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# Your Body Chemistry

## THE KEY TO HEALTH

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**Your** Body Chemistry:

the Key to Health

Millions of human bodies are functioning without full efficiency. Aches and pains among mankind are too common. Unhappiness and misery are the results. To maintain and restore health are the goals of Medical Science.

An important method to improve health is to place the chemistry of the body in balance. Each of the billions of body cells is a chemical laboratory. Each living cell must receive nourishment, each must eliminate the waste products of cell activity. No organ or tissue of the body can function efficiently if the chemistry of cells is out of balance. Disease is body chemistry thrown out of balance: by bacterial attack, by malnutrition, by injurious physical forces, by psychic impacts. Whatever the cause of the body chemistry being disturbed in balance, the principle of treatment is the same - - to restore the balance.

Important strides have been made in the conquest of the diseases of bacterial origin. The death rate among infants has been greatly reduced. The diseases of childhood no longer take their extravagant deathly toll. The plagues and epidemics are controlled. Pneumonia and tuberculosis have dipped to lower positions on the mortality tables. So it is with other diseases caused by bacteria.

Our people are not so fortunate with respect to the diseases that are degenerative in nature. Deaths from diseases of the heart and blood vessels



have increased from 156.4 per 100,000 persons in 1911 to 246.3 in 1953. Cancer has increased from 69.3 in 1911 to 126.0 in 1953. These are the modern killers.

This trend of **increase** in the death rate from the degenerative diseases and **decrease** in the death rate from diseases of bacterial origin for the **last ten years** is shown in this table:

| | January 1944 | January 1954 | |
|---|---|---|---|
| Tuberculosis | 37.0 | 10.1 | (decrease 26.9) |
| Communicable Diseases of Childhood | 2.3 | .2 | (decrease 2.1) |
| Cancer | 107.9 | 131.0 | (increase 23.1) |
| Heart Disease | 213.2 | 277.3 | (increase 64.1) |
| Pneumonia | 31.9 | 15.6 | (decrease 16.3) |
| Complications of Pregnancy and childbirth | 4.1 | .9 | (decrease 3.2) |

(Death rates per 100,000 policy holders. **Statistical Bulletin,** Metropolitan Life Insurance Company, February, 1954.)

Millions of our people are afflicted with rheumatism, diabetes, tooth decay, cataracts, peptic ulcers, pyorrhea, and skin diseases. Most of these are conditions of degeneration. The conquest of these diseases is the most important challenge to medical science today.

A Congressional committee has recently completed a health inquiry into the toll of our major diseases - - their causes, prevention and control. The conclusions of this report are not encouraging:

"There has been tremendous progress in reducing the death rate from certain diseases, particularly those of

infectious nature, with a resulting increase in life expectancy. Infectious disease, for example, has diminished as a national problem because, with identification of the causes of these diseases, it has become possible to develop means of prevention, control, and when the diseases occur, their prompt and adequate treatment.

'In the case of noninfectious disease, improvement has not been so marked. There has been an actual increase in the incidence of and death rate from these diseases, especially the chronic, degenerative diseases of an aging population.

"Adequate treatment is not now available for such afflictions as heart disease, cancer, arthritis and rheumatic disorders, cerebral palsy and muscular dystrophy. For example, the physician knows that after an attack of coronary thrombosis or a cerebral hemorrhage he can aid the patient by treating symptoms, but cannot prevent or cure the disorder. He does not fully understand the underlying causes of these ailments and is therefore not able to eliminate them. Similarly, he may completely remove a malignant growth by surgery, or slow its growth by x-ray treatment. But if these treatments are not completely successful, as is too frequently the case, the physician is unable to do much more than to provide palliative treatment. He does not know the cause of the tumor growth and is thus unable to truly conquer it.

"Our physicians are doing their utmost with the tools at their disposal. More and more tools are being developed. But it is no understatement to say that they do not have the knowledge they require to do a really effective job on the prevention and treatment of many chronic and degenerative diseases."

(Preliminary Report of the Committee on Interstate and Foreign Commerce. House Report No. 1338, March 16, 1954.)

Despite these grim statements there are hopeful signs that these diseases of degeneration may be conquered. There is substantial evidence that suggests that the chemistry of the body is out of balance in every degenerative disease. There are heartening experiences that prove that when body chemistry is placed in balance some of these degenerative diseases are controlled and reversed.

One may properly ask what is the method whereby the chemistry of the body is restored to balance. There is a method and we will attempt to describe it.

First, let us look at the human body as a kind of machine. Let us compare it to an automobile. An automobile is composed of intricate parts that work in coordination to produce energy. In addition to the mechanical parts, fuel, oil, and water are required. So long as all the parts work in unison efficiently and the quality of the fuel and oil is adequate, the automobile functions satisfactorily. If, however, one vital part fails, the automobile is no longer capable of functioning. Or if the oil or gasoline is of poor quality the automobile cannot function with satisfactory power and

efficiency.

Some automobiles come off the production line with a mechanism that is not in good order. On the exterior they look like any other automobile of the same make and model. Others come off the production line in good condition, but abuse and poor care by the driver soon make them lose their power and efficiency.

To extend the analogy of the automobile and the human body we may observe that some human beings are born with inadequate constitutions, some do not supply themselves with proper fuel in the way of foods, others misuse and abuse their bodies. A poor inborn constitution, inadequate nutrition, unwise use of the body are causes of disease. All these causes lead to improper body chemistry and ill health.

That people frequently take better care of their possessions and machines than they do of their bodies is well expressed by Alexander: "Man is so skilled in the nature and working of the machines he has invented, but is so very unskilled in the nature and working of the mechanism of his own organism; he knows all about the means whereby he can keep the inanimate machines in order, and considers it his duty to make proper use of these, but he knows little or nothing about the means whereby he can keep in order that animate human machine -- himself."

(Alexander, F. Mathias: The Universal Constant in Living, New York, E. P. Dutton & Co., Inc. 1942, p. 217.)

Everyone is familiar with the physical examination that his physician or dentist makes. He uses instruments to see and hear, to look at body parts and see them in function. He examines the urine and blood; he measures height and weight. All these tests are made to give him important information that will make the diagnosis more accurate and the treament more effective.

The dentist or the physician who is regulating body chemistry has a different objective, he makes a different kind of examination. He does two things: he measures the length and the circumference of the lower leg and the lower arm to receive information concerning the growth pattern and the development of the person; he takes a blood sample to analyze to determine the **present** state of the body chemistry. These two examinations give the doctor a base-line from which to start. Because these two examinations are somewhat different from those received at the patient's usual physical examination, they should be explained in more detail.

We are all aware that people differ in body shapes and sizes. No two are exactly alike. Nor are any two personalities precisely the same. These differences in structure and personality are the results of unique forces that are exerted on each person. In large part these forces are produced by minute amounts of chemicals produced by the glands of internal secretion (the endocrines). These glands are vital to life and well-being. When they are disorderd, disease results. Diabetes and goiter are two common diseases

of such origin. There are countless other conditions of disease that are produced by the disorders of the endocrine secretions.

The physical (anthropometric) measurements of the lower arm and leg give important clues to the kind of endocrine system with which a person was endowed. Some persons have a system that produces too much endocrine secretion, others too little, some more fortunate ones a well-balanced amount. Just as the growth rings shown on cross section of a tree represent the pattern of development of a tree, the human body may be measured to record the growth pattern of the person. No two trees, no two persons, are exactly alike in form, structure, or function.

Each person is endowed with a certain growth and development potential. Our ancestors are an important factor. But the development of each person is determined by the proper function and coordination of his endocrine glands. These are the regulators of all body processes. A giant is produced by too much output of the growth hormone from a part of the "master" or pituitary gland at the base of the brain. A dwarf is produced by too little hormone. There are thousands of varieties, forms, and patterns of improper function of endocrine glands between these two extremes. A cursory look at any group of people emphasizes their body differences. As their bodies differ in size and shape they also differ in function and temperament and susceptibility to different types of disease.



After the body measurements are made, a graph (endocrinograph) is prepared by precise mathematical calculations, using a slide rule. This graph may be compared to an engineer's preliminary survey or the architect's rough drawing that is made before a bridge is erected or a house is built. This graph, unique and individual for each person, suggests the kind of physical structures with which the person began life and the degree of the efficiency of the function of these structures. It represents a point of beginning for the appraisal of the efficiency of the body chemistry.

After the individual graph (endocrinograph) is made, a sample of blood is taken to determine the **present** condition of the blood. Blood is the essence of life. It bathes and carries nutrients to every one of the billions of cells, and carries away waste produced from each cell. It carries oxygen to, and carbon dioxide away. Blood transports the minerals, the vitamins, the minute hormone output from every endocrine gland. It carries the antibodies that are necessary to resist and overcome bacterial infection. Blood is the dynamic force in life. In this complete blood examination twenty-four separate tests are made.

In the Page method of regulating body chemistry the degree of efficiency of body function is expressed by the calcium-phosphorus ratio and the amount of sugar present in the circulating blood. These determinations are made in addition to tweny-one other tests made on the blood sample. The ideal toward which the method of

regulation is directed is to maintain the blood sugar level at 100 milligrams, calcium 10, phosphorus 4 (or 2.5 parts of calcium to 1 part of phosphorus) per hundred cubic centimeters of blood. **At these levels the body functions most successfully and efficiently in all parts and organs.** To achieve these balances small amounts of endocrine supplements are usually given while the chemistry of the body is being regulated.

To carry on life processes energy must be supplied by food. Cells and tissues that are destroyed in the life processes must be replaced by food. The quantity of food is important, but more important is its quality. Everything that the body needs in the way of food must be supplied, everything must be left out that is injurious or that the body does not need. The proper and nutritious foods are advised, the improper and harmful foods are curtailed.

The **diet** is what is supplied in the form of food; **nutrition** is what the body utilizes. The diet may be satisfactory but if the chemical processes of assimilation are not good, the nutrition is below standard. Each person has an individual capacity for food utilization. Each person must be studied separately to determine his nutritional status. The differences in persons are in large part due to their endocrine patterns.

During the course of a body chemistry audit certain suggestions are made with respect to the type of food intake. While the study is being made some foods and drinks are prohibited. There



is nothing notably harsh or difficult about these prohibitions. Many of them may be relaxed within a short time. Other food restrictions must be considered to be permanent. These will be explained to the patient as treatment progresses.

**The patient must be impressed with the fact that the success of the treatment depends in large part on what he does himself. The role of the doctor is that of a director to show a patient what he may do for himself.**

The degree of success in the regulation of the body chemistry is determined by repeated blood examinations which give the evidence to show if the body chemistry is coming into balance. These blood examinations at frequent intervals record progress and the correctness or incorrectness of treatment. To achieve balance it is often necessary to change the amounts and kinds of endocrine supplements from time to time. In all cases these endocrine products are used in minute amounts; just as nature planned and produces them.

The goal of treatment is to discover the correct formula for each person. Each is different, no two are alike. A complete study is necessary for each one. After he has obtained the desired efficiency of his body chemistry the patient should see that it is maintained. A blood and urine examination at least once per year, and consultation with his biochemical doctor in person or by mail whenever the occasion demands insures the ideal of medicine - prevention in its broadest sense.

The system of body measurements and body analysis reveal both minor and major causes of ill health. By combining these two methods of interpretation in each case, there is a considerable saving of time in arriving at a correct body chemistry formula for each person.

During the phase of study and treatment a person may feel up and down, better and worse, while his body is adjusting to a new scheme of living. This is to be expected; this is natural. These are normal swings of feeling.

The time that it will take to achieve the proper balance will be determined by the length of time it has been out of balance, by the power and vitality within the person, and by the degree of cooperation from the patient.

You have the powers within yourself to improve your health. Use these powers to the fullest!

Collateral Reading


Price, "Nutrition and Physical Degeneration"

Abrahamson, "Body, Mind and Sugar"

Stefansson, "Not By Bread Alone"

Ucko, "Endocrine Diagnosis"

Sheldon, "Varieties of Human Physique"

de Castro, "Geography of Hunger"

Page, "Degeneration-Regeneration"