

The War Against Vitamin Therapy

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"Dr. Klenner reported that patients given vitamin C would suffer no residual defects from their polio. A controlled study in England on 70 children, half given vitamin C and half given placebo showed that none of the treated cases developed any paralysis."

I have been involved in megavitamin controversies from 1955 when with two colleagues we [1] published our paper showing that niacin lowered total cholesterol levels. This was quickly confirmed because Dr. W. B. Parsons, Jr[2] . It was easy to measure cholesterol levels. Dr Parsons is one of the most knowledgeable and experienced internists in the use of niacin to lower cholesterol levels. But after we[3] published a much more comprehensive paper where we concluded: (1) that the addition of niacin or niacinamide in large doses was therapeutic for acute and non deteriorated schizophrenics; (2) was not therapeutic for chronic patients, our involvement in controversy became massive, until today even though every study using the same type of patients, the same methods and the same regimen, has corroborated our findings.

The conclusions reached by Dr. E. Cameron and Linus Pauling[4] on the beneficial effect of ascorbic acid on the outcome of terminal cancer was just as forcefully rejected by the cancer establishment. The main reason for the non acceptance of the Vale of Leven's conclusions and for the non acceptance of our psychiatric findings is very simple. We are just now beginning to emerge from the vitamins-as-prevention paradigm into the vitamins-as-treatment paradigm. Psychiatry is simply ten or more years behind the rest of the medical sciences.

The Five Stages of Vitamin Discovery and Use

Machlin[5] divided the history of the vitamins into five periods. The first phase was present from 1500 B.C. to about 1900 A.D. when it was empirically observed that certain foods prevented some diseases. Egyptians used liver to prevent night blindness. Central American Indians used specially treated and cooked corn to prevent pellagra for several thousand years.

The second period started about 1890 and continued until about 1910. During this period the relationship between the lack of certain foods and disease became established. Thus polished rice was proven to cause beri beri. Of course, if brown rice had remained the staple food of the Japanese Navy there would have been no problem and no discovery of thiamin as a vitamin. During the first period it became recognized that altering the

natural food supply would produce disease. This lesson is still imperfectly understood by most modern societies.

The third phase from 1900 to 1948 was the golden age of vitamin discovery, isolation and synthesis of vitamins. The fourth phase from 1933 began with the first commercial synthesis of vitamin C and continues today. These four phases comprise the vitamin-as-prevention paradigm. This paradigm became so firmly established that only now is it beginning to weaken by the onslaught of new information.

The fifth phase is the recognition of health effects beyond prevention and new biochemical functions. It is the vitamin-as-treatment paradigm. It is beginning to enter the medical profession, has not yet been accepted by the medical schools which remain many years behind in the teaching of nutrition and is still tightly held by dietitians and many nutritionists, especially those working for institutions.

The introduction of this last phase is credited by Machlin to our paper in 1955 which showed that megadoses of nicotinic acid decreased total cholesterol, the decrease being relatively greater the higher the initial blood level. He wrote, "I somewhat arbitrarily started the fifth period with the report in 1955 of the cholesterol-lowering effect of niacin, which is a well-accepted response of the vitamin that has nothing to do with its coenzyme role and is a clear health effect beyond preventing the deficiency disease pellagra". I had concluded many years ago that this early report would be one of the most important findings which would take us into the modern paradigm. It is the first vitamin to be approved for megadose use by FDA, for lowering cholesterol, but it could also be used for any other indication including the schizophrenias.

The Vitamin-as-Prevention Paradigm

This paradigm is described by the following rules or beliefs:

1) That vitamins are catalysts and therefore are needed in very small doses since they can be recycled almost indefinitely.

2) That they are needed only to prevent deficiency disease i.e. diseases caused by a deficiency of these vitamins. Thiamin is needed to prevent beri beri, nicotinic acid is needed to prevent pellagra and vitamin C is needed to prevent scurvy.

It therefore follows that any use of vitamins which disobeys these rules is not indicated and has by many medical societies been considered unethical practice or malpractice. If they are needed only in small doses the use of large doses must be forbidden. If they are used only to prevent disease, any use to treat other disease must be forbidden.

For these reasons regulatory daily requirements were developed as a guide to society and to the professions. They are invariably small doses based upon this paradigm and upon very little real hard evidence of their practicality and usefulness. The prevention paradigm adherents presented a hard and secure front against those who would break its rules by enforcing the view that large doses were never needed, that they were potentially

dangerous (these dangers were never clearly defined and related to dose level, and the height of sarcasm thrown against vitamins-as-treatment physicians was that the only thing vitamins would do is to enrich the urine and the waters into which that urine ran. Just a few months ago a physician attacked some of my views in a popular medical journal by claiming that the waters around Victoria must be rich in vitamin C. If I had retorted I would have added that this is better than enriching them with antibiotics, tranquilizers, antidepressants and the thousands of drugs which now enrich the waters. A physician friend and colleague lost his medical license in Saskatchewan. One of the charges against him was that he gave a patient intravenous ascorbic acid. Another was that he diagnosed a patient schizophrenic with the help of a test developed by Humphry Osmond and I called the HOD[6] test. This is a very helpful perceptual test which yields probability levels for the presence of schizophrenia.

Vitamin-as-Treatment Paradigm

This paradigm contains the following new rules, based upon a good deal of evidence:

) That optimum doses should be used in both prevention and treatment and that these doses vary from very small to very large, i.e. into the megavitamin range. For example to prevent pellagra one needs about 10 milligrams of nicotinic acid daily, but to prevent the symptoms of chronic pellagra from recurring one will need close to 1000 mg daily. There is no optimum doses for the whole population. It depends upon age, sex, type of illness, type of stress, i.e. upon the individual. We will have to determine the optimum levels for schizophrenics, for depressions, for the arthritides, for lupus, for cancer and so on. This is well described by Roger Williams[7] in his classic works on biochemical individuality.

) That vitamins may have activity which appears to be unrelated to their properties as vitamins. This was a very difficult concept to accept but the introduction of the word antioxidants struck a responsive chord and many physicians who were terribly fearful of using vitamins had no compunction against using the same vitamins as antioxidants. This fits in with the increasingly popular view that hyper oxidation, the formation of free radicals, is basic in the pathology of a large number of conditions including cancer, senility and so on.

The Assault on the Vitamin-as-Prevention Paradigm

This began about 55 years ago with the report by the American pellagrologists that chronic pellagra could not be treated except by very large doses of nicotinic acid; they used 600 mg daily. It was also shown that dogs kept on the pellagra- producing diet for a long time no longer responded to small doses of this vitamin. They had become dependent and needed much larger doses.

The next assault on this paradigm arose from the classic studies of William Kaufman[8] who reported in two books before 1950 the marked

therapeutic benefit to arthritics by giving them multigram doses of vitamin B-3 daily. But this important work was ignored and hardly any physicians are aware it was ever done.

The next attack came from a different direction, from the work of Drs. Wilfred and Evan Shute[9] of Ontario who showed that large doses of vitamin E given for adequate periods of time were very helpful in treating coronary disease, burns, and were useful in prevention. They were not ignored. They were almost destroyed by a medical profession which was completely unaware of the importance of their work, did not believe vitamin E was a vitamin and knew with absolute certainty that their work was useless. The Shute Clinic, still in existence, treated over 30,000 patients from all over North America. The agenda of the few attempts to repeat their work was to show how useless vitamin E was. Today the major studies[10] which have confirmed this early work still consistently refuse to acknowledge the prior work of these great pioneers, as if the idea had sprung freshly minted from their own foreheads when they launched the Harvard Vitamin E studies. Had the Shutes' findings been taken seriously in 1960, think of enormous saving of human health, the enormous decrease in human misery and the enormous financial saving over the past 35 years.

In the early Fifties, Dr. Fred Klenner began his work on megadoses of vitamin C. He used doses up to 100 grams per day orally or intravenously. In clinical reports he recorded the excellent response he saw when it was given in large doses. He reported, for example, that patients given vitamin C would suffer no residual defects from their polio. A controlled study in England on 70 children, half given vitamin C and half given placebo showed that none of the treated cases developed any paralysis while up to 20 percent of the untreated group did[11]. This study was not published because the Salk Vaccine had just been developed and no one was interested in vitamins. Dr. Klenner's work was ignored.

However, only after Linus Pauling entered the field with his classic report to Science in 1968 did the use of megadoses of vitamins receive major world attention. The public and a few scientists were immediately attracted to his conclusions world wide, while the medical profession as a block dumped all over him. Their main objection apparently was that he did not have an M.D. Dr. Pauling became interested in vitamins about the time he had decided to retire. He had won his second unshared Nobel Prize and was getting tired and frustrated by the opposition to his work for peace. He had made a few powerful enemies including Senator McCarthy of anti communist fame, and Joseph Stalin of communist fame who considered his views on the atom directly opposed to communist theory. At a meeting in New York in 1966, both Dr. Irwin Stone and I met Dr. Pauling for the first time. Dr. Stone had assembled a large collection of vitamin C papers (he hated the word vitamin C and preferred the more correct term ascorbic acid). Dr. Stone first used the word megavitamin and the word hypoascorbemia. He considered scurvy, not a deficiency disease, but a metabolic error. I urged him to publish his review of ascorbic acid which

he did several years later[12] . Irwin heard Dr. Pauling state that he wished he could live another 25 years because science was making so many interesting discoveries. Dr. Stone wrote to him and told him he could achieve his goal if he would take vitamin C in megadoses. Dr. Pauling tried it out, was convinced because he felt so much better, and lived another 30 years.

The major impetus given by Linus Pauling to the megadose concept of vitamin C stimulated by Irwin Stone has finally thrown this vitamin into public and medical acceptance. Many years ago Linus Pauling concluded that people taking ascorbic acid would live longer[13] . All the information we have about ascorbic acid lead to this conclusion. It is therefore very helpful to actually see what it can do in practice for the final test is the practical one - does it work? In fact, it does. Dr. James Enstrom[14] School of Public Health, University of California at Los Angeles analyzed a ten year study of 11,348 people, aged 25 to 74. Men who consumed at least 300 mg of ascorbic acid suffered 41 percent fewer deaths during that period compared with men who took only 50 mg, in their food. They lived on the average 6 years longer. For women the results were not as striking. This amount of ascorbic acid can not be obtained from the diet alone and shows that supplements are essential. Had they used gram doses daily, I think the results would have been more striking.

Dr. A.G. Brox[15] and colleagues at McGill University found that two grams of ascorbic acid daily, successfully treated 7 out of 11 patients with idiopathic thrombocytopenic purpura (ITP). They had all been sick more than two months and had not responded to adrenocorticosteroids. Three had had splenectomies. Four had failed additional treatment including the current usual treatments. Their report had been rejected by the New England Journal of Medicine, I think, because they were then involved in a dispute with Linus Pauling. They had refused to advise him whether a rebuttal letter answering the Mayo cancer and ascorbic acid studies he had submitted would be published until he threatened them with legal action. Then they rejected it. I have one patient now with ITP on ascorbic acid who has been well over five years, but only as long as she remains on her ascorbic acid. If she discontinues it, her platelet count begins to sink within a few weeks.

Linus Pauling[16] carried the orthomolecular concepts into the field of cancer and again stirred up a hornets nest of hostility. For a good discussion of his work see Hoffer[17] . But I am totally convinced he was correct. His many scientific reports were very impressive. My studies with Pauling[18] on 660 cancer patients beginning in 1978 are confirmatory.

The first major attention to megadoses of vitamins followed our report of the effect of nicotinic acid on cholesterol, not because we had reported it but because it was promptly confirmed by the Mayo Clinic. I had been invited by the Mayo Foundation to give them a series of lectures on schizophrenia. During a dinner I told their chief of psychiatry about the effect of nicotinic acid on cholesterol. He passed it on to the chief of

medicine in the presence of his senior resident Dr. W. B. Parsons Jr[19] . Dr Parsons is one of the preeminent experts in the use of megadoses of nicotinic acid. The work was then taken up by Dr. E. Boyle, then with the National Institute of Health, and later by the Coronary Drug Study which eventually established nicotinic acid as the treatment of choice for hypercholesterolemia. It is also by and large the cheapest and safest.

During that time Humphry Osmond and I published our second book, "How To Live With Schizophrenia"[20] . A California patient[21] had recovered on orthomolecular treatment having failed the best California could offer over four years. Her father was so grateful he decided to educate every physician in his community. He did so by handing out copies of our book. One of them came into the hands of a psychiatrist. Dr. Pauling and Ava visited her one afternoon, and Dr. Pauling saw the book on her coffee table. He began to read it, borrowed it, and finished it by morning. He went to bed still thinking of retiring and he arose the next day determined that he would not and would enter this new field of megavitamin therapy. He was intrigued by the large doses of vitamin B-3 we were using with safety. This led to his Science report[22] and to his amazing contribution to the theory of meganutrient therapy, in the use of vitamin C for viral and other infections, for his very recent contribution to the cholesterol problem and heart disease. Dr. Pauling made the greatest individual contribution toward the overthrow of the old paradigm and its replacement by the newer, more accurate, and useful one.

Megavitamin therapy was ignored by medicine at large and was vilified by psychiatry. Only after Dr. Pauling entered the fray did the major profession take notice, and then it too became very hostile and critical especially after Dr. Pauling's first book on the common cold appeared. The National Institute of Mental Health funded a study in New Jersey under the direction of Dr. Wittenborn, a research psychologist. They had first approached a psychiatrist in St. Louis, who agreed to do the study if I would be a consultant. So the NIMH turned to New Jersey. The Wittenborn study was double blind and was an attempt to repeat our original double blind controlled studies started a decade before. Dr. Wittenborn in his first report found that there was no difference between the placebo and the treated group. We had claimed that it worked best for early or acute patients and did not by itself help the very chronic ones. The Wittenborn[23] study was primarily on these chronic cases. Later Dr. Wittenborn re-analyzed his results by pulling out the early cases as we had done, and in his second report he showed that he got the same results that we had. His first report was greeted with shouts of enthusiasm from NIMH and later by the American Psychiatric Association when they did their task force report on Megavitamins and Orthomolecular Psychiatry. His second report was greeted by a cold silence and may have cost him any further support. His second paper was never referred to by the critics of megavitamin therapy.

The American Psychiatric Association called Humphry Osmond and me before their Committee on Ethics because I had published the California paper. After a vigorous half-day debate over 20 years ago in Washington they told us they would let us have their decision in a few weeks. We are still waiting. However, they effectively killed interest in the use of vitamins for treating schizophrenia when they issued their irresponsible and flawed report[24]. The APA bears major responsibility for preventing the introduction of a treatment which would have saved millions of patients from the ravages of chronic schizophrenia. Just as the APA was once captured by psychoanalysis, it is now captured by tranquilizers.

Folic acid is another safe water soluble vitamin. It has been used in doses up to 15 mg daily. There has been a report that this dose caused gastrointestinal disturbances but in another study with the same dose this was not seen. Most patients do not need more than 5 mg. Recently it has been proven that women will give birth to babies with spina bifida and similar neural tube defects (NTD) much less frequently if they take supplemental folic acid, 1 mg per day. I generally recommend 5 mg daily. Dr. Smithells[25] in 1982 showed that giving pregnant women extra folic acid decreased the incidence of NTD's. Before that he had measured the red cell folate and white cell vitamin C levels of mothers who had babies with NTD's and found they were lower in both. It was thus known since 1981 that a multivitamin preparation containing folic acid would decrease the birth of these damaged babies.

The immediate reaction to the original findings was one of strong disbelief and hostility, and the establishment refused to advise women to take folic acid until the requisite number of double blind experiments were done. At last they are satisfied 11 years later, culminating with a report in J. American Med Ass in 1989. Folic acid provided protection for most causes of the defect. Even in women with a family history, the frequency of babies with the defects was more than five times greater - 18 per 1000 against 3.5 per 1000, in women who did not take the vitamin in the first six weeks of pregnancy. How many babies could have been saved by such a simple solution? Even if the original findings had been wrong, what harm would it have done to have advised them immediately about this very important finding? I was astonished in 1981 at the vehemence of the reaction by physicians and nutritionists, and I am still astonished. The recent studies showed that folic acid decreased NTD's by 75 percent. If all the other vitamins were used as well I am certain that figure would be closer to 100 percent.

I can not recall in the past 40 years a single female patient of mine on vitamins giving birth to any child with a congenital defect. I have been able to advise them all that they not only would not harm their developing baby by taking vitamins, but that their chances of giving birth to a defective child would be greatly diminished. I was frequently asked this by my patients who had been told by their doctors that they must stop all their vitamins while pregnant. They looked upon vitamins as toxic drugs. I

am still asked the same question for the same reason today.

However, governments can learn and respond. It is now official that pregnant women should take extra folic acid in order to prevent spina bifida and other birth defects. The U.S. Public Health Service has issued the following advisory: "In order to reduce the frequency of NTD's (neural-tube defects) and their resulting disability, the United States Public Health Service recommends that: All women of childbearing age capable of becoming pregnant should consume 0.4 mg of folic acid per day for the purpose of reducing their risk of having a pregnancy affected with spina bifida or other NTD's". This amount will not be provided by most diets and requires supplementation. Apparently the US Public Health Service is considering fortifying bread with folic acid. Folic acid is destroyed by heat but some will survive.

In USA about 25,000 babies are born each year with spina bifida. In Canada it has been estimated that each of these children will have cost about \$40,000 by the time they are 14 years of age. Giving women folic acid early in their pregnancy would have avoided perhaps 3/4 of these births. Over ten years, while the cautious scientists were discussing whether folic acid was safe enough and was effective, 250,000 children were born at a total cost of 10 billion dollars (over ten years). Folic acid for pennies per day could have saved the United States public 7.5 billions dollars over this ten year period. The saving in public health dollars will be enormous. The waste in this long delay is inexcusable, since folic acid is totally safe and could have been given to all pregnant women over ten years ago. This is the costs of inactivity, of the conservative stance of the profession when it comes to the super safe vitamins.

Conclusion

The vitamins-as-treatment paradigm is developing very rapidly and will absorb the vitamin-as-prevention paradigm which is no longer needed. Vitamins are important nutrients which will be used in optimum doses, small or large, for conditions which are responsive whether or not they are considered to be vitamin deficiency diseases. Only the fossilized physicians who have been the most powerful antagonists of the newer medicine still adhere to the old, totally inadequate paradigm. But there are still physicians who question whether vitamin B-3 is the correct treatment for pellagra. They will still promote their old ideas and will bolster them by manufacturing toxicities. As a rule, when there are no toxicities, it is simple to invent them, such as vitamin C causes kidney stones, or damages the liver, or interferes with the treatment of diabetes and so on. Every month I hear about new toxicities which totally surprise and delight me because they indicate how imaginative my colleagues can be.

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