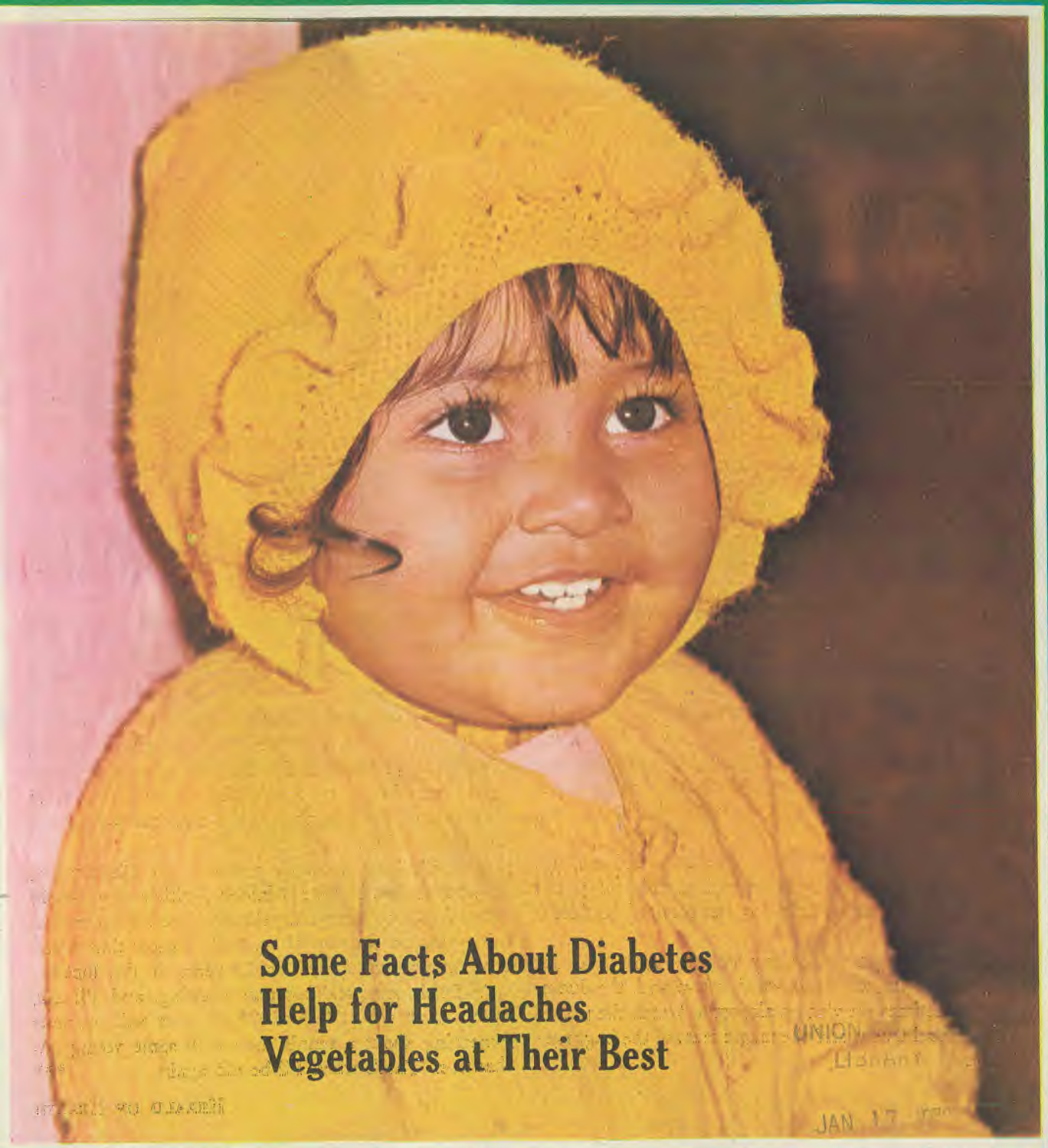
herald of health

NOVEMBER 1977



Some Facts About Diabetes
Help for Headaches
Vegetables at Their Best

Christopher and Daddy

Norman A. Kahl

ON A HOLIDAY morning, my son and I push back our plates, wipe some of the egg off our faces and come to a monumental decision.

"Well, shall we go?" I ask.

"Yes," says Christoper.

So the matter is settled, and Christopher scurries to the hall closet to drag out a slipper or an umbrella —seldom anything relevant to the mission at hand, but he makes his point: "Come on, let's get on with it. Time's awasting." His mother, with thinly disguised relief at being off the hook for a few hours, puts the finishing touches on him. Then we clamber into the car and we're off.

For these mornings belong to Christopher and me. When sluggards are still in bed we are on our way to adventure! We're not always sure where we're going, even after we've started. But we do know it's going to be a day like none before, and it always is.

Six blocks from home, Christopher begins to screech gleefully, and the contagion of a little boy's irrepressible happiness gets into his father until soon both of us are laughing and singing and generally behaving in a most unseemly manner. And if policemen weren't otherwise engaged in helping little old ladies cross the street, one of us, at least, would probably be held for observation.

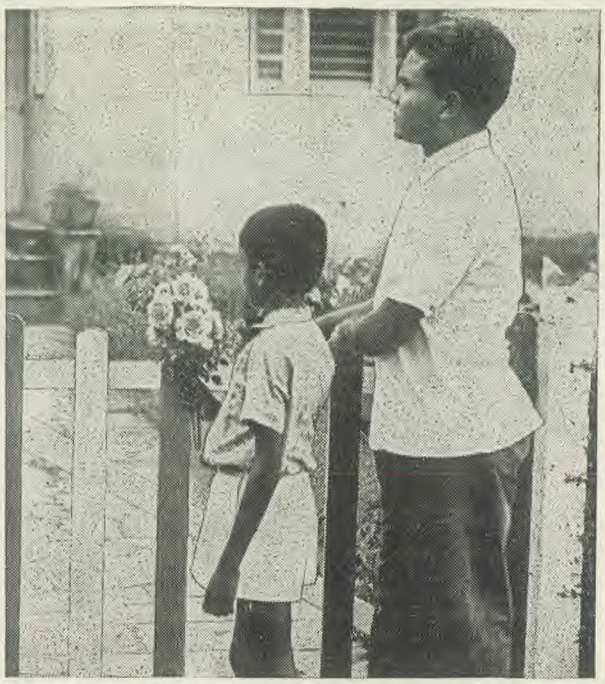
It's when we get to wherever we're going that my son pays me his finest compliment. We scramble out of the car and slam the door, and Christopher says, for all the world to hear, "Run, Daddy!"

Implicit in those two words is the whole charming crux of our relationship. Not only is he making it perfectly plain that, despite the 50 years that separate our ages, I am, indeed, his daddy, but he is also expressing his unfaltering conviction that I still can run. So I do.

When the weather permits, we stay outdoors, and the roster of fabulous sights and sounds, of places where an effervescent little boy can romp uninhibitedly, is virtually infinite.

On the right sort of day we may drop in at the lake for a swim, and for a word or two with the ducks.

Sometimes we visit an airport to watch the planes and the fuel trucks and the magic feats of the baggage-loaders.



Of course, we don't neglect the zoo, not so much to see the animals, but the people, especially the children. It's an ideal place to dart along twisting paths, scale rugged stone steps, play hide-and-seek around cages and pause occasionally to exchange grimaces with a perplexed chimpanzee. On mornings when it's not fit for even us to be out, we go to the museum.

Sometimes we'll just watch the trains and cars and carts. Christopher said "car" even before he said "Mama," and he's never relaxed in his love affair with wheels. So we immerse ourselves in the delights of things that go round, with an occasional bonus ride on the escalator, not to go anywhere but just to ride it. . . .

We start back for home so that we'll get there around one o'clock. His mother is always waiting for us at the door, delighted to see us back. Because, if life with Christopher is sometimes debilitating, it is also pretty wonderful, and you can't be away from him for more than a couple of hours without missing him. So, over lunch and before the afternoon Sandman takes charge, we regale his mother with a vivid portrayal of the amazing encounters into which our daring has led us.

If it's been a happy morning for Christopher, it's been no less so for his father. Neither of us would care to give up these marvellously carefree hours that belong to just the two of us. Still, I know that someday—maybe not for 10 or 12 years, if I'm lucky—we'll finish our breakfast one morning, and I'll ask, "Well, shall we go?" And Christopher will murmur something about a tennis date with some young enchantress. That's when I'll be old again. ***

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did you know

Gastric Juices Keep Bath Bugs at Bay

Most people will know that bathing on a full stomach is frowned on by doctors because of the heart attack hazard. But according to professors Fidelis Selenka and Joachim Borneff of Bochum and Mainz Universities swimming on an empty stomach is a bad idea too.

Gastric juices afford a measure of protection from salmonella, a well-known cause of food poisoning and, indeed, paratyphoid.

Nearly everyone swallows a mouthful or two of water during bathing and the risk of bacterial infection is quite high, but on an empty stomach the gastric juices are in low gear and other body defences are ineffective. So have a bite to eat and allow your stomach time to digest it before taking the plunge!

Fair Trade

Death rate from lung cancer is beginning to slow down—the apparent result of a switch to low-tar filter-tipped cigarettes. This switch has also led to an increase in coronary heart disease among cigarette smokers.

This trade-off of health hazards was revealed in a study by Dr. Nicholas Wals at Oxford (England) University. The most likely reason for the shift is that although use of filter-tip cigarettes produces less nicotine and tar, less air is mixed with the smoke given off and more carbon monoxide is formed (an average of 28 per cent more). Carbon monoxide, with other gases in tobacco smoke, has been linked to coronary heart disease.

Rocking Chair Is Good Medicine

The old-fashioned rocking-chair encourages mild physical activity. Elderly people who use rocking chairs seem to be in better mental and physical health than those who do not. Remember how grandmother and grandfather used to sit and rock by the hour? The rocking-chair enables everyone but the most feeble to exercise without regard to time or weather, and in a dignified manner. Use of the calf and forearm muscles encourages return of the blood to the heart and increases cardiac output. Possibility of lung congestion is decreased. Muscle tone is improved. The rhythmic motion of rocking is soothing and promotes sleep.

CLIPPINGS AND COMMENTS

Every portion of the water lily plant is edible. In China both leaves and tuber are eaten. In South America the edible seed, about the size of a pea, is made into a starchy flour for the preparation of a delectable pastry. The ancient Egyptians made flour from the seeds of the lotus and mixed the flour with milk or water to make bread. The Hausa of northern Nigeria use the seeds because they contain starch, oil, and proteins. The food value of the seed is believed to be equivalent to that of many cereals.

* * *

A converted winnebago bus that has run between Provo and Orem, Utah, a distance of some 13 miles, uses hydrogen as fuel. Hydrogen and air are mixed in the carburettor. With no carbon in the fuel, the only pollutant would be oxides of nitrogen, which is avoided by inducting tiny droplets of water—condensed from the exhaust—into the combustion chamber. This bus, it is claimed, will go 100 miles without refuelling. And the hydrogen is said to be cheaper to produce—from low-grade coal—than the cost of refining gasoline.

* * *

The years 1976-1985 have been declared the Decade for Women by action of the United Nations General Assembly. Resolutions call for continuing improvement of the economic status of women and for their effective and speedy participation in the development of their countries.

DO YOU puzzle over the best method of preparing vegetables? It is important. Vegetables have so much to offer. Their attractive colours, textures, and tastes give your meals wonderful eye and appetite appeal. Besides, they contain a generous amount of the elements necessary for health. A number of people believe that eating food raw is the most healthful, since cooking is supposed to destroy enzymes and "natural" vitamins.

Of course, many raw vegetables and fruits are excellent just as they are. And certainly if we could influence more people to eat more fresh, raw foods than poorly cooked ones, so much the better. Fortunately, salads have become a part of the menu since salad greens and other vegetables commonly used, such as tomatoes, cucumbers, and celery, have become available most of the year. Raw fruits are increasingly replacing high-calorie sweet rolls and cakes as more nutritious in the raw state than in desserts, and this is all to the good.

On the other hand, it is simply not correct to say that foods are *always* better eaten raw. As a matter of fact, some are more nutritious when cooked because they are more easily digested. We do not have the special enzymes in our digestive system nor do we harbour large numbers of microorganisms, as some animals do, that can break down sufficiently the cell walls of cellulose-rich vegetables, giving us access to all the nutrients they contain. Consequently, proper cooking makes some vegetables more nutritious because the nutrients are more available.

Juices

Akin to an unusual enthusiasm for eating vegetables in the raw state is the fervour some have for fresh vegetable juices. While juices are good, there is no valid nutritional reason for taking vegetables mainly in juice form. They

contain no magic qualities and for healthy persons, juices are no substitute for whole vegetables. So don't let anyone tell you the only way to get the most from vegetables is when they are juiced. Get all of the nutrients present by eating the whole vegetables—some raw and some properly cooked.

Preliminary Steps

The manner in which vegetables are put away after a trip to the market determines whether or not careful planning and wise buying will pay off.

Vegetables almost always require a little trimming to remove inedible material. This must be done carefully. Some nutrients are usually found in higher concentrations in the outer leaves of vegetables and in the layers of seeds, tubers, and roots. For example vitamin C is present in highest concentration just beneath the peel in the potato. Because of this, the peeling loss may range between 12 and 35 per cent of the vitamin C found in the potato.

Carrot peel is especially rich in thiamin, and riboflavin. Scrubbing these vegetables is often all that needs to be done. When peeling, remove only the thinnest layer in order to save food and nutrients.

The outer leaves of leafy vegetables are coarser but contain higher concentrations of vitamins and minerals than the tender, inner leaves. The leafy portions are considerably richer in nutrients than the stems or midribs. Chemical analysis of cabbage shows that there is approximately 2-3 times as much iron, almost twice as much ascorbic acid, and 21 times as much carotene (vitamin A value) in the green leaves as in the bleached ones. Some of the other green vegetables, including lettuce, follow the same pattern.

Where it becomes necessary to cut away outer leaves and other edible portions, the trimming can be cooked and made into a broth. If nicely seasoned this broth can be used as an appetizer or form the base of soups and gravies. Although long cooking will destroy a portion of some of the vitamin content, the broth will be a good source of water-soluble elements, especially minerals.

After this initial trimming and cleaning, vegetables are ready for proper storage. Green leafy vegetables, particularly, need to be washed and refrigerated *as soon as possible* for they retain their nutrients best at low *temperatures and high humidity*. It is well to store vegetables in plastic bags or containers, even in the freezer. If vegetables have wilted, putting them in cold water may revive them but nutrients already lost, such as vitamin C, cannot be regained.

The length of time raw vegetables are stored also affects the retention of nutrients, as well as their flavour and overall appearance. So stock only the kinds and amounts of fresh produce you can use in a relatively short time (not more than 3 to 5 days, generally).

vegetables at their best

Lydia Sonnenberg

Nutritive Value and Palatability

Now that the preliminary steps have been done, we are faced with our initial question: "For vegtables to be at their best, how should I cook them? Nutritive values too often take a secondary place to eye and appetite appeal. Housewives assume a choice must be made between nutrition and palatability. It is possible, however, to cook vegetables with a scientific approach so that maximum nutrition is retained along with preservation of those sensory qualities important to the enjoyment of any dish.

What are the factors that influence loss or retention of nutrients in vegetable cookery? A number of the nutrients, as well as flavour, can be lost in water. Some vitamins are sensitive to heat, light, oxygen, or the degree of acidity or alkalinity. Because nutrients vary in their sensitivity to these factors, it can't be said that there is *one best* way to cook vegetables. We can, however, sort out several of those factors that exert greater influence than others.

Amount of Water

One of the most important factors in cooking vegetables that affects nutritive content is the amount of water used. Many of the elements found in food are water soluble, such as the vitamins in the B complex, ascorbic acid, and some of the proteins and certain minerals. Consequently, the more water used, the greater will be the loss. The smaller the pieces of vegetables, the greater will be the surface area exposed to the leaching effects of water and thus the greater loss by solution. The pieces shouldn't be so large, however, as to greatly increase the cooking time.

Leaving vegetables such as potatoes in their "skin," of course, prevents nutrients from being dissolved into the cooking water. By this time you have rightly concluded that any method of cooking that limits the amount of water used will reduce major losses by solution. Of course, any water left at the end of cooking should not be discarded.

Using a *moderate* amount of water results in a milder taste and may be more pleasing to some members of the family who object to strong flavours. Vitamin A value is well-retained in vegetables because the carotenoids are fat-soluble and therefore not dissolved in cooking water.

Heat

Another important factor to control is heat. The shorter the time vegetables are subjected to heat, the better the retention of nutrients. Starting vegetables in boiling water shortens the total cooking time as well as the period of increased activity in enzymes naturally present in vegetables. This plant enzyme activity may hasten the destruction of some vitamins. Cooking with a cover on also reduces cooking time.

Exclude Air

Excluding air also helps retain those vitamins that are sensitive to a process known as oxidation. This can take place when air is incorporated into the vegetables while they are cooking.

Methods

Boiling: Perhaps the most common method is boiling. The amount of water varies from that clinging to the vegetable after washing to more than enough water to cover. Boiling can be a good method *if* you use only a small amount of water, and cook *quickly* until *just tender*. Use a saucepan with a tight-fitting lid that prevents the escape of steam so that vegetables can be cooked quickly. Short and rapid boiling is preferable to long, slow simmering.

Waterless cooking: So-called "waterless" cooking refers to cooking vegetables with only the water that remains on the vegetables after washing, along with the juices extracted during cooking. This method minimizes solution losses and might lead one to opt for waterless cookery. However, it generally requires a longer cooking time at lower heat and conserves nutritive values no better than cooking vegetables quickly in a small amount of water.

Steaming: Steaming is also a good method for retention of nutrients since very little water is used and thus lessened extraction occurs. Of course, steam leaches out some nutrients just as water does.

Pressure cooking: Steaming under pressure in a pressure cooker is a quick and satisfactory method, particularly for root vegetables and legumes. In pressure cooking only a small amount of water is used, air is excluded, and the time of cooking is short. Overcooking under pressure, however, results in significantly greater losses of food values than on-top-of-the-stove cooking. Consequently, *timing is very* important.

Panning (pan-frying): This is a quick way of cooking vegetables in a covered frying pan with a small amount of oil or other fat. No water is used, just that clinging to the vegetables. It is a good method for conserving the nutrients in succulent vegetables such as cabbage, kale, and broccoli.

Baking: Although baking is a good method of retaining some nutrients such as minerals and B vitamins other than thiamine, there is evidence that slow heat penetration during baking may result in losses of vitamin C. Consequently, it would be well to start the potatoes in a hot oven (204-216°C) to shorten the time of heat penetration. This will help reduce the period of increased activity of the enzyme that destroys vitamin C.

Let's Summarize

1. Buy fresh vegetables in small enough quantities so that you can use them promptly.
2. Minimize trimming and peeling as much as possible.
3. Store properly—most fresh vegetables at low temperatures and high humidity.
4. Prepare (peel and cut up) just before cooking—generally keep pieces *moderate* in size rather than in very small pieces.
5. Use just the amount of water that is practical for the method you are using. If any water is left after cooking, serve with the vegetables or use in some fashion in the menu.
6. Start with boiling water, cook quickly, just until tender.
7. Avoid incorporating air as far as possible.
8. Do not use soda.
9. Do not allow frozen foods to thaw before cooking.
10. *Serve promptly; do not keep vegetables hot for long.*

Which method should you use to serve vegetables at their best? Why not use different ways to make your meals more interesting? Vegetables that are properly cooked need only a touch of seasoning to enhance their natural goodness. Just apply the scientific approach and you will have vegetables at their best! ***

EARACHE

W. Schweischeimer, Ph.D.

YOUR LITTLE girl, Gaby, was not as cheerful today as she usually is, and by night you see her sleeping lightly. She whimpers from time to time, and tosses her head on the pillow.

In the morning she has fever. She cries and complains about pain in her left ear, she doesn't eat and is unhappy.

You are alarmed. You take her to the doctor, he looks into the aching ear with his fine instruments. He finds a slight case of otitis media, inflammation of the middle ear. Where does it come from?

The child opens her mouth, the doctor inspects the tonsils, indeed, the left tonsil is red and swollen. From here the infection of the middle ear has started.

The doctor says Gaby has to stay in bed. A hot water bottle is used for relief of the earache, a few pills are prescribed. No draught in her room, the doctor advises, and no running to the bathroom unless all windows are closed. In a few days your little girl is well again.

Infection of the Middle Ear

Fortunately, such slight cases of inflammation of the middle ear are the usual ones we see. The doctor by inspecting the ear canal sees at its end the eardrum, on the other side of which is the middle ear. When there is catarrh or inflammation, the eardrum looks red or it bulges outward as

a result of the infection and the increased secretion inside. If the secretion presses too strongly on the eardrum, it may rupture and the imprisoned discharge can escape into the outer ear canal. The "running ear" usually means immediate relief from pain.

Occasionally, however, the eardrum bulges without bursting, fever increases and other symptoms appear. Then the doctor might consider it necessary to puncture the eardrum. The artificial opening allows the discharges to escape and brings welcome relief from the painful pressure. Earache and fever have disappeared.

Punctures of the eardrum are considerably less frequent since we have antibiotics in the therapy of middle-ear infections. But don't be afraid of lasting harm to your child's hearing after such a puncture. After the disappearance of the infection, the puncture of the eardrum in most cases will heal swiftly and completely. Your child's hearing ability will be normal again.

Where now is the connection between little Gaby's infection of the middle ear and the swollen tonsils? The back of the throat is connected directly with the middle ear through the two Eustachian tubes. They are named after the Italian anatomist Bartolomeo Eustacchi who in the sixteenth century discovered those tiny tubes. They supply air to the middle ear, thus keeping the air pressure the same on both sides of the eardrum.

Swelling of the eardrum and inflammation of the middle ear is most often due to the spread of an infection from throat or nose through the Eustachian tubes. If a child has a cold or sore throat, he often has also a little earache which usually passes swiftly. Sometimes the infection of tubes and middle ear is progressive, and severe inflammation and earache may result.

Though in most cases an infection of the middle ear heals promptly and completely, complications may occur, and the more so if the child does not stay in the warm surroundings of his draught-free room.

One of the complications is an involvement of the mastoid bone behind the ear, due to infection. The mastoid cells are located in the blunt, bony projection behind the ear. An unusually severe infection of the middle ear may spread to the mastoid cells. Occasionally an operation of the mastoid bone will be necessary.

Hands off! That is the best and safest rule for foreign bodies in the nose and ear. Hands off! Until the doctor can see what is to be done.

Since introduction of antibiotics and sulfonamides into the treatment of suppurative ear diseases, such complications are much less prevalent. These antibiotics and chemical drugs are effective in the battle against the bacteria which cause the infection of the middle ear.

What to Do Before the Doctor Sees the Child

A child with severe earache should stay in bed, and he will do so gladly if his earache is sharp and continuous. The doctor might permit a child with mild infection to be up about the house provided he can be protected from draught. A baby who cannot tell about his earache, shows it by being irritable and cranky, reaching repeatedly toward the ear, and moving his head restlessly on the pillow.

You may apply heat externally by means of a hot water bag or an electric heating pad. In a few cases this may increase the pain, in which case don't use it, just put a scarf around the aching ear. In most cases, though, heat brings relief.

Never use ear drops unless your doctor gives you instruction to use certain ear drops. Putting hot oil or hot drops in the ear canal has no value and may do harm. The external heat supplied by the heating pad is as effective as hot ear drops and more so since it is continuous. Oil may do harm since it clogs up the ear canal. The doctor has to remove it to see clearly in the canal, and this is irritating and painful for the child. If the eardrum has burst, the oil mixes with the discharge and produces uncleanliness in the ear canal.

Babies and small children may cry long and loud when they suffer from earache. The consequent swelling of the nasal passages aggravates the inflammation in the tubes and the middle ear and brings new irritation. That is one of the reasons why the relief of pain is important for the child and why the doctor may use sedatives for a child suffering from severe earache.

A swelling or a boil in the ear canal may cause severe earache as well. Proper local treatment will bring relief. The child may have scratched with his finger the sensitive skin in the canal and an infection has resulted from the injury.

Foreign Body in the Ear

Severe earache may be caused by a foreign body with sharp edges which the child has put into one of his ears.

Don't touch it! Removal of a foreign body, which you don't even see, decidely is the doctor's business, not the mother's. Some doctors have this rule for mothers to remember: Never put anything smaller than your elbow into the outer ear!—and they mean it.

Small stones and peas and pearls which have been pushed into the ear by children will be dislodged by the doctor in most cases by simply syringing the outer ear canal with body-warm water. For dried peas, oil may be used for syringing, which prevents the dried peas from swelling and so becoming more tightly fixed.

Great damage to the child may be caused by unskilled attempts to remove a foreign body from the ear by the use of pins or other hard instruments. Both the ear canal and the eardrum may be injured. Even permanent deafness has been produced by such unskilled attempts.

A foreign body in the child's ear should be left alone until the doctor removes it by proper methods and with special instruments. The removal will be harder for the doctor if the foreign body has been more tightly fixed by unskilled attempts at removal.

A child will not be happy until the foreign body which irritates has been removed. He puts his fingers in his ear, rubs the ear or the head, and shows his discomfort in several ways. The baby makes it clear that something is wrong in his ear.

Foreign bodies enter the ear in part because the children put them in, or due to accidents such as insects entering the ear canal during sleep, or seeds and sand and little stones put in by accident. These foreign bodies are frequently located deep inside the ear canal, near the eardrum. Any unskilled manipulation in this region brings danger to the eardrum. Hands off...that is the best and safest rule for foreign bodies in nose and ear: hands off until the doctor finds out what can be done to remove the unwelcome object. ***

SOME FACTS ABOUT DIABETES

IT WAS Aretaeus, an astute Greek physician, who gave diabetes its name (from the Greek word meaning " to pass through," descriptive of the diabetic's intense thirst and excessive urination). For centuries the disease was incurable. The classical description by Aretaeus pictures the severe diabetic producing enormous quantities of urine day and night (polyuria), burning with thirst, consuming large amounts of water (polydipsia) and losing weight, though hunger is unabated (polyphagia). Weakness, dry skin, accompanied by intense itching, and eventual coma and death were the lot of most diabetics, especially children with the disease, until the 1920's. In 1921 the elusive "antidiabetic hormone," insulin, was extracted by Banting and Best of Toronto, Canada, in a form that was effective in relieving all the signs of diabetes. The Eli Lilly Pharmaceutical Company offered its facilities to the two physiologists, and in 1923 the first commercially available insulin was produced.

Years of careful research eventually led to the identification of insulin as a doublestrand protein molecule containing 51 amino acids. In 1963 the first "synthetic" insulin was produced in the research laboratory of Helmut Zahn of West Germany. It is interesting to note that 234 separate and distinct chemical reactions were needed for the synthesis of insulin. Commercially produced insulin is made by a complex and costly process of extraction of the hormone from cattle and hog pancreas.

Childhood diabetes more severe. Diabetes may develop at any age, but is much more common after the age of 40, when it takes a milder form. Obesity is often present in these patients with "maturity onset diabetes," and when weight is reduced the diabetes is improved. When the disease occurs earlier in life, not only are symptoms worse and control more difficult but acute complications are more frequent and life expectancy is reduced, even when treatment is adequate. In 1916 it was unusual for a diabetic child to live for two years beyond the time the diagnosis was made. Now, in the insulin era, life expectancy following onset of the disease may be as high as 50 years for these children.

Insulin and blood sugar. It is estimated that the average (non-diabetic) adult produces 40 to 50 units of insulin each day. Every time there is a rise in blood sugar, an appropriate amount of insulin is secreted to counteract the rise. In the moderate or severe diabetic there is usually an absolute deficiency of insulin, and the blood sugar level must be controlled by restriction of carbohydrate and total calories, and the administration of insulin.

For most diabetics, the amount of sugar passed into the urine is a good measure of the excess sugar in the blood and can be used for day-by-day control of the disease. A convenient, specially treated paper strip is dipped into the urine, and the colour change mirrors the amount of sugar present. Some young diabetics may need to use the more

accurate test-tube method for measuring urine sugar. A periodic blood sugar test is also important in maintaining good control.

Factors affecting blood sugar. Unless the diabetic follows a carefully regulated way of life he is likely to have undesirable high and low blood sugar levels. Increased food intake and weight gain create a greater need for insulin. Exercise and weight loss, on the other hand, reduce the need for insulin. Acute infections, fever, sunburn, pregnancy, and certain hormones (thyroid, cortisone) increase the insulin requirement.

Many adult diabetics can maintain satisfactory control by dietary means alone. If weight is reduced and the amount of refined sugars (and natural sugars) is kept at a minimum, it is often unnecessary to resort to the use of oral hypoglycemic agents or insulin.

In spite of the best control, acute and chronic complications do occur. More than 90 per cent of childhood onset diabetics will have chronic complications within 20 years. These may include retinopathy (eye disease), kidney disease, and peripheral nerve disease (neuropathy). In all diabetics the process of arteriosclerosis (hardening of the arteries) is accelerated, and therefore strokes, heart attacks, and gangrene of the feet usually occur at an earlier age.

Forty per cent of diabetics are unaware they have the disease. For these, and those diabetics who do not maintain good control of their condition, acute and chronic complications will occur sooner or later. It is a truism that "other things being equal, the diabetic who knows the most about his disease lives the longest and has the fewest complications." ***

Nutrition During Pregnancy

Tapan K. Basu

PREGNANCY was once called "a nine months' disease with a spontaneous cure". It is, of course, in no sense an illness, but the normal process of reproduction. For the expectant mother, however, it is a period of stress and her health needs careful supervision.

The nutritional needs of a woman during pregnancy are greater than at other times of her life. The reasons for this are simple and straightforward—a pregnant woman is building up in her own body the tissues and organs of a new human being. If she gets adequate nutrients, she is likely to be in good health throughout her pregnancy and to have a normal labour. Every mother wants to do the best to give her baby a good start in life. A well balanced diet during pregnancy will do much to ensure a healthy child. The diet of an expectant mother has two aims:

1. To produce a strong and healthy baby.
2. To safeguard her own health.

It may not be possible to give the foetus what it needs, if the expectant mother suffers an actual deficiency of essential elements, such as vitamins, iron, calcium and proteins. In such a case, both expectant mother and child will be malnourished. Furthermore, poor nutrition of the expectant mother can seriously affect the placental tissues so that needed nutrients may not pass through. It is believed that dietary deficiencies increase the risk of producing a malformed foetus. Severe malnutrition reduces fertility and therefore the likelihood of conception. The weight of the infant at birth can also be influenced by maternal nutrition.

There are no special diets for pregnancy nor are there any particular foods that must be taken or avoided. Nevertheless, most pregnant women require some general dietary advice as to how best to modify their usual diet so as to supply the extra needs for nutrients. General advice can be given along the following lines:

Calories

Extra calories are required for the growth of the foetus. The Basal Metabolic Rate (energy expenditure at rest) increase during pregnancy, which again raises calorie requirements. The British Medical Association recommends 2,500 calories daily in pregnancy. It is important to remember, however, that an excessive intake of calories is harmful and increases the risk of toxaemias of pregnancy. A proper balance between energy intake and energy output is necessary.

Therefore it is good to lead an active life (hobbies, sports, etc.) in a modified form until the last few weeks. Walking is the most satisfactory form of exercise.

It has been observed in a study of a normal group of pregnant women in Aberdeen that the average gain in weight was 12 and a half Kg. **It is very important to take care not to put on too much weight during pregnancy.** A large gain in weight leads to increased blood pressure and causes strain on the kidneys: 12 and a half Kg. is the maximum amount of weight one should gain and most of this will be in the later months.

Proteins

Protein is the most important food for pregnant women as it is necessary for the formation of new life. Daily requirements of protein are:

1st half of pregnancy—1 gm. per Kg. body weight plus 20 gms. (normal requirements for adult).

2nd half of pregnancy—1 gm. per Kg. body weight plus 40gms.

It is advisable to take a diet containing both protein of animal origin (e.g. eggs, cheese, milk, etc.) and protein of vegetable origin (e.g. cereals, nuts, peas, beans, soya beans, dals, etc.) as the body can make fullest use of these proteins in this combination.

Vitamins

If a good mixed diet, containing milk, fruits, and vegetables, is available, there is no real need to take any vitamin supplements. But if there is any doubt about the quality of the diet, a concentrated fruit juice or vitamin C tablets and vitamin A and D tablets are recommended.

Vitamin C is required for elasticity of the tissues and blood vessels. An observation by G. I. Wideman, **(American Journal of Obstetrics and Gynaecology)** links vitamin C deficiency with premature rupture of foetal membranes.

Another important function of vitamin C is to detoxicate the toxic substances. Nicotine from cigarettes makes it harder for the vitamin C to work, because the vitamin C is used up in detoxicating the nicotine in the system. It has been observed that non-smoking pregnant women could maintain adequate vitamin C levels by taking 350-500 mgs., while smokers needed as high as 3,000 mgs. to meet the same purpose. In view of the fact that smoking has so many other harmful effects and also increases the incidence of still births and smaller babies it is advisable to give up smoking altogether. **Remember that the smoke from one cigarette may speed up the heart of the unborn baby as much as 25 per cent above its previous rate.**

Vitamin C is also one of the factors that influence absorption of iron, required for maintaining normal haemoglobin concentration, which is one of the most important requisites in pregnancy.

Although there is seldom any need for supply of vitamin D to adults, the World Health Organization expert committee feels that the increased needs for calcium during pregnancy make it desirable to assure an adequate supply of vitamin D so that there can be no risk of impairment of calcium absorption and utilization.

Minerals

Calcium—The extra need for calcium in pregnancy is for making the bones of the foetus. Therefore, pregnant women should increase their calcium intake. The W.H.O. expert committee agrees that 1,000 to 1,200 mgs. of calcium per day during pregnancy is a suitable amount. The needs of this amount are best met by taking 2 pints of milk daily. Iron.—Lack of iron can lead to miscarriage, anaemia and foetal malformations. As I have mentioned above, iron performs a very important function in regulating haemoglobin content.

The W.H.O. study group on iron deficiency anaemia has suggested that anaemia can be considered to exist in the pregnant woman when the haemoglobin concentration is below 10 gm. per 100 ml. of blood and the committee agrees that this level may be accepted as a general indicator of the lower limit of physiological adjustment during pregnancy. In other words, women whose haemoglobin concentration becomes lower during pregnancy, should be considered as potentially or actually anæmic and appropriate investigation and treatment should be investigated.

Iron tablets may be supplied by the hospital during ante-natal care, and if so, should be taken daily.

Other factors

The fluid needs are increased in pregnancy and a liberal fluid intake is desirable. Milk has already been recommended. A glass of water immediately on rising in the morning and about half an hour before each main meal is desirable.

A pregnant woman should attend a clinic or see her doctor at regular intervals for ante-natal examination.

The suggestions, mentioned in this article, will help you to eat sensibly and remain fit during your pregnancy—they will give you the best possible chance of a normal labour.

The wise pregnant woman will fortify her diet with all nutritional essentials. She will also remember that her chances for a normal delivery and a quickly regained figure are better if she watches her calories. ***

Providence in Medicine

Albert E. Hirst, M.D.

IF ONE ACCEPTS the basic premise that God is good, one would not be surprised to find that the same God who provided plants for food may also have prepared plant sources for man's ills. A review of the discovery of some of the most outstanding medical remedies suggests that this is indeed the case; most of our highly effective remedies for disease have come either directly from plant sources or have been synthesized as a result of their having been first discovered in plants. Although a few have been known for centuries, many more have been discovered in recent years.

The drug digitalis has been a great blessing to the patient with a failing heart, dramatically relieving his symptoms and prolonging his life. We owe the knowledge of its correct use to a dedicated Christian physician and botanist, Dr. William Withering. Shortly after graduation from medical school in 1766, he became interested in botany and was able, ten years later, to publish the most complete book available on the subject of plants indigenous to England. On one occasion, he was presented with a family recipe used for the treatment of dropsy (swelling of the ankles). Although the medicine contained 20 or more different herbs, he quickly singled out foxglove as the active ingredient. Foxglove had already been tried and rejected by other physicians as too toxic, since severe nausea and vomiting were considered essential for its action. It remained for Withering to demonstrate that when the drug was given in smaller doses, improvement occurred before digestive disturbances. The development of nausea or vomiting were shown to be an evidence of an overdose of the medicine. From his own experiments, Withering learned that the concentration of digitalis varied in different parts of the plant and at dfferent times of the year. Best results were obtained by gathering the leaves before blossom time, removing the midrib, and drying in the sun or before a fire. The leaves were then ground into a powder. Only a tiny amount (one to three grains) of the powder taken twice a day proved to be effective in the treatment of dropsy, producing a dramatic loss of fluid through the kidneys.

Impressive refinements have been made in recent years in the treatment of heart failure. The active ingredients of foxglove leaf are now available in pure form, assuring an accurate and uniform dose, and requiring only one thousandth as much as when the whole leaf is used.

History reveals that malaria has been the world's most devastating disease, responsible for more deaths per year than any other transmissable disease. As recently as 40 years ago, an estimated 800 million were affected with an annual death toll of 2 million. Men were completely helpless against this scourge until the middle of the seventeenth century when cinchona bark was found to be an effective treatment. The first known use of the bark was in the treatment of the wife of the Count of Chinchon, who was taken ill with tertian fever at Lima, Peru. Following her prompt recovery, the count introduced the bark to Spain, and its use gradually extended throughout Europe. It was not until 1820 that the active ingredient quinine was isloated and proved effective, even in small doses, in preventing symptoms of the disease, despite exposure to infected mosquitoes. Without this medicine, it would not have been possible for thousands of missionaries to survive in the hot and humid countries of the world.

Some remedies of plant origin have been known since antiquity. Thus, Hippocrates, living in 40 B.C., was familiar with the use of an extract of willow bark for pain and fever. By the time of Galen in the second century A.D., many therapeutic uses for willow bark were known. In later years, willow bark fell into disrepute because illness was attributed to demon possession, and disease was considered a punishment from God. To help such persons recover their health would, of course, be thwarting God's purposes!

It was not until 1763 that willow bark was rediscovered by the Reverend Edward Stone, who was seeking a substitute for the expensive cinchona bark from Peru. He reasoned that the fact that the willow tree grew in a moist or wet soil where aches chiefly abound might provide support for the concept that remedies lie not far from their causes, and proposed that this might be the intent of Providence in order to provide relief for man's ills. He tested the value of willow bark in a group of 50 patients with a variety

of illnesses including chills and fever and found it gave uniformly excellent results. In 1838, the active principle in willow bark was found to be salicylic acid, a highly effective remedy but too bitter tasting and irritating to the stomach for general use. A less toxic form, acetyl salicylic acid or aspirin, was synthesized in the latter part of the nineteenth century, and remains today as a remarkably effective remedy for the relief of pain in arthritis, as well as for simple headache and fever. Although considered to be one of the safest analgesics, aspirin may on rare occasion produce severe hæmorrhage, especially from the stomach. Some of these reactions can be avoided if the tablets are dissolved in water or carefully chewed before swallowing.

The most effective medicines developed in the twentieth century have been the antibiotics, also known as miracle drugs because of their spectacular effect in curing infections that were previously fatal. Most antibiotics are derived from naturally occurring moulds, which are closely related to plants in that they have stems, although they lack roots or leaves.

No doubt many bacteriologists have had the experience of finding their cultures of bacteria contaminated by mould, but it remained for Alexander Fleming to observe in 1928 that where the mould and bacteria were in contact, the bacteria were destroyed. In his own words, "This was an extraordinary and unexpected appearance and seemed to demand investigation." Determining the species of mould was not easy, since there are several hundred varieties, but it was eventually identified as *Penicillium notatum*. Further testing revealed its antibacterial action was effective against many different bacteria harmful to man, including the bacteria which cause streptococcal sore throat, lobar pneumonia, epidemic meningitis, and diphtheria. Even the organisms causing syphilis and gonorrhoea as well as some large viruses proved susceptible. This was the first substance known to be capable of destroying bacteria without harming white cells of the blood. In honour of the mould origin, Fleming named the antibiotic penicillin.

Unfortunately, early attempts at isolation and concentration of penicillin failed. Finally, during World War II, Florey and Chain at Oxford succeeded in extracting a small amount of penicillin and demonstrated its value against a number of human infections. At the time, World War II had taken a serious turn and it proved impossible to provide the research and development necessary for production of the medicine in England, so the English investigators brought cultures of penicillin to the United States, where methods for its mass production were developed in the early 1940's. In the intervening years, a number of additional antibiotics have been discovered, including some that are effective against bacteria not susceptible to penicillin. These antibacterial substances of plantlike origin have revolutionized the treatment of almost all infections, and have resulted in the saving of millions of lives

Recent years have seen an intensive worldwide search for substances of plant origin in the fight against cancer. Every possible lead has been investigated, including such unlikely sources as medical folklore and even the remedies used by witch doctors among primitive tribes. The National Cancer Institute at Bethesda, Maryland, has served as a national clearing house in the search for anticancer agents. Of 70,000 plants that have been screened, approximately 1,800 have shown some promise in cancer therapy.

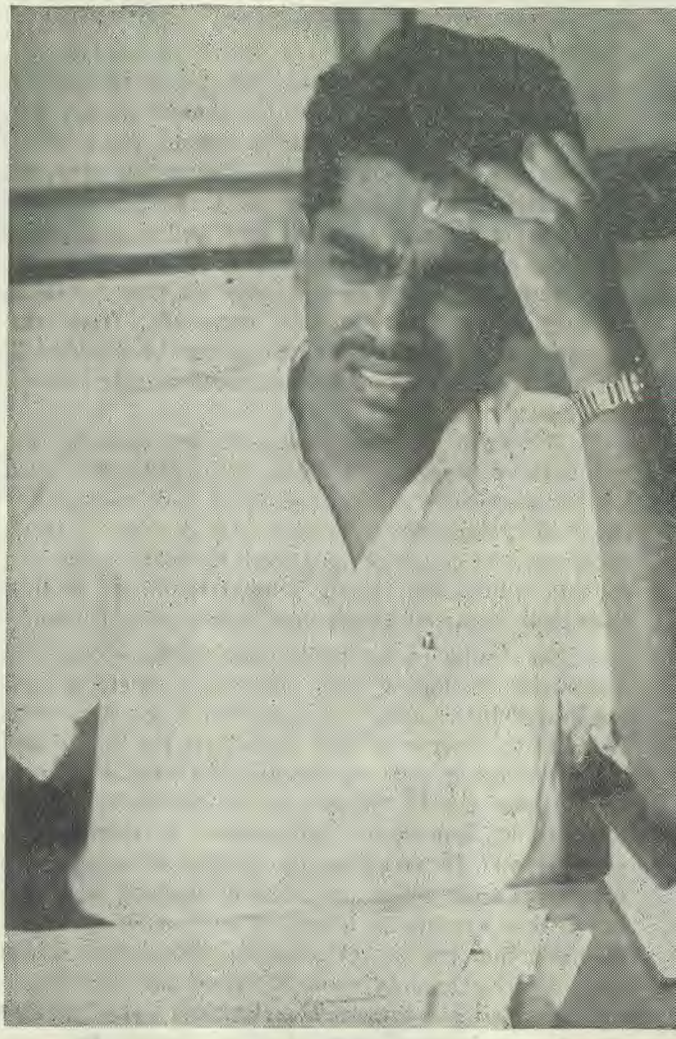
Two useful anticancer remedies, vincristine and vinblastine, have been isolated from a tropical variety of the common periwinkle plant, and each has been found to be remarkably effective in certain types of cancer. Vincristine has proved to be most useful in producing remissions in acute leukaemia, with disappearance of all evidence of the disease in about half the cases, while vinblastine has shown greatest promise in the treatment of Hodgkin's disease: vinblastine alone results in remissions in about 30 per cent of the cases, but this figure rises to 70 per cent when vinblastine is used with other anticancer treatments. Admittedly, many of the patients treated with these drugs have not been observed for prolonged periods of time, and some may develop recurrences requiring further treatment. Nevertheless, the results are encouraging and indicate that certain types of cancer that were previously considered hopeless are now responding to treatment.

The medicines mentioned are only a few of the many of plant origin that have greatly improved the quality of life as well as longevity throughout the world. It is currently estimated that nearly one half of the medicines used today are of plant origin. One reassuring aspect of the medical therapy currently employed is the infrequency and mildness of toxic reactions when the drug is professionally administered. Such reactions usually consist of digestive disturbances, drowsiness or rash, and are usually of minor consequence. Professional supervision, is, of course, essential in the treatment of cancer, since effective treatment generally requires doses that are close to the tolerance of the body.

To those who would like to carry on a search for additional plants of medicinal value, a word of caution is advisable. The plant world contains both harmless and poisonous drugs. Some of the most toxic drugs, including strychnine and nicotine, are of plant origin. The rapid progress in isolation of new medicines in recent years has been the result of cooperation between highly trained specialists, including botanists, chemists, pharmacologists, and physicians. New discoveries, and no doubt many more will be made, are most likely to be made by those who are experts in these specialized fields. ***

Help for Headaches

J. DeWitt Fox, M.D.



IT TAKES brains to have a headache. Headache has become the most common malady of modern man. Where once the common cold was the No. 1 tormentor, the headache has pounded its way into first place.

To remind him of his headache, all a patient need do is listen to radio commercials for headache remedies. Each tick of the clock, each heartbeat, is portrayed as a jolt to a sensitive skull, for which aspirin and a myriad of other cures are suggested. Is it any wonder that we swallow a couple of tons of aspirin daily and take potions, pills, and tranquillizers in an effort to relieve the pain?

Although many a headache is quickly relieved by a tablet, most recurring headaches have some emotional or physiological basis, either of stress or of organic illness. Fortunately 85 per cent of headaches are the tension type, stemming from worry or a rigid perfectionistic attitude toward life.

Headaches are traceable to dilated blood vessels in the head, the effect of muscle tension, or both. Most headaches are part of the response to stress, which the person can do much to control.

The happy side of the headache picture is this: 90 per cent of headaches are not serious; fewer than 1 per cent result from life-threatening illnesses. Only three headaches in a thousand are likely to be caused by a brain tumour. So relax. Just letting go may make your headache go, too, because many a headache results from tension alone.

"Headaches plague most eggheads," says Dr. Henry Ogden of Louisiana State University School of Medicine, who has studied some five thousand sufferers. His survey showed that people with no education have almost no headaches. Headache is seldom seen in a mental institution. The most likely headache patient is an unmarried woman under twenty years of age.

Headache is no respecter of persons. It strikes men and women (children only rarely), in city or rural area, in every economic level. The white-collar worker is most vulnerable to headache. In one survey the percentage of people having headache was as follows:

White-collar	28 per cent
Executives	5 per cent
Professional people	4 per cent
Manual workers	4 per cent
Housewives	2 per cent

Headache may be related directly to pressure of study or work. Dr. Ogden found that medical students have the most headaches (80 per cent), followed by businessmen (77 per cent).

Nearly all headaches might be termed vascular (of blood-vessel origin), because the combination of dilated blood vessels in the head, and muscle tension clamping down on pain-sensitive distended arteries is the cause. Your brain makes up only one fiftieth of

your body weight, yet it uses one fifth of the blood the heart puts out. Every six seconds a complete exchange of blood is made in the brain—ten exchanges each minute. So any muscle tension that holds blood in the head can produce engorgement of the vessels and resulting headache.

Tension Headache. Pain originates from contracted muscles of neck and head resulting from stiff posture and anxiety. Tension headache seems entirely physical in origin. When a person experiences anxiety, scalp and neck muscles tighten up, blood vessels dilate and become congested. The clamped muscles do not get enough blood. This deprivation causes intense pain.

Why does one person get such pain and another person doing the same work does not? Because the tense one, with taut nerves and muscles, hurls himself at his work—at columns of figures, pages of shorthand, homework, or the road ahead.

Personality may play a part in bringing on tension headache. Dr. Arnold R. Friedman founder of the Headache Clinic, Montefiore Hospital, New York City, said that "the way a person walks (shoulders and neck hunched), or talks (head craning forward or held stiffly to one side), or sleeps (curled up tightly), projects his tense personality."

To treat tension headache, apply heat and massage to the neck. The person can do much to control emotional conflicts and to avoid leading a strenuous life. He would do well to exercise in the open air as much as possible. Walking in the countryside could take his mind, off himself and his troubles as he breathes in the pure air, sees the beauties of nature, and hears the birds singing.

Migraine. This mighty migraine, toughest of all headaches to handle, is the one-sided severe headache, with nausea and vomiting. Often it is preceded by an aura, or warning of double vision, black spots, and flashes of light before the eyes. The name was derived from the Greek words *hemi* ("half"), and *kranion* ("skull"), and sufferers wish they had no skull at all!

Migraine begins in the teens, is more common in girls, diminishing during pregnancy, and may cease after menopause. It tends to run in families, and it gives brain-wave changes similar to those of epileptics.

Researchers find migraine among the intelligent and educated. Dr. Walter C. Alvarez, emeritus consultant in medicine for the Mayo Clinic, refers to it as something like the aristocrat in the world of headache. And he adds, "If you want a good wife, just find one with migraine. She'll keep the house spick and span." She does this because of her perfectionistic personality, inflexibly high standards, and fastidiousness. Although ambitious, she is sensitive to criticism and given to fear, doubt, and worry.

Migraine attacks are caused by dilated blood vessels in the head. Under pressure the migraine sufferer tightens up and the arteries to the brain and scalp grow tense and constricted. When they relax they become distended, allowing an unrestricted amount of blood to go pounding into the head. This is why migraine often strikes after the pressure is off —on week-ends, holidays, at parties.

A typical migraine attack lasts twelve to eighteen hours. It may be reduced in severity and duration by an injection or ergotamine tartrate or this medicine combined with caffeine by tablet, injection, or suppository.

The Cluster Headache. Signs of the cluster headache are brief periodic floor-pacing attacks of intolerable pain occurring in clusters of three to five days. It is also called histamine headache, and may awaken the patient at night with flushing of face, stuffiness of nose, and watering of eyes. Often it is on one side only.

The method of treatment for the cluster headache is histamine desensitization and general treatment as advised by your doctor.

Allergy Headache. Signs of allergy headache are steady, dull pain, nose blockage, sneezing, red eyes caused by reaction to pollen, food, cats, dust, and other allergens. Sinus headache belongs in this group. The method of treatment for allergy headache is antihistamine injections or capsules. Stay away from allergens. Desensitization may help prevent attacks.

Eyestrain Headache. Blurred vision and pain in the eyes and other parts of the head after prolonged sessions at the movies or reading are signs of eyestrain headache. It may produce pain similar to tension headache from tight forehead and neck muscles.

The method of treatment for eyestrain headache is eye tests and proper glasses, if needed. Rest the eyes. Take the treatment given for tension.

Other Headaches. Fever as in influenza, high blood pressure, brain tumour, digestive upset, overindulgence in alcohol, fatigue, and some twenty-seven other causes can produce headache, say doctors at Montefiore Hospital.

Your physician is the only one who can ferret out the real cause of your headache, but there are

certain general measures you can follow to bring relief. Because 80 to 90 per cent of both tension and migraine headaches are triggered by emotional stress, certain changes in your life and attitude will do much to relieve such headaches.

Headache Prevention. Tips for preventing headache deal largely with changes in the patient's life and way of thinking, which he must do for himself. Thousands of sufferers have experienced relief once they have recognized the headache as a cease-and-desist order for their way of life and obeyed the order. This does not limit one's life. One patient said, "Once you've noted your limitations, they begin to expand. You find you can do more because you have yourself under control, and consequently you have more reserve energy with which to enjoy life free of headache."

Here are some suggestions for sidestepping headache:

1. *Avoid worry.* About 85 per cent of tension headaches have worry or some emotional-stress factor at the root of the problem. Worry seldom solves anything. It only makes you tired and tense. Do something about the problem, then get it off your mind.

2. *Have a physical examination.* The best thing you can do about a headache is to seek a skilled doctor's opinion to rule out any organic basis for headache.

3. *Develop tolerance.* Learn to see the other fellow's point of view. Be less fussy about minor details. No husband, wife, or associate is perfect, but they all have good qualities.

4. *Reduce your work load.* Over-concentration on the job leads to headache. Do not try to do all the work yourself. Call on your assistants. Do not drive yourself when tired and irritable. Everyone has off days. If you attempt to do as much as on your energetic days, fatigue, tension, and headache may result.

5. *Avoid resentment.* If you feel resentment, anxiety, and disappointment, modify your standards. It is essential to get satisfaction out of what you can have and can do.

Although physiotherapy and drugs may relieve and control acute headache, the basic aim of doctors is to help the patient discover what he is doing to himself that brings on the headaches.

By talking out his problem with his doctor, the patient can gain a greater understanding of the situation that produces his tension and headaches.

In essence, all headache, can be a useful lesson in sensible living. The more we heed the warning of headache, the less frequent and less painful it will be.

If you have a headache, it is only a symptom and not a disease. There is an underlying reason, and it is up to your physician to find the cause and correct it. ***

Because hypertension can be so readily detected and because certain types can be cured and others controlled, it is of utmost importance that persons with high blood pressure learn of their condition, secure proper treatment, and maintain lifelong followup so as to prevent the serious consequences likely to occur (stroke, heart failure, kidney damage, et cetera).

The following article by Dr. Milton Crane, who has devoted many years to hypertension research, explains what hypertension is, what some of its known causes are, and how it can be controlled.

MRS. ROGERS sat quietly crying to herself in our hypertension diagnostic laboratory. As I looked at her I wondered what could be troubling her. Surely the anticipation of a needle puncture for a blood test could not be the cause of her distress, or was it? Since my colleague, who was in charge of the laboratory studies that day, was busy, I went to see whether I could be of help. Quietly I asked, "What is the trouble? Are you afraid? Have we offended you in any way?" To each question she replied, "No," through her sniffles. Then I asked, "Why do you cry?" She replied, "I don't know. I just feel like crying."

After the preliminary work was done my colleague reported, "Mrs. Rogers had a pulse rate of more than 130 per minute, besides the hypertension. I think she has hyperdynamic adrenergic syndrome."

Until recently, many patients with elevated blood pressure have been simply diagnosed as having "esential hypertension," another way of saying "high blood pressure, cause unknown." Most laboratory studies have been geared to assess damage done by the high blood pressure with little effort made to turn up curable causes of the condition.

Today there is a lively interest in this condition because much has been learned about underlying causes. With each passing year, new disease entities are recognized within the complex of "essential" or primary hypertension. The recent discovery by Dr. Edward Frohlich and his associates of the basic defect in physiology that induced the symptoms of such patients as Mrs. Rogers is but one example in the unravelling of the causes of hypertension.

HIGH BLOOD PRESSURE

Milton G. Crane, M.D.

What is blood pressure?

When the heart beats, the heart muscle builds up pressure, sending about a cupful of blood through the aortic valve into the aorta, the large blood vessel leaving the heart, and on into the arteries. The peak pressure is called the "systolic pressure" and is measured by the distance in millimeters that it will raise a column of mercury (example: 120 mm. of mercury). When the heart relaxes between beats, the pressure in the heart chamber drops, the valves of the aorta close; and the arteries, which have elastic tissue in their walls, recoil. This maintains a gradually dropping pressure during the fraction of a second that the heart rests. The arterial blood pressure just before the heart contracts again is called "diastolic pressure" (example: 80 mm. of mercury).

For extremely accurate values, research physicians place a needle in an artery and connect it to a delicate pressure-sensing and recording device. But for ordinary clinical needs, blood pressure can be measured with reasonable accuracy by using the familiar inflatable rubber cuff and a stethoscope. Systolic pressure is that shown on the pressure gauge when the sounds of blood flow first become audible with the stethoscope over the artery as the cuff pressure is slowly released. Diastolic pressure is the reading when the pulse wave of blood flow decreases sharply and cannot be heard.

What keeps the pressure in the arteries at a certain level? Several factors: the total volume of blood in the body, the thickness (viscosity) of blood, the rate at which the heart is beating, and the degree of constriction or stiffness of small arteries called arterioles. These all play a role in maintaining a person's blood pressure.

The arterioles are a critical element. They serve as safety valves to protect the capillaries, with their tissue-thin walls, from excessive pressure. How constricted the arterioles are depends on *adrenaline* from the adrenal gland, *angiotensin* from the kidneys and liver, and the autonomic nervous system, which regulates various bodily functions. How stiff or inelastic they are appears to be determined by the amount of *soduim* in their walls. That, in turn, is determined by the action of a hormone called *aldosterone*, produced by the adrenal glands, on the body cells and on the kidneys.

What is high blood pressure?

It is difficult to give a precise definition of high-blood pressure (hypertension). Normal blood pressure is based on average pressure obtained on many well persons; but this does not take into account changes that can occur in an individual patient, which may represent a dramatic relative increase in pressure. For example, a healthy person could have a usual blood pressure of 90/50 for years. Later, for some reason, a defect in pressure regulation could develop, resulting in a blood pressure of 135/90; but it would cause no alarm because it was in "normal" range. Actually such a person has had a serious change in blood pressure.

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Getting on with People

ONE OF the most important things to learn if we would live the good life is to refrain our tongues from evil; and not from evil only but from everything that is harmful to other people. It is good never to say behind a person's back, what we would not say if he were present. Today in the office we talked about someone no one seemed to like. "It's all very well being able to get on with people you like," said one woman, "but it's getting on with the folks you don't like that is more important."

"Oh, I just ignore anyone I don't like," said another girl, "but I do agree that it is a gift to be able to mix with everyone."

Is it a gift? or is it something more? Should we exert ourselves to be nice to people we find difficult or should we avoid them and leave it at that?

Now and again we meet folks who do not merely leave it at that; they have the knack of rubbing everyone the right way instead of the wrong way. These are the people who have cultivated the art of getting on with people.

What is it that makes us like some people more than others? I think it often happens that the persons we cannot get on with are those who make us feel uneasy about ourselves. They seem to present a real picture of ourselves to ourselves, thus undermining our confidence. So we instinctively dislike them.

"Yes, that is true," said one of our members. I remember a girl at school whom I disliked very much, but now I come to think of it, her only fault was that she was everything I was NOT. She was slender, smooth-complexioned with dark, curly hair, while I was tubby, ginger-haired and full of freckles. Then one day we met in the library and discovered we read the same sort of books. We started chatting and found we had the same sort of homes; soon we were the best of friends."

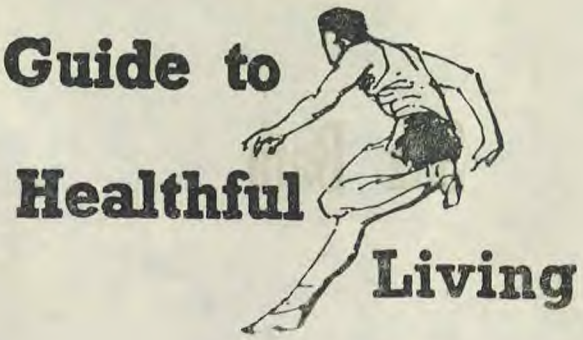
Everyone knows the classic definition of a bore—one who will insist on talking about herself, her house and her children when you are longing to talk about yours.

Do we, I wonder, ever take honest stock of ourselves, try to see ourselves just as we are? Perhaps we are just as difficult to get along with, just as irritating to other people as we consider certain of our acquaintances to be. It is certainly not a bad idea to consider this aspect seriously. It could be that those very people we are so ready to call irritating or difficult are actually too polite to point out our faults to us.

Very often grumpy people are unhappy people. Their way of getting rid of some of their pent-up feelings is to be abrupt and act intolerantly toward those with whom they come in contact. It is definitely not easy to get on with such people, but how much better to try and overcome our aversion, animosity or critical attitude —call it what you like—than to let their manners get on our nerves.

Strange as it may seem, we have all too often found that when we make a sincere effort to get along with those for whom we feel an aversion, they turn out to be quite nice to know.

Another good thing to ask ourselves when we are inclined to judge, is whether what we are going to say is kind or necessary, and whether it will do any good. If the answer is in the negative let us not say it. ***



Plantar Warts

A PLANTAR WART is a virus infection of the skin on the sole of the foot. It probably is caused by the reaction to the same virus that produces common warts on the hands and on the stump of amputated legs. On account of its location the plantar wart is much more troublesome, painful, and difficult to deal with than the hand wart. It may spread over quite an area of the sole, until walking becomes punishment.

If the virus can be destroyed, the wart dies and soon peels off. Treatment is aimed at destroying the virus. Here is a time-tested treatment:

Fold eight thicknesses of gauze or bandage into a compress of a size that will cover the wart nicely. Dip it into a solution of 10 drops liquid phenol in one ounce of glycerine (request a prescription for it from your doctor) shaken well just before using. Bind it over the wart snugly with one strip of bandage. Wrap the foot firmly in two thicknesses of heavy Turkish towel that has been wrung out of hot water, and pin it so that it cannot become loosened.

Immediately heat the sole of the foot thus dressed with an electric heater that is already hot aimed directly at the sole of the foot at a right angle. It is usually best to have the patient lying on his back with legs straight, toes straight up. The patient's toes must be pointed up, with the heater beam pointed exactly horizontally toward the sole of the foot, about eight inches distance, for forty-five minutes. Check the heat occasionally and increase or decrease the distance if necessary to keep the foot as hot as is well tolerated, but not too hot.

A large 200-watt light bulb may be so placed and guarded as to do the work. Rest it on a support that will not burn. If there is an infrared lamp on hand, perhaps it can be placed so as to direct its heat successfully against the foot.

In a rural area we have even seen a patient sit in front of an open fire, dressed-up foot on a stool close enough to a bed of coals to make the heat penetrate sufficiently. It might be done before different types of heating stoves. In any case, be careful not to burn the patient.

If one heating treatment has not been intense enough to destroy the wart, repeat after four or five days, trying to get better penetration.

After forty-five minutes of heating, remove the heater and dressings and dry the foot. Do not bathe it. The pain and tenderness of the wart should be gone, so that the patient can walk comfortably. In a few days the wart should peel off. If at first the delicate skin underneath is quite tender (usually it is not), pad the sole for a few days with a compress made from several layers of gauze held in place by a strip of adhesive tape.

In some cases the wart has been cut out previously and has recurred, with weakening of the transverse arch and the muscles of the metatarsal joints, where the toes join the foot (the joint over the surgical incision is fallen). In this situation the patient must not fall back on a heavy, stiff uncomfortable metatarsal arch support. It gradually weakens the whole foot, and produces an ungainly handicapping gait.

Show the patient the fallen joint and make him feel and recognize it clearly. Then teach him how to roll a small round "rope" of cotton wool two inches long and about as thick as a lead pencil and wrap a small piece of two-inch bandage around it to hold it in shape. This roll is pressed under the fallen point lengthwise with the toe, and fastened in place crosswise under the sole of the foot arch with a strip of 2-inch-wide adhesive tape.

This pad lifts the fallen joint gently and painlessly into line with the rest of the joints of the arch. A few days of testing it will show just about how thick the roll of cotton must be to give the needed support. It can be made thicker or thinner as required for comfort. In the course of a few weeks the joint grows stronger, and the roll needs to be made smaller accordingly. In time it usually can be discarded altogether, as the joint recovers its normal strength and position.

***

Sitz Bath

ONE of the oldest and most valuable of all hydrotherapy procedures is the sitz, or sitting, bath. Priessnitz, the Austrian who used water as a curative remedy, used the sitz bath in treating constipation and other abdominal and pelvic conditions.

The modern sitz tub of metal and porcelain, with a special inlet and outlet, is made in such a size and shape that the patient may sit in it comfortably and keep his feet in a foot bath at the same time.

For an improvised sitz bath in the home, an ordinary washtub may be used. It should be slightly tipped and set up with blocks of wood to make it stationary. A smaller tub or bath pan may be used to give the foot bath, which should be given with the sitz bath. An ordinary bathtub may also be used for a hot sitz bath by having the water deep enough to reach the patient's umbilicus. This is called a hot half bath. As with the full-tub, different effects may be obtained by using different temperatures.

Articles Necessary

1. Bath thermometer.
2. Washtub and wood blocks.
3. Foot tub.
4. Bath blanket or other lightweight blanket.
5. Basin of ice water and compresses.
6. Teakettle of boiling water.
7. Three or four Turkish towels.

Procedure

1. The temperature of the water depends on the effect desired. In general, these temperatures can be given:
   a) Cold sitz bath 55°-75°F., Hot foot bath 105°-110°F.
   b) Neutral sitz bath 92°-97°F, Hot foot bath 102°-106°F.
   c) Very hot sitz bath, started at a temperature of about 100°F. and gradually increased to 110° to 115°F. Foot bath 100°-120°F.
   d) Alternate hot and cold sitz baths: hot—106° to 115°F.; cold—55°-85°F.; foot baths 110°-115°F.
2. Protect the patient from contact with the tub by placing towels behind his back and under his knees. Cover him with a blanket.
3. Sufficient water should be used to cover the hips and to reach the abdomen. The temperature of the foot bath should be several degrees hotter than the temperature in the sitz tub.
4. Friction may be used with the cold sitz bath if the patient feels chilly or if it is desirable to intensify the effects of the bath.
5. The duration depends on the temperature used and the effect desired, the average length of time being three to eight minutes. The time will be prescribed by the doctor.
6. Hot sitz baths may be concluded by cooling the water to neutral for one or two minutes or by pouring cold water over the hips and thighs. The cold sitz may be concluded by rubbing the hips and thighs with warm alcohol.
7. Cold compresses to head and neck should be used with the hot sitz bath.
8. The patient's pulse should be checked during treatment.

Precautions

1. Avoid drafts or chilling the patient.
2. Watch patient closely for fainting.
3. Have patient rest after treatment.

Indications

1. Cold sitz baths are useful in treating constipation and chronic pelvic inflammation.
2. Hot sitz baths are used in treating pelvic pain such as occurs during menstruation and in chronic pelvic inflammatory conditions. They are used to treat the patient unable to urinate and sometimes the patient having hæmorrhoids. They are also of value in colitis and are beneficial for bed-wetting in children.
3. Hot and cold sitz baths are used for chronic pelvic inflammation, certain kinds of constipation, and prostate trouble. ***

HIGH BLOOD PRESSURE

From page 17

Since most individuals seldom have their blood pressure measured, the only way doctors can make a diagnosis of hypertension is to have a normal range.

Here are generally accepted ranges of blood pressure. To be considered normal, it should be less than the lower values in the borderline hypertension column on repeat checks. (These values are generally accepted.)

	Borderline Hypertension	Hypertension
Men and women under 40 years	135/86 to 139/90	140/92 or above
Men over 40 years	142/92 to 148/94	150/96 or above
Women over 40 years	142/92 to 158/94	160/96 or above

(These values are generally accepted.)

Why all the fuss about hypertension?

People whose blood pressure stays too high tend to have a decreased life expectancy. They have more heart attacks, strokes, and kidney damage, and these occur at an earlier age than in people with normal pressures. Hypertension is especially hazardous to men over 40.

People with blood pressures in the "borderline hypertensive" range are not ordinarily treated with medication. Physicians usually advise them to have their blood pressure measured once or twice a year so that treatment can be initiated if it becomes necessary.

What causes hypertension?

In discussing the causes of hypertension we need to differentiate primary (essential) hypertension from secondary hypertension. The latter results from a specific derangement in one or more of the known mechanisms that regulate blood pressure.

Primary hypertension

Although the exact derangement that causes essential hypertension is unknown, several factors seem to play a part. Some patients inherit a tendency to have high blood pressure, and under certain circumstances such as habitually eating too much salt they may develop hypertension. Doctors Meneely and Dahl have found that hypertension is directly related to the amount of salt in the diet. Japanese on Hokkaido eat an average of about 30 grams—6 or 7 teaspoonfuls!—of table salt a day. Hypertension occurs four times as commonly there as in places where the average salt intake is one third as much.

The word *hypertension* stems from the concept that patients who live under chronic nervous tension are more likely to develop high blood pressure. Chronic stress probably plays a role, but how it does so has not been worked out. One third of people with essential hypertension tend to have a little more noradrenaline, a potent nerve hormone, in their blood.

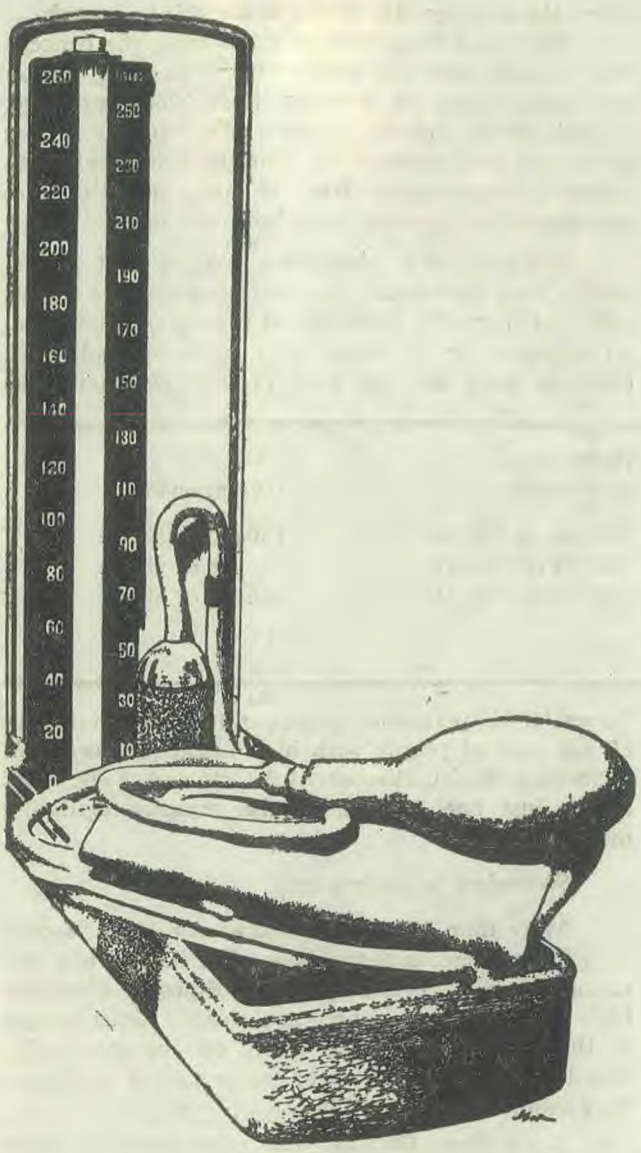
Some research physicians suggest that hypertension may be a result of a deficiency of some chemicals that normally lower blood pressure, rather than an excess of or an overactivity of some kind. Such concepts have not yet been proved. No doubt the "essential" hypertension group, which makes up 70 to 80 per cent of people with high blood pressure, still includes several undiscovered defects and is not caused by just one disorder in the pressure-regulating mechanism.

Secondary hypertension

More than 50 conditions that can cause "secondary" hypertension have been described. They account for about 20 to 30 per cent of people who have high blood pressure. There are roughly seven groups of these conditions. Since many can be specifically cured by surgery or treated by a special medicine, they should bee searched for.

1. *Kidney Defects:* The most common cause for correctable secondary hypertension is obstruction of blood flow to the kidney. This organ manufactures a chemical called renin. Renin converts a chemical made by the liver into angiotensin-II, which is perhaps the most potent chemical that causes constriction of the arterioles. Many kidney diseases can be detected by an X-ray study, called an intravenous pyelogram, that outlines the kidney and ureters. Also helpful in diagnosis is some measurement of the kidney's ability to excrete wastes and the level of renin in the blood plasma after a manoeuver such as salt restriction to stimulate an increase in it. These clues help decide whether more specialized tests are needed.

2. *Adrenal Cortex Defects:* Such defects may cause secretion of excessive quantities of a hormone, usually aldosterone, which causes the body to hang onto too much sodium. This excessive amount of hormone can come from a small noncancerous tumour or from an inherited defect in hormone formation.



Measuring the specific hormones in blood or urine under proper conditions helps make the diagnosis.

3. *Defects of Adrenaline Hormones.* Adrenaline chemicals come from nerve endings and from the inner part of the adrenal gland. Some people develop tumour, called a *pheochromocytoma,* that produces excessive amounts of the adrenaline compounds.

Others have an inherited lack of an enzyme that inactivates adrenaline, or they may be taking a monoamine oxidase inhibitor medicine that may prevent the working of that enzyme. These persons may develop severe high blood pressure from dexedrine sulfate ("bennies") used for weight reduction or from "cold" tablets, or after eating fermented foods such as yellow cheese, or after drinking wine. In a typical attack, a severe headache with a fast-pounding heartbeat develops an hour or two after one has eaten aged yellow cheese.

Mrs. Rogers, described at the beginning of the article, represents another defect in this group. Her cells had an increased sensitivity to body epinephrine-like chemicals.

4. *Other Hormone and Regulation Defects:* Certain diseases of the pituitary, thyroid, or parathyroid glands may also cause hypertension. Some women may develop a condition called toxemia, with hypertension, during pregnancy. The cause of this has not been determined. Several inherited diseases of regulation of body processes may cause hypertension. Persons who are overweight are more likely to develop high blood pressure.

5. *Defects of Blood and Blood Vessels:* A birth defect such as a constriction of a portion of the aorta, the main artery leaving the heart (coarctation of the aorta), or a shunt between a large artery and veins may result in hypertension. Many of the arterial defects can be corrected by surgery. Patients with extra-thick blood (polycythemia) may have such a high percentage of red cells that the blood flows sluggishly, like molasses, and the heart has to raise the blood pressure to force sufficient blood to nourish the cells.

6. *Nervous-System Disorders:* Some kinds of brain or nervous-system damage may result in hypertension. Chronic nervous tension from emotional stress and anxiety probably acts through this system. Early studies with "biofeedback" indicate that some persons may be trained to lower their blood pressure.

7. *Chemicals and Drugs:* There are several specific chemicals that can cause high blood pressure. An example given earlier is eating too much salt over a period of years. Heavy metals, such as lead, mercury, or cadmium are also known to elevate blood pressure, but these usually cause other symptoms that tip off the doctor that they may be the cause. Rats whose drinking water contained seven parts per million of cadmium nitrate developed hypertension. It may be possible that some patients get enough cadmium to do this from galvanized water pipes or from cigarette smoke. Various agents, including licorice, dextroamphetamines, and certain cold remedies, may cause hypertension directly. Even an overdose of vitamin D may induce hypertension.

It is now quite widely known that contraceptive pills may cause mild to severe hypertension in certain *susceptible* women. Although the degree of change in pressure of most women on "the pill" is small, those who use them tend to have a greater increase in blood pressure as the years progress than do nonusers. Most likely the hypertension in these patients is due to a *chronic excess of sodium* in the body brought on by the effect of both female hormones in the pill: both natural and *synthetic*

estrogen tend to cause the kidney to keep salt, as does the *synthetic* progesterone component. On the other hand, *natural* progesterone has the opposite effect. It tends to cause the kidneys to give up salt. But when the pill is taken, very little natural progesterone is formed by the ovaries.

We have also observed that some women develop high blood pressure after they start taking conjugated œstrogen for *menopausal* symptoms. Here again, the hypertension is most likely caused by a chronic excess of body salt maintained by the œstrogen, which also suppresses formation of natural progesterone. Some women cannot tolerate the small amount of extra salt in their tissues without developing hypertension. The onset from such medications is usually gradual and may require several years to develop. Only about half of our patients who developed hypertension while on the conjugated œstrogen returned to normal blood pressure after it was stopped. It may require up to twelve months after leaving off taking œstrogen for the blood pressure to remain normal without antihypertension treatment. A word of caution is needed here. Since the likelihood of developing essential hypertension increases with age, the elevation of blood pressure in older women on œstrogen is more likely to be due to other factors than to the female hormones.

Fortunately, administration of a medicine called a spironolactone usually counteracts the salt retention from the contraceptive pills or conjugated œstrogens. With it the blood pressure can be kept in normal range even though the pills are continued.

What diagnostic studies are helpful in the hypertensive workup?

Some physicians prefer to treat all patients with some medication to bring the blood pressure down to normal and run specialized studies only on those whose history has some clear-cut evidence that they may have a correctable cause for high blood pressure, or on those patients whose blood pressure does not return to normal when treated. It would seem wise to test for several of the more important curable forms of high blood pressure before treatment is started. Tests can be selected that will help detect most of the causes of correctable high blood pressure. The test results will also serve as a guide to the selection of medicine for treatment. Of special value in many centres is an assessment of the plasma levels of renin activity and aldosterone under standardized conditions.

Your physician may also want to run tests such as an electrocardiogram, chest X-ray, or renal clearance test to determine whether the high blood pressure has damaged these organs. Since diabetes is commonly associated with hypertension, a test of sugar tolerance may be ordered.

Treatment of hypertension

Most people with uncomplicated essential hypertension could be treated quite effectively with an extremely low salt diet. This, however, is not a popular mode of treatment. Most people refuse to remain for the rest of their lives on a diet that is low enough in sodium salt to be effective. As an alternative, physicians prescribe diuretics (water pills).

New types of medication are being discovered steadily. Some of them counteract the adrenaline hormones in one way or another. Some counteract the effect of salt retention. The physician endeavours to find a medication for the patient that is without troublesome side effects, that is not costly, and that is safe for long-term use. Unless one's high blood pressure can be corrected by an operation or by some special medicine, he or she should plan to be under medical supervision and decrease his salt intake and /or take some antihypertensive medicine the rest of his life.

Much can be done with diet to assist in the treatment of high blood pressure and its complications. It is best to eat natural foods with a *minimal* amount of *salt, sugar, and grease* (saturated fats.)

Fruits, nuts, cereal grains, and certain vegetables in their natural state are very low in sodium and high in potassium. A diet of these, unsalted, with a little low-sodium milk, would be restricted enough in sodium for general use. Green leafy or root vegetables tend to have higher salt content and would need to be used sparingly. Some patients may have kidney damage and be unable to handle either a very low or high salt intake. Except for such patients a low-sodium diet is an ideal way to assist in the treatment of the hypertension.

The saturated fats play a very significant role in the development of cholesterol deposits in the arteries. The formation of these proceeds at a more rapid pace in people who have hypertension than in those with normal blood pressure. A diet low in saturated fats will decrease the rate at which the cholesterol is deposited in the arteries and help avoid the strokes and heart attacks that may result. A person with hypertension should avoid greases, such as animal fats, shortening, hydrogenated (partially hardened oils) as if they were poison. Oils which are liquid at room temperature (polyunsaturated oils) should be substituted in their place, but even these should be used in moderation. Since the body can convert table sugar into saturated fats, intake of this should also be limited.

In short—for most people, hypertension with all of its serious complications is not necessary. Early detection of high blood pressure, removal of all possible causes, and prompt and appropriate treatment can prolong many lives and make those lives much more enjoyable. ***

FOR JUNIORS

Fish Doctor

Christine Miskovits

PETER jumped out of bed and dressed quickly. Today Peter was going to the aquarium with his friend Jim and Jim's daddy who was a doctor that worked at the aquarium.

"Dr. Martin," Peter said when they were on their way, "I never heard of a fish doctor before."

Dr. Martin laughed. "Fish get sick too, Peter, just as people do. Only fish have no way of telling us when they're sick. Part of my job is to find that out and try to help them get better."

When they arrived at the aquarium, Peter and Jim ran up the high stone steps and entered the huge building. Inside they found themselves in a large room with glass tanks set right into the walls. The tanks were filled with fish swimming in settings of rock, sand, and coral made to look like their own ocean homes. The room was dim, but here and there hidden lights were shining into the tanks to bring out the sharp colours and strange shapes of the many sea creatures. It seemed as though the were in a different world.

"This is the visitors' room," Dr. Marti said. "Come and see where I work."

He led the boys through a door to an other large room with more tanks. They stop ped first at one that housed several large mean-looking fish. "These are sharks that wer brought here recently," Dr. Martin began t explain. "We keep them in separate tanks s we can watch them for a few weeks. Man fish, even powerful sharks, get lonely an afraid when they are taken from their ocea homes. Some will not eat. We must force then to eat or they will die."

"How can you force a shark to eat?" Pete asked.

"A diver goes into the tank and feeds them by hand," Dr. Martin answered.

Both boys sighed at the same time.

"That sounds scary," Jim said.

"And dangerous," agreed Dr. Martin, walking on. At another tank he stopped again. "These are porpoises that got rope burns when they were caught. We treat them by rubbing ointment into their skin. It will keep out germs just as a Band-Aid keeps out germs when you cut yourself."

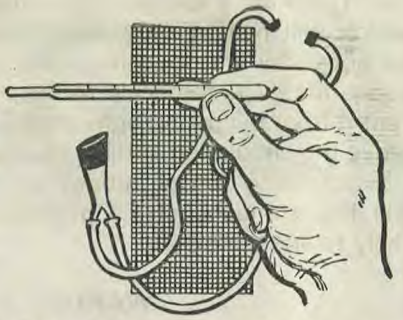
"Do fish ever have to take medicine like we do?" Jim asked.

"Of course," answered Dr. Martin. "Why some fish even take vitamin pills. Porpoises— which of course are not really fish at all— work very hard putting on shows for our visitors. They need extra energy."

"How do you give medicine to a porpoise?" Peter wanted to know.

To page 26

The Doctor Advises



This counselling service is open to regular subscribers only. In reply to questions, no attempt will be made to treat disease or to take the place of a regular physician. Questions to which personal answers are desired must be accompanied by self-addressed and stamped envelope. Anonymous questions will not be attended to. Address all correspondence to: The Doctor Advises, Post Box 35, Poona 411 001.

STOMACH ULCER

I have been on an ulcer diet, but I wonder whether I need to continue. What can act as a milk substitute? Are two eggs a day too many?

Ulcers and associated stomach distress seem to come and go, as you have discovered, according to your faithfulness in following your diet and medication. Your ulcer needs to be healed completely before you can resume a diet normal for a person subject to ulcers.

If you gain weight from regular milk, non-fat milk is justified. It is nearly as satisfactory, particularly after the acute symptoms have subsided. Two eggs a day may be too much, particularly if your cholesterol is high or if you have a tendency toward heart trouble. Many people have to reduce eggs to two or three a week. If citrus fruit or juice cannot be tolerated, vitamin C may be taken in tablet or capsule form.

Persist with your diet. It may take several weeks of patience for your symptom complex to return to normal.

NERVES

Is it true that nervous conditions sometimes interfere with the absorption of foods?

Yes, very definitely. All the digestive organs are under the control of the nervous system in one way or another. So, if a person is upset, he naturally loses his normal desire for food. His mouth may become very dry, making chewing and swallowing much more difficult and less enjoyable. Tensions building up within him interfere with the regular waves of peristalsis that normally pass over the walls of the stomach and small bowel. Digestive juices may not be produced in the right amounts, or there may be too much of one and not enough of the other. The irritated stomach may then produce excessive amounts of hydrochloric acid resulting in ulcers. When these natural digestive processes are hampered by nervous tension, food cannot be absorbed. Trouble may then develop, including diverticulosis and haemorrhoids. Thus what began as a purely temporary condition due to tension may wind up as a serious organic disturbance, if the tension continues over a long period of time. We should see to it that our meals are well planned and prepared and served under pleasant conditions. Mealtimes should always be happy occasions, as free from stress and strain as possible.

LOSS OF HAIR

I wonder if you could help me as regards the loss of hair. What exactly is the theory of this phenomenon? Is there absolutely no cure? Perhaps my only being nineteen years of age will reveal to you my anxiety.

When considering baldness the old saying, "The more the cures the greater their worthlessness, is very near the truth. Every seller of concoctions has something on his shelf to make hair grow and they all do a good trade because every man who sees his hairline retreating thinks of vanishing youth and tries about every preparation on the market, especially if it shows a picture of a previously apparently hairless scalp now well covered in a flowing mane.

The cause of baldness is not fully understood, but it does appear to be associated with male hormone testosterone. Hence the condition is rarely seen in females. There are some diseases of the scalp which can cause loss of hair, but these are not common and the vast majority of cases are due to hereditary factors.

There are a few principles that can be followed which will help. Firstly, keep the scalp clean and do not allow it to become too oily or too dry. Secondly, massage the scalp to keep it supple and prevent it from becoming tight on the skull. This will improve the circulation and be beneficial.

Spending lot of money on fancy treatments will line someone else's pockets, but is very unlikely to line your scalp.

WARTS

What is the best way to get rid of warts? I've had them for about six years.

Warts are believed to arise from some type of virus involving the skin. A small, ugly tumour growth develops in the affected area and may remain for months or years. Warts are rather strange. They are far more common during the early years of life. At times they may disappear for no apparent reason, only to return and plague the patient once again. Some of the weirdest ideas of medicine and folklore during the Middle Ages surrounded the treatment of warts. They were considered as "evil omens", and were so discussed by famous writers like Shakespeare. But warts are rarely serious. Most of them can be removed easily either by chemical or electrical cauterization, but they may return if the virus is still present in the surrounding skin.

FISH DOCTOR

From page 24

"Just watch," said Dr. Martin. He took a fish from a closed tank nearby. It was small enough to fit in his hand. With the other hand, Dr. Martin took a tiny white pill from a plastic box. He squeezed the dead fish's mouth open enough to pop the pill inside. Peter and Jim followed anxiously as Dr. Martin walked to a large tank containing a single porpoise. The playful creature made a leap out of the water.

"This is the star performer of our afternoon show," said the doctor. "It's just about time for his vitamin." Dr. Martin extended his arm and held the little fish above the water. The porpoise quickly swam over and stuck his head out of the water. Dr. Martin dropped the fish into its open mouth.

"I get it," Peter exclaimed. "Put the medicine into a little fish, then feed the little one to the big one!"

"Right!" Dr. Martin smiled. "The porpoise takes his medicine without even knowing it."

"Being a fish doctor is sure an interesting job," said Peter.

"Interesting and exciting," agreed Dr. Martin. "Marine scientists or fish doctors like myself, make regular trips to faraway oceans and rivers. We are always looking for different kinds of fish to add to our aquarium collection."

He paused and looked from one boy to the other. "Do you think you'd like to work here when you're older?"

"It's something to think about," answered his son Jim, gazing at the many sea creatures around him.

"It sure is," agreed Peter. "Something to think about a lot." ***

COMPUTER HELPS IN CANCER DIAGNOSIS

A new computerised auxiliary device which helps in the radiological examination of patients has been installed at the Medical Radiological Institute of Tübingen University.

The device can be used with normal X-ray equipment to trace and treat tumours. The X-rays penetrate the various layers of tissue being examined, and their intensity can be controlled according to the composition of the area being examined.

The computer is used to record the data from the examination and later these pictures can be shown on a type of closed circuit TV screen.

Doctors at the institute say that the new process enables them to "see" the stomach, for instance, without having to operate, to diagnose if there are any cancerous growths.

—German Features

ULTRA-VIOLET RAYS AGAINST PSORIASIS

Ultra-violet rays are the newest weapon against psoriasis—the harmless, but cosmetically-unpleasant patches of skin scaling which affect so many people.

A team of doctors headed by Doctor Gernot Rassner of the university's dermatology department at Ulm, has been experimenting with these rays for the past two years with success. They have found no dangerous side-effects.

The ultra-violet ray therapy is used together with medicines. Using the so-called photo-chemotherapy, the affected skin patches are treated with a special cream, which reacts to the ultra-violet rays and then dampens down the activity of the skin cells which cause the psoriasis.

—German Features

NEW INFECTION FIGHTER

A IL3.5 million grant has been awarded to professor Nathan Trainin to support continued research on an infection-combatting thymus extract, and to establish a pilot plant at Kibbutz Afikim for its production. In early trials on eleven young patients, Prof. Trainin and two teams of Israeli physicians have shown that a hormone extract, derived from the thymus glands of calves, may be of great value in treating children whose own immune systems are unable to ward off serious infection. This new approach to combatting and preventing fatal infections—particularly of viral origin—in young children was reported recently at an international pediatric conference in Israel.

—News from Israel

PANCREAS TRANSPLANT MAY HELP MILLIONS OF DIABETICS

Laboratory trials have shown that the part of the pancreas that produces insulin can be transplanted from one animal to another, but it will probably be another decade before pancreas transplants will be feasible as a means of helping diabetics. The operation is already being conducted on volunteers in the United States.

The immune response is the chief problem. Will the recipient's body accept or reject the alien organ? Professor Weinges reckons part of the donor's pancreas is best injected into the recipient's liver, since the liver is not so liable to reject foreign bodies as other organs.

Donors in the main, will be accident victims whose pancreases could be stored like the blood used in transfusions. One pancreas can be subdivided to help up to five sufferers, so there may yet come a time when millions of diabetics all over the world can put away their syringes and dispense with their daily insulin jabs.

—German Features

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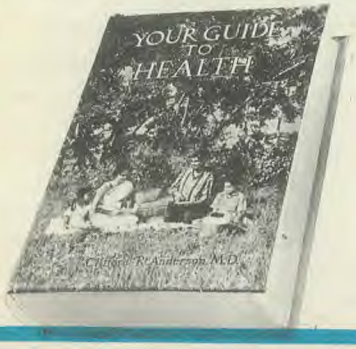

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