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MODERN MIRACLE MEN

AN ARTICLE

BY

REX BEACH

ENTITLED "MODERN MIRACLE MEN", RELATING TO PROPER FOOD MINERAL BALANCES BY DR. CHARLES NORTHEN, REPRINTED FROM COSMOPOLITAN, JUNE 1936

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MODERN MIRACLE MEN

DR. CHARLES NORTHEN, WHO BUILDS HEALTH FROM THE GROUND UP

This quiet, unballyhooed pioneer and genius in the field of nutrition demonstrates that countless human ills stem from the fact that impoverished soil of America no longer provides plant foods with the mineral elements essential to human nourishment and health! To overcome this alarming condition, he doctors sick soils and, by seeming miracles, raises truly healthy and health-giving fruits and vegetables

(By Rex Beach)

Do you know that most of us today are suffering from certain dangerous diet deficiencies which cannot be remedied until the depleted soils from which our foods come are brought into *proper mineral balance?*

The alarming fact is that foods—fruits and vegetables and grains—now being raised on millions of acres of land that no longer contains enough of certain needed minerals, are starving us—no matter how much of them we eat!

This talk about minerals is novel and quite startling. In fact, a realization of the importance of minerals in food is so new that the textbooks on nutritional dietetics contain very little about it. Nevertheless, it is something that concerns all of us, and the further we delve into it the more startling it becomes.

You'd think, wouldn't you, that a carrot is a carrot—that one is about as good as another as far as nourishment is concerned? But it *isn't;* one carrot may look and taste like another and yet be lacking in the particular mineral element which our system requires and which carrots are supposed to contain. Laboratory tests prove that the fruits, the vegetables, the grains, the eggs, and even the milk and the meats of today are not what they were a few generations ago. (Which doubtless explains why our forefathers thrived on a selection of foods that would starve us!) No man of today can eat enough fruits and vegetables to supply his system with the mineral salts he requires for perfect health, because his stomach isn't big enough to hold them! And we are running to big stomachs.

No longer does a balanced and fully nourishing diet consist merely of so many calories or certain vitamins or a fixed proportion of starches, proteins, and carbohydrates. We now know that *it must contain, in addition, something like a score of mineral salts.*

It is bad news to learn from our leading authorities that *99 percent of the American people are deficient in these minerals, and that a marked deficiency in any one of the more important minerals actually results in disease.* Any upset of the balance, any considerable lack of one or another element, however microscopic the body requirement may be, and we sicken, suffer, shorten our lives.

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This discovery is one of the latest and most important contributions of science to the problem of human health.

So far as the records go, the first man in this field of research, the first to demonstrate that most human foods of our day are poor in minerals and that their proportions are not balanced, was Dr. Charles Northen, an Alabama physician now living at Orlando, Fla. His discoveries and achievements are of enormous importance to mankind.

Following a wide experience in general practice, Dr. Northen specialized in stomach diseases and nutritional disorders. Later, he moved to New York and made extensive studies along this line, in conjunction with a famous French scientist from the Sorbonne. In the course of that work he convinced himself that there was little authentic, definite information on the chemistry of foods, and that no dependence could be placed on existing data.

He asked himself how foods could be used intelligently in the treatment of disease, when they differed so widely in content. The answer seemed to be that they could not be used intelligently. In establishing the fact that serious deficiencies existed and in searching out the reasons therefor, he made an extensive study of the soil. *It was he who first voiced the surprising assertion that we must make soil building the basis of food building* in order to accomplish human building.

"Bear in mind," says Dr. Northen, "that minerals are vital to human metabolism and health—and that no plant or animal can appropriate to itself any mineral which is not present in the soil upon which it feeds.

"When I first made this statement I was ridiculed, for up to that time people had paid little attention to food deficiencies and even less to soil deficiencies. Men eminent in medicine denied there was any such thing as vegetables and fruits that did not contain sufficient minerals for human needs. Eminent agricultural authorities insisted that *all* soil contained all necessary minerals. They reasoned that plants take what they need, and that it is the function of the human body to appropriate what it requires. Failure to do so, they said, was a symptom of disorder.

"Some of our respected authorities even claimed that the so-called secondary minerals played no part whatever in human health. It is only recently that such men as Dr. McCollum of Johns Hopkins, Dr. Mendel of Yale, Dr. Sherman of Columbia, Dr. Lipman of Rutgers; and Drs. H. G. Knight and Oswald Schreiner of the United States Department of Agriculture have agreed that these minerals are essential to plant, animal, and human feeding.

"We know that vitamins are complex chemical substances which are indispensable to nutrition, and that each of them is of importance for the normal function of some special structure in the body. Disorder and disease result from any vitamin deficiency.

"It is not commonly realized, however, that vitamins control the body's appropriation of minerals, and in the absence of minerals they have no function to perform. Lacking vitamins, the system can make some use of minerals, but lacking minerals, vitamins are useless.

"Neither does the layman realize that there may be a pronounced difference in both foods and soils—to him one vegetable, one glass of milk, or one egg is about the same as another. Dirt is dirt, too, and

feeding. They can be made quarrelsome and belligerent; they can even be turned into cannibals and be made to devour each other.

A cageful of normal rats will live in amity. Restrict their calcium, and they will become irritable and draw apart from one another. Then they will begin to fight. Restore their calcium balance and they will grow more friendly; in time they will begin to sleep in a pile as before.

Many backward children are "stupid" merely because they are deficient in magnesia. We punish them for our failure to feed them properly.

Certainly our physical well-being is more directly dependent upon the minerals we take into our systems than upon calories or vitamins or upon the precise proportions of starch, protein, or carbohydrates we consume.

It is now agreed that at least *16 mineral elements are indispensable for normal nutrition*, and several more are always found in small amounts in the body, although their precise physiological role has not been determined. Of the 11 indispensable salts, calcium, phosphorus, and iron are perhaps the most important.

Calcium is the dominant nerve controller; it powerfully affects the cell formation of all living things and regulates nerve action. It governs contractility of the muscles and the rhythmic beat of the heart. It also coordinates the other mineral elements and corrects disturbances made by them. It works only in sunlight. Vitamin *D* is its buddy.

Dr. Sherman of Columbia asserts that *50 percent* of the American people are starving for calcium. A recent atricle in the Journal of the American Medical Association stated that out of 4,000 cases in New York Hospital, only 2 were not suffering from a lack of calcium.

What does such a deficiency mean? How would it affect your health or mine? So many morbid conditions and actual diseases may result that it is almost hopeless to catalog them. Included in the list are rickets, bony deformities, bad teeth, nervous disorders, reduced resistance to other diseases, fatigability, and behavior disturbances such as incorrigibility, assaultiveness, nonadaptability.

Here's one specific example: The soil around a certain Midwest city is poor in calcium. Three hundred children of this community were examined and nearly 90 percent had bed teeth, 69 percent showed affections of the nose and throat, swollen glands, enlarged or diseased tonsils. More than one-third had defective vision, round shoulders, bow legs, and anemia.

Calcium and phosphorus appear to pull in double harness. A child requires as much per day as two grown men, but studies indicate a common deficiency of both in our food. Researches on farm animals point to a deficiency of one or the other as the cause of serious losses to the farmers, and when the soil is poor in phosphorus these animals become bone-chewers. Dr. McCollum says that when there are enough phosphates in the blood there can be no dental decay.

Iron is an essential constituent of the oxygen-carrying pigment of the blood: iron starvation results in anemia, and yet iron cannot be assimilated unless some *copper* is contained in the diet. In Florida many cattle die from an obscure disease called "salt sickness." It has been found to arise from a lack of iron and copper in the soil and

hence in the grass. A man may starve for want of these elements just as a beef "critter" starves.

If *iodine* is not present in our foods the function of the thyroid gland is disturbed and goiter afflicts us. The human body requires only fourteen-thousandths of a milligram daily, yet we have a distinct "goiter belt" in the Great Lakes section, and in parts of the Northwest the soil is so poor in iodine that the disease is common.

So it goes, down through the list, each mineral element playing a definite role in nutrition. A characteristic set of symptoms, just as specific as any vitamin-deficiency disease, follows a deficiency in any one of them. It is alarming, therefore, to face the fact that we are starving for these precious, health-giving substances.

Very well, you say, if our foods are poor in the mineral salts they are supposed to contain, why not resort to dosing?

That is precisely what is being done, or being attempted. However, those who should know assert that the human system cannot appropriate those elements to the best advantage in any but the food form. At best, only a part of them in the form of drugs can be utilized by the body, and certain dietitians go so far as to say it is a waste of effort to fool with them. Calcium, for instance, cannot be supplied in any form of medication with lasting effect.

But there is a more potent reason why the curing of diet deficiencies by drugging hasn't worked out so well. Consider those 16 indispensable elements and those others which presumably perform some obscure function as yet undetermined. Aside from calcium and phosphorus, they are needed only in infinitesimal quantities, and the activity of one may be dependent upon the presence of another. To determine the precise requirements of each individual case and to attempt to weigh it out on a druggist's scales would appear hopeless.

It is a problem and a serious one. But here is the hopeful side of the picture: *Nature can and will solve it if she is encouraged to do so.* The minerals in fruit and vegetables are colloidal; i. e., they are in a state of such extremely fine suspension that they can be assimilated by the human system: It is merely a question of giving back to nature the materials with which she works.

We must rebuild our soils: Put back the minerals we have taken out. That sounds difficult but it isn't. Neither is it expensive. Therein lies the short cut to better health and longer life.

When Dr. Northen first asserted that many foods were lacking in mineral content and that this deficiency was due solely to an absence of those elements in the soil, his findings were challenged and he was called a crank. But differences of opinion in the medical profession are not uncommon—it was only 60 years ago that the Medical Society of Boston passed a resolution condemning the use of bathtubs—and he persisted in his assertion that inasmuch as foods did not contain what they were supposed to contain, no physician could with certainty prescribe a diet to overcome physical ills.

He showed that the textbooks are not dependable because many of the analyses in them were made many years ago, perhaps from products raised in virgin soils, whereas our soils have been constantly depleted. Soil analyses, he pointed out, reflect only the content of samples. One analysis may be entirely different from another made 10 miles away.

"And so what?" came the query.

Dr. Northen undertook to demonstrate that something could be done about it. *By reestablishing a proper soil balance he actually grew crops that contained an ample amount of the desired minerals.*

This was incredible. It was contrary to the books and it upset everything connected with diet practice. The scoffers began to pay attention to him. Recently the Southern Medical Association, realizing the hopelessness of trying to remedy nutritional deficiencies without positive factors to work with, recommended a careful study to determine the real mineral content of foodstuffs and the variations due to soil depletion in different localities. These progressive medical men are awake to the importance of prevention.

Dr. Northen went even further and proved that crops grown in a properly mineralized soil were bigger and better; that seeds germinated quicker, grew more rapidly and made larger plants; that trees were healthier and put on more fruit of better quality.

By increasing the mineral content of citrus fruit he likewise improved its texture, its appearance and its flavor.

He experimented with a variety of growing things, and in every case the story was the same. By mineralizing the feed at poultry farms, he got more and better eggs; by balancing pasture soils, he produced richer milk. Persistently he hammered home to farmers, to doctors, and to the general public the thought that life depends upon the minerals.

His work led him into a careful study of the effects of climate, sunlight, ultraviolet and thermal rays upon plant, animal, and human hygiene. In consequence he moved to Florida. People familiar with his work consider him the most valuable man in the State. I met him by reason of the fact that I was harassed by certain soil problems on my Florida farm which had baffled the best chemists and fertilizer experts available.

He is an elderly, retiring man, with a warm smile and an engaging personality. He is a trifle shy until he opens upon his pet topic; then his diffidence disappears and he speaks with authority. His mind is a storehouse crammed with precise, scientific data about soil and food chemistry, the complicated life processes of plants, animals, and human beings—and the effect of malnutrition upon all three. He is perhaps as close to the secret of life as any man anywhere.

"Do you call yourself a soil or a food chemist?" I inquired.

"Neither. I'm an M. D. My work lies in the field of biochemistry and nutrition. I gave up medicine because this is a wider and a more important work. Sick soils mean sick plants, sick animals, and sick people. Physical, mental, and moral fitness depends largely upon an ample supply and a proper proportion of the minerals in our foods. Nerve function, nerve stability, nerve cell-building likewise depend thereon. I'm really a doctor of sick soils."

"Do you mean to imply that the vegetables I'm raising on my farm are sick?" I asked.

"Precisely! They're as weak and undernourished as anemic children. They're not much good as food. Look at the pests and the diseases that plague them. Insecticides cost farmers nearly as much as fertilizer these days.

"A healthy plant, however, grown in soil properly balanced, *can and will resist most insect pests.* That very characteristic makes it a better food product. You have tuberculosis and pneumonia germs

in your system but you're strong enough to throw them off. Similarly, a really healthy plant will pretty nearly take care of itself in the battle against insects and blights—and will also give the human system what it requires."

"Good heavens! Do you realize what that means to agriculture?"

"Perfectly. Enormous savings. Better crops. Lowered living costs to the rest of us. But I'm not so much interested in agriculture as in health."

"It sounds beautifully theoretical and utterly impractical to me," I told the doctor, whereupon he gave me some of his case records.

For instance, in an orange grove infested with scale, when he restored the mineral balance to part of the soil, the trees growing in that part became clean while the rest remained diseased. By the same means he had grown healthy rosebushes between rows that were riddled by insects.

He had grown tomato and cucumber plants, both healthy and diseased, where the vines intertwined. The bugs ate up the diseased and refused to touch the healthy plants! He showed me interesting analyses of citrus fruit, the chemistry and the food value of which accurately reflected the soil treatment the trees had received.

There is no space here to go fully into Dr. Northen's work but it is of such importance as to rank with that of Burbank, the plant wizard, and with that of our famous physiologists and nutritional experts.

"Healthy plants mean healthy people," said he. "We can't raise a strong race on a weak soil. Why don't you try mending the deficiencies on your farm and growing more minerals into your crops?"

I did try and I succeeded. I was planting a large acreage of celery and under Dr. Northen's direction I fed minerals into certain blocks of the land in varying amounts. When the plants from this soil were mature I had them analyzed, along with celery from other parts of the State. It was the most careful and comprehensive study of the kind ever made, and it included over 250 separate chemical determinations. I was amazed to learn that my celery had more than twice the mineral content of the best grown elsewhere. Furthermore, it kept much better, with and without refrigeration, proving that the cell structure was sounder.

In 1927, Mr. W. W. Kincaid, a "gentleman farmer" of Niagara Falls, heard an address by Dr. Northen and was so impressed that he began extensive experiments in the mineral feeding of plants and animals. The results he has accomplished are conspicuous. He set himself the task of increasing the iodine in the milk from his dairy herd. He has succeeded in adding both iodine and iron so liberally that one glass of his milk contains all of these minerals that an adult man requires for a day.

Is this significant? Listen to these incredible figures taken from a bulletin of the South Carolina Food Research Commission: "In many sections *three out of five persons* have goiter and a recent estimate states that *30 million people in the United States suffer from it.*"

Foods rich in iodine are of the greatest importance to these sufferers.

Mr. Kincaid took a brown Swiss heifer calf which was dropped in the stockyards, and by raising her on mineralized pasturage and a properly balanced diet made her the third all-time champion of

her breed! In one season she gave 21,924 pounds of milk. He raised her butterfat production from 410 pounds in 1 year to 1,037 pounds. Results like these are of incalculable importance.

Others besides Mr. Kincaid are following the trail Dr. Northen blazed. Similar experiments with milk have been made in Illinois and nearly every fertilizer company is beginning to urge use of the rare mineral elements. As an example I quote from statements of a subsidiary of one of the leading copper companies:

> Many States show a marked reduction in the productive capacity of the soil * * * in many districts amounting to a 25 to 50 per cent reduction in the last 50 years * * *. Some areas show a tenfold variation in calcium. Some show a sixtyfold variation in phosphorous * * *. Authorities * * * see soil depletion, barren livestock, increased human death rate due to heart disease, deformities, arthritis, increased dental caries, all due to lack of essential minerals in plant foods.

"It is neither a complicated nor an expensive undertaking to restore our soils to balance and thereby work a real miracle in the control of disease," says Dr. Northen. "As a matter of fact, it's a money-making move for the farmer, and any competent soil chemist can tell him how to proceed.

"First determine by analysis the precise chemistry of any given soil, then correct the deficiencies by putting down enough of the missing elements to restore its balance. The same care should be used as in prescribing for a sick patient, for *proportions are of vital importance.*

"In my early experiments I found it extremely difficult to get the variety of minerals needed in the form in which I wanted to use them but advancement in chemistry, and especially our ever-increasing knowledge of colloidal chemistry, has solved that difficulty. It is now possible, by the use of minerals in colloidal form, to prescribe a cheap and effective system of soil correction which meets this vital need and one which fits in admirably with nature's plans.

"Soils seriously deficient in minerals cannot produce plant life competent to maintain our needs, and with the continuous cropping and shipping away of those concentrates, the condition becomes worse.

"A famous nutrition authority recently said, 'One sure way to end the American people's susceptibility to infection is to supply through food a balanced ration of iron, copper, and other metals. An organism supplied with a diet adequate to, or preferably in excess of, all mineral requirements may so utilize these elements as to produce immunity from infection quite beyond anything we are able to produce artificially by our present method of immunization. You can't make up the deficiency by using patent medicine.'

"He's absolutely right. Prevention of disease is easier, more practical, and more economical than cure, but not until foods are standardized on a basis of what they contain instead of what they look like, can the dietitian prescribe them with intelligence and with effect.

"There was a time when medical therapy had no standards because the therapeutic elements in drugs had not been definitely determined on a chemical basis. Pharmaceutical houses have changed all that. Food chemistry, on the other hand, has depended almost entirely upon governmental agencies for its research, and in our real knowledge of values we are about where medicine was a century ago.

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