

Nutrition Illiteracy and Nutritional Inadequacy

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Dr. William Kaufman (1910-2000) was the first physician to employ very large quantities of niacinamide to dramatically restore range of joint motion in arthritic patients. So successful was he that letters were delivered to him addressed only to "The Arthritis Doctor." Starting in the 1930s, and continuing through 25 years of private practice, Kaufman kept meticulous patient records that repeatedly verified the effectiveness and also the safety of orthomolecular therapy. "I noted," he wrote, "that niacinamide, alone or combined with other vitamins, in a thousand patient-years of use has caused no adverse side effects." Dr. Kaufman published over 85 articles in both journals and popular magazines. He was inducted into the Orthomolecular Medicine Hall of Fame in 2004.)<http://orthomolecular.org/hof/wkaufman.html>

Before her death on February 13, 2005, Mrs. Charlotte Schnee Kaufman had sent me an unpublished article draft written by her husband. Here, edited and with additional citations and relevant Internet links, is some strikingly TIMEless commentary by a man aptly described by Linus Pauling as a "pioneer of vitamin therapy."

Introduction

My attention has been called to the cover story on vitamins which appeared in the April 6, 1992 *TIME* magazine.¹ Another major article on nutrition appeared in the March 10, 1992 *New York Times* with the heading, "Vitamins Win Support as Potent Agents of Health."² Both articles were probably inspired by a New York Academy of Sciences meeting

held in Arlington, Virginia some weeks ago on the theme of vitamins, nutrition and health.³ I will comment on the *TIME* magazine's feature article on vitamins a little later.

First, I'll list the vitamins that were first available commercially from 1934 through 1940 from Merck & Company. More than a half century ago I started to use these vitamins in the successful treatment of my patients who had a variety of health problems.

1934 Ascorbic acid (vitamin C)

1937 Thiamine hydrochloride (B₁)

1938 Nicotinic acid (niacin) and nicotinic acid amide (niacinamide), both B₃

1938 Riboflavin (B₂)

1940 Pyridoxine hydrochloride (B₆)

1940 Alpha-tocopherol (vitamin E)

1940 Vitamin K

1940 Menadione (strong vitamin K activity)

1940 Calcium pantothenate (B₅)

Vitamins A and D were available before 1934, biotin in 1943, and beta carotene, vitamin B₁₂, and folic acid soon thereafter.

Thus, none of these vitamins are "Johnny-come-latelys." In a half century, a huge medical literature is available on the diagnosis of vitamin deficiencies and the safe therapeutic use of vitamins even when some were used in megadoses. Foods, and additional vitamins as macro- and micro-mineral supplements, are often important factors in improving the health and well being of many millions of people.

Diet

First of all, food and water must serve as the basis for diets, nutrition and the support of life provided the food can be eaten by the person, be digested and metabolized properly, and then used to

1. (1910-2000) Written April 7, 1992

run the machinery of life, supply needed energy and provide materials for cellular repair. However, it has never been proven scientifically with double blind controls that food and water alone can provide all the nutrients in amounts that will ensure optimal long term health to all individuals.

Humans display considerable biochemical individuality, and therefore there are also differences in nutritional needs for different people. A diet that is healthful for a non-allergic person may make another person who is allergic to some of the components of such a diet quite ill. Individuals' foods can vary greatly in their nutritional content at the time of purchase. Food tables will not dependably tell you the vitamin and mineral content of the food you are purchasing. Simply putting vinegar on a freshly cut cole slaw salad will cause a 53% loss of vitamin C content in an hour. Potatoes are a good source of vitamin C. But reconstituting dehydrated potato flakes to make mashed potatoes and keeping this on the steam table for an hour will eliminate all the vitamin C. Oranges and potatoes held in storage for many months before being sold to grocery stores will have a decreased nutritional value. Cooking foods in a conventional manner can cause considerable loss of both heat labile and heat stable vitamins, as well as minerals. A nutritionally important oil has been genetically engineered out of soybeans to decrease spoilage which simultaneously decreased this type of soybean's nutritional value.

Now that preservation of some foods by exposure to heavy doses of radiation is being allowed, it would not be surprising if these foods have their nutritional value diminished, plus there is the possibility that some of the molecular changes in the foods caused by the radiation may engender toxic substances which over TIME might cause ill-health. Milling wheat to make white flour causes a 70 to 80% loss

of vitamins and minerals which, despite the so-called current "enrichment," leaves white bread inferior to whole wheat bread because of the loss of vitamin B₆, vitamin E, chromium, manganese and fiber, all of which have not been corrected by additional supplementation.

Doctors Who Believe Food Alone Supplies All Nutritional Needs

Doctors who believe that you can get all the nourishment, including vitamins and minerals, that you need to sustain optimal health throughout life from food alone can be very smug. They have the equivalent of an orthodox religious belief: "Food is everything." They don't have to concern themselves with the fact that the nutritional value of foods their patient eats may be greatly inferior to the listed nutritional values given in food tables. They don't have to concern themselves looking for evidence of malnutrition as long as the patient eats food that sustains his weight. The patient's diet may not include whole grains or organ meats, the lack of which will cause the patient to have a chromium deficiency which deepens over time leading to important and potentially lethal forms of degenerative diseases which the "food is everything" doctor will mistakenly ascribe to aging alone. These "food is everything" doctors don't have to trouble themselves with thinking about how a patient's health can be improved over the long term by providing him with the additional beneficial vitamins and macro- and micro- mineral supplements tailored to his actual nutritional needs.

The two-liner attributed to Dr. Victor Herbert in the *TIME* magazine vitamin article ("We get all the vitamins we need in our diets. Taking supplements just gives you expensive urine") completely overlooks the benefits vitamin supplements can produce in our bodies before being excreted in our urine. During the

early part of World War II, GI's whose severe wound infections were treated with penicillin had to save all their urine so that the penicillin which had been excreted in their urine could be recovered and then used to treat other soldiers with life threatening wound infections. If one only considered the penicillin that was excreted in the urine, and not the benefits that the GI had in having his infection cured by penicillin, one could sneer that penicillin's only function was to give the GI expensive urine. If one considered only the function of penicillin in the GI's body, one would have to marvel at the miracle of its curing a potentially lethal infection,

Most Doctors Are Nutritionally Illiterate

The subject of nutrition is not taught well in most medical schools. Thus, medical students, residents, doctors, and medical faculty may not even be able to recognize classic vitamin deficiencies. The University of Alabama's Dr. Charles Butterworth, Jr., referred to in the *TIME* magazine article on vitamins, was a guest lecturer at Yale University School of Medicine some twenty years ago when I attended his lecture. During his talk on the nutrition of surgical patients, Dr. Butterworth showed a large number of color slides of a patient who had classic pellagra and of another patient who had classic scurvy. Not a single medical student, resident, dietician or faculty member attending the lecture was able to make the correct diagnosis. If doctors fail to recognize classic vitamin deficiencies, these afflicted patients cannot receive prompt life-saving vitamin treatment. But even worse, medical students are not taught to recognize the enormously prevalent non-classic vitamin deficiency (and micro- and macro-mineral deficiency) disorders which impair the health and well being of many millions of people. Unless such conditions are recognized, they cannot receive "curative" treatment. Furthermore,

such undiagnosed non-classic vitamin and mineral deficiency patients, instead of being given the "curative" vitamins and minerals they need, are often given drugs which they do not need. Thus, in addition to unneeded pharmacologic effects, they are also exposed to the drugs' health reducing side-effects.

What do United States medical schools teach medical students about nutrition? Marian Burros in her column entitled "Eating Well" which appeared in the April 1, 1992 *New York Times*⁴ gives a stunning answer to this question:

"Only about one third of the 125 or so medical schools require students to take courses in nutrition. And, most of the courses are short. The one at Cornell is eight hours... The University of Alabama at Birmingham⁵ is one of the exceptions requiring 52 hours of nutrition education for its medical students... The remaining two thirds of this country's medical schools only offer elective courses... Nutrition, of course, is laced through the many departments in medical school - physiology, gastroenterology, cardiology, biochemistry. But students do not necessarily recognize that it can be applied to preventive medicine... Dr. Eleanor Young⁶ said 'All studies show that if information is not taught as nutrition but is incorporated into other courses, students come away not knowing that it is nutrition. They think of it as physiology or whatever and so they do not use it in terms of practical applications of preventive medical care'... In a recent survey conducted in the southeastern region of the United States in 1986, eighty-five percent of the medical students were dissatisfied with the amount of medical nutrition education and sixty percent were dissatisfied with the quality. 'Without question,' Dr. Roland Weinsier⁷ said, 'A greater awareness and knowledge (of nutrition) among physicians could well impact on the prevalence of disease...'"

Is it any wonder that most doctors are nutritional illiterates? Is it any wonder why doctors who are nutritional illiterates often hide their lack of nutritional knowledge under the aegis “food provides all the nutrition a person will ever need”?

For the last half century, there have been recommendations that nutrition should be taught in medical schools as a required course. Currently, says the article, experts suggest that all medical schools should devote at least 40 hours to teaching medical students nutrition.

Linus Pauling

I have had an “off and on” correspondence with Dr. Linus Pauling for several decades. He has referred to my use of niacinamide in the treatment of arthritis⁸ in some of his publications on nutrition. Some years ago, Pauling’s foundation invited me to come to California to work with Dr. Pauling on cancer research. Unfortunately, at that time I could not make such a move.

I think the three reporters who made the denigrating statement in the *TIME* magazine vitamin article (“Certainly Linus Pauling lost much of his Nobel-Laureate luster when he began championing vitamin C back in 1970 as a panacea for everything from the common cold to cancer”) were very remiss in not first reading and then calling attention to the important government sponsored meeting⁹ which resulted in the following report:

“(T)here has been considerable public interest in the possibility of a role of this vitamin (C) in cancer. In order that this debate might take place in a rigorous and informed manner, we attempted to bring together not only the latest research on basic actions, such as free-radical scavenging or enzyme functions, but also some of the basic laboratory and animal studies relating to cancer.

“The well known anti-oxidant and free-radical scavenging activities (of vita-

min C) are discussed in the first series of papers. Because free-radical damage and formation of lipid peroxides are suspected in carcinogenesis as well as cardiovascular disease, this may be important for disease prevention.

“Approximately half of the symposium addressed the role of ascorbate in cancer prevention or as adjuvant in cancer therapy, primarily in animal models. In vitro studies included research on oncogenic transformations and effects on the HIV virus. Moreover, several researchers presented data that suggest a role for ascorbate in reducing the toxicity or improving the effectiveness of conventional anti-cancer therapies. Finally, a review is presented of all human epidemiologic studies between vitamin C and cancer prevention.”

Here are a few statement’s taken from Gladys Block’s meeting abstract:

“Approximately three-fourths of the epidemiological studies (33 of 46) of the role of vitamin C in cancer incidence or mortality have found statistically significant protection effects... The evidence for a protective effect of vitamin C or some component of fruits is strong and consistent for cancers of the esophagus, larynx, oral cavity and pancreas and there is strong evidence for cancers of the stomach and cervix... A major meta-analysis of breast cancer studies suggests a significant protective role for vitamin C in that cancer as well.”¹⁰

Without taking the *TIME* to note all the titles of papers that indicate vitamin C inhibits the growth of cancer, I will cite just three:

1. Tsao CS. Inhibiting effect of ascorbic acid on the growth of human mammary tumor xenografts. *Am J Clin Nutr*, 1991 Dec;54(6 Suppl):1274S-1280S. (<http://www.ajcn.org/cgi/reprint/54/6/1274S>)
2. Liehr JG. Vitamin C reduces the incidence and severity of renal tumors induced by estradiol or diethylstilbes-

trol. *Am J Clin Nutr*, 1991 Dec;54(6 Suppl):1256S-1260S. (<http://www.ajcn.org/cgi/reprint/54/6/1256S.pdf>)

3. Pauling L. Effect of ascorbic acid on incidence of spontaneous mammary tumors and UV-light-induced skin tumors in mice. *Am J Clin Nutr*, 1991 Dec;54(6 Suppl):1252S-1255S. (<http://www.ajcn.org/cgi/reprint/54/6/1252S.pdf>)

Linus Pauling's view that vitamin C has important anti-cancer properties is gaining substantial support in current laboratory and animal experiments.^{11,12} Where are the people who formerly ridiculed his ideas that vitamin C has anti-cancer actions?

A word about vitamin C for colds: In the early 1940s, the health service of a mid-west University prescribed vitamin C to relieve students' nasal congestion associated with colds. Although Charlotte and I go decades without having colds, we have used 250 milligram doses of vitamin C to decongest our nasal membranes when these get congested from a variety of allergies. However, this effect of vitamin C has a short half-life. Thus, it needs to be given at one and a half to two hour intervals during the day and upon awakening during the night. This keeps the nasal membranes decongested, reduces pain and discomfort, and prevents sinusitis. Usually, in 24 hours there is no further need to take vitamin C in this manner.

FDA, RDA, AND RDI

The *TIME* magazine article points out that the FDA is planning to destroy the Recommend Daily Allowance system as a practical guide to the amounts of various nutrients that would provide decent nutrition to infants, children and adolescents, adult males of different ages, women of different ages, and pregnant or lactating women. According to the article in *TIME* magazine, the FDA intends to replace the RDA with the so-called Reference Daily Intake.

The RDI system proposes to ignore

the RDAs for different age groups and sexes. "Instead of endorsing an allotment appropriate to ravenous, fast-growing teenage males, it would simply average the RDAs for different age groups. The new figures are considerably lower, and, says the agency, are a better barometer of the typical American's nutritional needs. Essentially they reflect the requirements of adult women." This new system slashes the RDAs of vitamin A, Bs, C, E and other nutrients by 10% to 80%. This will allow food manufacturers to put food products on the market legally that are much less nutritious than the ones that now have to conform to the RDA system.

There is already an enormous amount of malnutrition in this country because the large population of the poor cannot afford decent nutrition and much of their ill-health and lack of initiative is based on such malnutrition. The FDA will worsen this situation with its reduction of the RDAs.

One of the very important documents in the field of nutrition is "Inadequate Diets and Nutritional Deficiencies in the United States: Their Prevalence and Significance." This was a report by the National Research Council's Committee on Diagnosis and Pathology of Nutritional Deficiencies, Food and Nutrition Board, published November, 1943. Its conclusions and recommendations are just as applicable to today's widespread malnutrition as they were when this report was issued.

"All the evidence from numerous surveys over the past ten years to the present among persons of all ages in many localities is without exception in complete agreement that inadequate diets are widespread in the nation.

"All the data from numerous surveys with new methods among persons of all ages in many regions are entirely in accord in showing that deficiency states are rife throughout the nation. Relatively few are the traditional severe acute types. Most

are milder in intensity and gradual in their course. Predominantly they are subacute or chronic states: some marked, but very many mild or moderate...”

“On the corrective side, there is need for detection and therapeutic treatment of deficiency states among the population. For this project it is necessary to disseminate the new diagnostic methods among the medical and public health professions. Foremost among the steps in this direction would be [1] preparation of a handbook on methods of detecting deficiency states [2] establishment of training centers for instruction in the medical aspects of nutrition, especially the diagnosis of deficiency states; and, [3] introduction of adequate courses in nutrition, particularly its clinical aspects, into medical schools.”¹³

The nutritional conditions that existed in the 1930s and early 1940s are just about the same as exist now in the working poor, in those on public assistance, and even in those better off economically. The suggestions made about the need for preventive and curative measures are just as needed today as they were in the 1930s and 1940s. So is the need for adequate instruction in nutrition for every medical student in every medical school. So is proper nutritional enrichment of foods.

What is astonishing is that *TIME* magazine prints such statements as, “The long term effects of high-dose supplements are still unknown and doctors warn of dangers even in the short term” and “Advises Dr. Walter Willett of the Harvard School of Public Health: ‘At this time I say don’t take megadoses, but I’m not ruling out that in two or three years we might change our mind.’”

It has been known for more than a half century that vitamins in properly chosen megadoses (and macro- and micro-mineral supplements) can greatly improve the long term health and well-being of many persons eating ordinary

diets. Some of these older observations that vitamins can improve health are just being rediscovered as if they were brand new scientific findings. The rediscovers of old and proven observations can’t believe their own findings. They call their conclusions tentative, and seem afraid of recommending vitamin megadoses that should be widely used in nutritional treatment.

If doctors want to know the long term effects of various vitamin megadoses, they have to go back and study the literature. Since most articles and books on this subject cannot be found by electronic means, it requires that they make such a literature search manually.¹⁴

The FDA’s rejection of the three nutritional applications (which proposed to use vitamins to treat disease) as being premature is part of their anti-nutritional bias. Just think: if a nutritional approach would delay myocardial infarctions by ten or fifteen years, would not this be a crippling blow to the profits of pharmaceutical companies that produce cardiac medications and cholesterol reducing agents?

Charlotte and I have long taken megadoses of vitamins and appropriate amounts of macro- and micro-minerals. The fact that we are alive today is attributable to the beneficial effects of this nutritional supplementation. Dr. Linus Pauling has taken megadoses of vitamin C for decades.

One fascinating thing is that from 2 to 5% of all hospital admissions result from severe adverse effects from prescription drugs. Yet, doctors have no compunction in prescribing these.

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5. An orthomolecular physician who contributed greatly to the superior nutrition program at the U. of Alabama at Birmingham was Emanuel Cheraskin, M.D., D.M.D. (1916-2001). His complete bibliography is accessible at http://www.doctoryourself.com/biblio_cheraskin.html.
6. Eleanor Young, Ph.D., Professor, Department of Medicine, Division of Gastroenterology and Nutrition, U. of Texas Health Science Center, San Antonio, taught for over 57 years. She is the author of over 100 scientific papers, and was inducted into the Texas Women's Hall of Fame in 1994 <http://www.twu.edu/TWHF/tw-young.htm> .
7. Roland L. Weinsier, M.D., Dr.P.H. (1942-2002) was chairman of the Department of Nutrition Sciences at the U. of Alabama at Birmingham from 1988 through 1999. He is profiled by Heimburger DC and Allison DB. In memoir. *Amer J Clin Nutr*, 2003; March, 77(3), 525-526. <http://www.ajcn.org/cgi/content/full/77/3/525>
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14. While the Journal of Orthomolecular Medicine is still excluded from the US National Library of Medicine's MEDLINE, JOM is included in a growing number of medical databases. Google, Yahoo, and other major Internet search engines have greatly improved access to nutritional therapy papers.

For Further Reading

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- Saul AW: Taking the cure: The pioneering work of William Kaufman: Arthritis and ADHD. *J Orthomol Med*, 2003; 18(1), p 29-32. Over 50 years ago, Dr. Kaufman described how the lack of a just a single nutrient can cause diverse diseases, including what is often labeled as attention-deficit hyperactivity disorder.
- A complete bibliography of Dr. Kaufman's work is posted at http://www.doctoryourself.com/biblio_kaufman.html
- The extensive (30 shelf feet) William and Charlotte Kaufman Archive is located at the Special Collections Library, on the 7th floor of the Harlan Hatcher Graduate Library, University of Michigan, Ann Arbor, MI 48109. Telephone: 734-764-9377. Website: <http://www.lib.umich.edu/spec-coll/> e-mail: special.collections@umich.edu