

by Dr. Max Jacobson

Our nation is steadily growing older. Last year, 15,000,000 Americans were sixty years of age or more. At that rate of progression, 30,000,000 will be sixty or over by 1980.

This presents a challenge to modern medical science, especially when we realize that twenty percent of our population would retire from active daily life under our present retirement age ideas. Insurance companies, the Army, the Navy, the Government usually set the age of retirement at about sixty. That is when the old are supposed to make way for the next generation.

The increase in the number of old people was one of the incentives for the creation of Geriatrics, a new branch of medical science. Geriatrics specializes in caring for the aged and includes all the physical and psychological ailments peculiar to this group. At its best, it should not only extend the span of life but enable people over sixty to live and work normally.

At this point the question may be raised: When does old age really start? This is not a matter of the calendar. Time is relative. There is the story of the five-year old girl who heard that her mother's ~~best~~ friend~~s~~ was celebrating her twenty-second birthday. "Isn't it awful," the child said, "to be so old?" And there is, at the other end, the apocryphal story about Justice Holmes walking down the street at 90, seeing a pretty girl and

To do anything about old age we must measure it not by temporal but by organic standards. We know that old age is upon us when we begin to suffer the disabilities of old age.

There are certain diseases which may occur in the earlier stages of a man's life, but are chiefly considered the doubtful privilege of the aged. They are arteriosclerosis or hardening of the arteries; heart disease; malignant growths, such as cancer; degenerative diseases, such as cataract of the eye; fracture of the hip; senility; mental debility. Older people are also subject to strokes, prostate trouble and degenerative skin and bone diseases.

Even when we do not suffer from any of these ailments, there are certain changes which take place in the normal aging process of the body.

According to Dr. A. J. Carlson, these physiological changes take one or more of the following forms: The hair begins to turn grey. The lymphoid tissues atrophy. The lungs become distended, thereby decreasing their vital capacity. There is an increase in the size of the flat bones. The cartilage between the vertebrae atrophies, decreasing the person's height. The papillary beds of the skin decrease, causing pallor which may be mistaken for anemia. There is a general decrease or absence of the deep tendon reflexes, and an atrophy of all the other organs except the heart.

The main characteristics of degeneration or decline are that everything which expresses the life of the cell actually disintegrates. ~~Esixxx~~ Cell division is slowed down and the dying out process takes place. The elastic tissue loses its snap and most of the tissue of higher function is gradually replaced and patched up with less valuable, mostly fatty material.

One of the outstanding symptoms of old age -- the sclerosis of the blood vessels -- seems also to be clearly related to a primary deposit of fat in the blood vessels. This is the first step of degeneration.

The digestion of fat is prevented by impaired liver function.

The liver has a very important biological role. It digests the important foods, such as sugar, fat and protein. That is, it splits them into the smallest chemical units, then rebuilds them with the help of hormones, enzymes and vitamins into body tissue. This tissue is different for each person in each little cell and therefore has to be built up as such. But it must be kept in mind that the liver represents a storage place for fats, proteins, vitamins and glycogenes.

Any impairment of the liver function will necessarily have two bad results. It will interfere with the rebuilding function of the liver, and deprive the body of a vital storage place for essential body elements.

A fatty liver is a badly functioning liver. That is why, generally speaking, your food should be rich in protein and carbohydrates. Don't overburden your liver with too much fat. This is deposited between the liver cells, and impairs their functioning in the future.

As you see, diet is literally a matter of life and death. Man does not die, the old French proverb warns us, he kills himself. The commonest instruments of this suicide are the knife and fork. It is at the table, every day of your life, taking breakfast, lunch and dinner, that you can cut your existence short or prolong it to a ripe and useful age.

Many people think that diet is wholly a matter of taste. Yet it is much safer to rely on what the doctor tells you. Your taste may be your worst enemy. It may be impaired by the state of your teeth, the condition of your stomach, by bad habits which you have followed for so many years that your palate has forgotten what is good for you.

The best basic life-long diet devised so far was worked out by Edward J. Stieglitz and published in his book Geriatric Matters as follows: One pint of milk or its equivalent. Much of this may be utilized in creamed soups, puddings, milk toast and as cheese etc.

One serving of orange, grapefruit, tomatoes, or their juices.

Raw cabbage or salad greens may be substituted if desired and no alimentary contraindications exist;

One serving of green or yellow vegetables, some raw;

One serving of potatoes or other vegetables or fruits;

One serving of whole grain cereal - oatmeal or wheat;

One egg daily, or at least three or four a week;

One serving of meat, poultry, or sea food, or other high protein food;

All bread and flour should be enriched, or whole grain;

Butter, oleomargarine with vitamin A, peanut butter, or other vitamin rich fats as indicated;

But above all, go easy on fats. By that we mean not only gravy, dressings, bacon and the like. There are other foods out of which the body makes fat if you eat too much of them. This includes overindulgence in sweet, rich desserts, ice cream and pastry. In such cases the body is unable to eliminate the surplus. That surplus will pad your waistline

and, what is even worse, clog your liver.

Liver as a food or in concentrated form as medication is a great help here. It contains important factors which support the digestion of fat.

AMINO ACIDS

The body can make fat out of sugar and sugar out of protein, but it cannot make protein out of anything but protein.

There are, however, certain elements which will help the liver digest fat. These are the lipotropic or fat-digesting amino acids. They are the building stones of the protein molecule. The most important of them is methionine.

Animal experiments have shown that, despite factors which would otherwise have caused a fatty degeneration of the liver cells, normal function was maintained through the administration of methionine.

In this connection, the research group at the New York Memorial Hospital, especially Dr. O. T. Rhoades, came to some very surprising conclusions in the course of their investigations. They caused destructive changes in the liver tissue of test animals and were able to produce cancer. They discovered that this liver damage could have been prevented if hydrolyzed casein with riboflavin had been added to the food of the test animals.

Hydrolyzed casein is casein already split into amino acids.

Further investigation revealed that out of the 22-24 known amino acids of nutritional importance and the many factors of the B-complex family, only a few are actually needed to play the protective role.

Even more impressive were the successful experiments treating

cirrhosis of the liver in human beings. Until recently this illness was fought by giving the patient an injection of liver extract, B-complex vitamins and a diet which was high in protein and carbohydrates and low in fats. To these factors, the research group at the Memorial Hospital added the newly discovered factors of one amino acid, methionine; and two rare members of the B-complex group. Under this treatment, the affected livers became normal.

This treatment is identical with the treatment required for old age.

Anyone can take advantage of these new found aids to health and a longer life by following a proper diet. The amino acids can be obtained best from dairy products like cottage cheese, cream cheese, milk and eggs; from meat, poultry, fish, fowl, sea food; from cereals of wheat and wheat germ; and from nuts.

VITAMINS

The dramatic achievements at the Memorial Hospital were obtained by an intelligent use of vitamins. The vitamin B-complex factors are tremendously important for maintaining the vital functions. They are important links in the chain of chemical reactions which take place in the digestion of carbohydrates. They also play a leading role in the metabolism of the nerve cell itself, including the function of the sex glands.

Lack of these vitamins in our food accounts for many disturbances. Vitamin deficiency precipitates or accelerates premature aging. At one time it was assumed that these disturbances were organic diseases. Now we know -- and this discovery is a recent one -- that they are

thing they had enjoyed doing for many years.

2: Mr. Jones was sixty-five. After working strenuously for many years, he came to em^{me} with an acute breakdown. Over-work had proved too much for him. He was tired; he could not go on; he had quit all active occupation. In addition to acute fatigue he suffered from a severe circulatory disturbance. I gave him the combined treatment to be discussed later. Results: he regained his former working capacity; many of the minor disturbances with which he came disappeared. Mr. Jones was impressed both by his own recovery and by the fact that many of his friends under the same strain were falling by the way-side. I observed this patient for many years and found that the effect of the treatment was lasting.

3: At sixty-four Mrs. Brown lost all self-confidence following an automobile accident. She suddenly became conscious of her age. She attributed the auto accident to the slowness of her reflexes. In^R retrospect she found that in the past three years she had felt an increasing fatigue. She was depressed, ^{she did} did not want to go on with her profession, had a poor appetite and suffered from insomnia. Several weeks after I started the combined treatment, she resumed her work. She followed instructions, continued with the medication and has been well for the past year and a half.

Tissue breakdown may be caused not only by nutritional mistakes, but by psychological factors as well, or by a combination of the two. If you are upset and feeling low, everything is depressed along with the mental state. The saying "I can't stomach that" shows how aware human beings are of the fact that detrimental thoughts are indigestible. Such damaging influences can be tenseness or haste, caused by acute competition and fear of economic insecurity.

To illustrate this point, an interesting experiment was made at the famous Pavlov Institute in Leningrad: Dogs with normal family life were separated by glass windows from other dogs in solitary confinement. The results were surprising. The isolated dogs not only showed definite signs of maladjustment and unhappiness but died prematurely of changes in their blood vessels closely resembling arteriosclerosis.

It is an accepted medical fact that mind and body have to be treated as a unit, regardless of the patient's age.

Moreover, the experiments confirmed what has long been known to students ^{PHYSICIANS WHO STUDIED} of the destruction caused in the body by the transfer of emotional tensions or shocks from the nerves to the organs. We know that the sympathetic nervous system, for instance, almost branches out into the tissues which form the skeleton of all important organs, as well as part of the body surface itself.

A destructive nervous impulse may be carried to those tissues and by their impact interfere with the normal function.

The importance of this connective tissue has been known for a long time, but recently Prof. Alexander A. Bogomoletz of Kiev studied the function of these tissues -- especially the

preservation of the normal function -- in connection with old age. This has an importance bearing on the extension of human life. During the course of his investigation, Prof. Bogomoletz examined a group of centenarians, and was particularly impressed by the preservation of the appearance of their skin. This led to a completely new evaluation of the system of the connective tissues in general, and especially of the connective tissue cells in the spleen, the bone marrow and other organs which we call the reticulo-endothelial system. He found that these cells are responsible for the removal of waste products from the body and for the general resistance to infection. By the same token they are responsible for the prevention of malignant growths and the rapid healing of damages, such as fractures or injuries to soft tissues. As long as the normal function of these cells ~~is~~^{is} maintained and not interfered with, the body ~~can~~^{can} successfully resist the effects of degeneration and old age. On the basis of this remarkable discovery, Prof. Bogomoletz developed the ACS serum which, given by injection, stimulates the system. Some of the claims put forward in this connection require caution. Certainly the first reports were too generous in saying that this new treatment can enable people to live to 150 years. But the actual achievements of the Russian experiments are important and seem to justify parallel research conducted in this country. This is especially true when the Russians claim that the body begins to age when the tissue which connect the cells with the blood vessels ~~may~~ wear out or deteriorate. Such deterioration can be caused by bodily abuse, overwork, nervous exhaustion and improper living. The serum developed by Prof. Bogomoletz preserves and stimulates the cellular activity.

Another medical means in the fight against old age is the hormones, popularized by Prof. Voronoff of Paris, who transplanted monkey glands in men. Treatments which stimulate the function or extend the life of the sex glands tie in closely with the findings of Prof. Bogomoletz. However, these treatments are more impressive in the case of the male sex hormone. They have been successfully used by a great number of doctors.

Treatments with the extract of the female sex glands are not yet as well defined in their final results. Many issues are still under discussion, such as the connection of these glands with the question of malignant growths. At ^{ANY} rate, these treatments are the exclusive domain of physicians with a long standing knowledge of the particular needs of their patients.

The use of hormones is closely connected chemically and functionally with the use of vitamins. In modern science, these treatments are now combined, giving the patient the full benefit of both.

Until you are about forty-five, nature gives you a great deal of leeway. After that you must be on guard. You can increase your life span by living sensibly from the day you are born, but it is especially between forty-five and sixty that you can contribute to your longevity by taking care of your diet and doing whatever else may be necessary to protect your body against the ravages of time and degeneration.

Geriatrics has a definite set of problems to investigate in order to find out what will be needed to extend our life. In studying the biological needs of advanced age, it already has made big strides in establishing the nutritional requirements. From

there on therapy will be directed towards the preservation or stimulation of the organic functions, in giving particular support to liver and glands.

Should the claims of Prof. Bogomoletz prove the importance of the connective tissue system, therapy with his stimulating serum will certainly not be the last answer for the stimulation and preservation of this system.

More than ever will it be important to spread the gospel of sane and well-balanced living to those who are interested in living their lives fully and for a long time.

We are only standing at the beginning of this new knowledge, and the secrets which will be unlocked through the new atomic advances which enable the scientists to trace certain food elements and follow them all the way through in the processes of life. Pushing back the threshold of old age is no longer just an idle dream of scientists and an unrealizable hope of humanity. It is not even merely a medical question. It is also a question of political and social importance. For it is only by marshalling the collective knowledge of our older statesmen, in full possession of all their intellectual and physical powers, that the united nations of the world will achieve their highest goals. Birth rates may go up, but it is more important to convert our surplus of older people from a deficit into a vigorous and viril factor in the life of every nation. This can only be achieved if both the layman and the medical profession alike become conscious that old age is not only a personal problem but an international issue.