr. Maurice R. Hilleman of the Merck Institute for Therapeutic Research.

Inroads against respiratory diseases are limited by the wide variety of viruses that produce them, he says. But progress is being made against specific agents. Influenza vaccines, for example, can reduce illness up to 90 per cent and these are being made with more potency and purity.

A vaccine against chicken-pox should be ready for exploratory clinical trials in the near future. Viral hepatitis and infectious mononcleosis, currently believed to be caused by virus, are strong candidates for vaccine research.

NEW SNAIL FEVER DRUG

Schistosomiasis (Snail Fever) a parasitic disease that affects an estimated 150 to 200 million people in tropical lands, may be brought under control when a new one-shot drug becomes widely available. The drug, hycanthone, has proved 80 per cent effective in extensive field trials, and plans are now under way for marketing it overseas this year.

—Science Digest

By E. G. White

Life is a Training School

Life is a training school from which parents and children are to be graduated to the higher school in the mansions of God.

The restoration and uplifting of humanity begins in the home. The work of parents underlies every other. Society is composed of families and is what the heads of families make it.

The circle of family and neighbourhood duties is the very first field of effort for those who would work for the uplifting of their fellow men. There is no more important field of effort than that committed to the founders and guardians of the home.

No work entrusted to human beings involves greater or more far-reaching results than does the work of fathers and mothers.

It is by the youth and children of today that the future of society is to be determined, and what these youth and children shall be depends upon the home. To the lack of right home training may be traced the larger share of the disease and misery and crime that curse humanity.

If the home life were pure and true, if the children who went forth from its care were prepared to meet life's responsibilities and dangers what a change would be seen in the world!

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