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VITAMIN C: WHO NEEDS IT? ANSWER: EVERYONE!

Millennia ago, when they were living amid wild plants that provided abundant sources of vitamin C, our ancestors lost the ability to convert glucose (a kind of sugar from our diet) into vitamin C. We all must ingest vitamin C, which is an essential dietary element. In fact if our diet provided no vitamin C we would all die of scurvy, as was the case with sailors on long voyages with no fresh food. Lack of oxygen can kill us in minutes. Lack of vitamin C can take several months during which time the symptoms include extreme weakness, spongy gums, bruising, and hemorrhages.

Almost all people can benefit from taking more supplementary vitamin C than the U.S. Recommended Dietary Allowance (RDA) of 60 milligrams. NOHA Honorary Member Emanuel Cheraskin, MD, DMD, has just published a book¹ describing a large number of careful studies using vitamin C supplementation for different diseases and adverse human conditions. We shall describe a few of the studies.

[A group of researchers] provided one gram of ascorbic acid per day (this is roughly 12 glasses of orange juice) for 60 days to 20 clearly-diagnosed infertile, but otherwise healthy, men. A separate control (placebo-supplemented) group consisted of 20 men. At the end of these two months, none of the control group's wives reported pregnancies. However, in all of the vitamin C supplemented group, there was conception!... We now know that ascorbate can increase sperm volume, count, and motility. It also reduces the number of abnormal sperm and their stickiness. Finally, improved sperm quality follows.

In a study of 44 school-age identical twins, one of each pair was given 250 milligrams of vitamin C twice a day for five months and the other received an indistinguishable placebo. "In the seven pairs of the youngest group (6 to 11 years of age), in all but one instance, the treated twin grew from 0.64 to 2.54 centimeters more than did the placebo-administered subject. Simply put, this means that in less than one-half year, one twin grew as much as one inch taller."

In the section entitled "Making Healthy Kids Healthier," Dr. Cheraskin describes a study in Zagreb, Yugoslavia where 70 milligrams of ascorbic acid was given daily to 49 adolescent boys for two months. Their blood levels of vitamin C increased and "there was a bonus of improved oxygen utilization." No such changes occurred in the 42 children receiving a placebo. Thus, the capacity for physical performance was enhanced in these already healthy adolescents.

During allergic reactions, histamine is released. Antihistamine drugs are prescribed to alleviate the symptoms. Vitamin C is an effective natural antihistamine.

Vitamin C helps us withstand both

extreme heat and extreme cold. Dr Cheraskin gives the following impressive example of heat adaptation. "Workers in America's southland may have it rough, but South African mines provide a far more dramatic working climate. Mine owners long ago learned to initiate all sorts of acclimatization procedures in step-by-step progression." A study was done dividing 60 new workers into three groups: the first received 250 milligrams of vitamin C per day; the second, 500 milligrams; and the third, a placebo. In terms of "heat adaptation (temperature, heart rate, perspiration) ... the ascobate groups 'won' by 24 hours on the average. And a startling 35 percent of those 'winners' adapted in only three or four days. Some (on the placebo) unhappily even failed the ten day test!" ...

"Early research on rats and guinea pigs showed that high levels of vitamin C can counteract cold temperature states. A group of monkeys given 325 milligrams of ascorbic acid before being exposed to subfreezing temperatures fared far better than the [other] animals administered only 25 milligrams daily. Thus, human beings bound for snow might want to think not only of warm pants but also of popping about 4000 milligrams of vitamin C per day. That's the human equivalent (given 150 pounds of weight) of the amount provided the monkeys."

In the form of a salve vitamin C also helps with skin problems from the intense itching of pruritus (prickly heat) to relief of sunburn.

Already we have mentioned diverse conditions that can be helped by vitamin

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C and we have not even come to its beneficial effects on the major diseases, namely, cancer, heart disease, and the infections, including "flu" and the common cold. These effects have been researched and publicized² by NOHA Honorary Member Linus Pauling, PhD. Why does vitamin C help us in so many ways? Two reasons are clearly explained by Doctors Pauling and Cheraskin. First, vitamin C is an antioxidant that quenches the free radicals that are formed during normal bodily energy production (oxidation) and that can injure our tissues if not quenched.

According to new laboratory research at the University of California, Berkeley, vitamin C (ascorbate) is the best agent for protecting us from free-radical damage to blood lipids (fats). "At levels typically found circulating in human blood plasma, the vitamin neutralized 100 percent of the free radicals produced in the study. No other plasma antioxidant, or free-radical 'quencher,' showed this capability."³

Second, vitamin C is essential for the formation of collagen, which is a "fibrous protein [that] strengthens the skin, blood vessels, bones, teeth, and the intercellular cement that holds the cells in various organs and tissues together."⁴ Collagen is "stronger than steel wire of the same weight... [It] constitutes the connective tissue that holds our bodies together."⁵ No wonder that low levels of vitamin C result in blood vessel collapse and a whole gamut of diseases.

How much vitamin C do we need? For a general answer Dr. Cheraskin uses two measures. First, he refers to research done by his group at the University Medical Center in Birmingham, Alabama. For over a thousand dentists and their wives Dr. Cheraskin and his associates recorded the average daily vitamin C intake from food and supplements and correlated this with the score on a standard symptom questionnaire, in which zero indicates "ideal" health. As symptoms decreased, vitamin C intake increased until at zero symptoms the average intake was 410 milligrams per day. He comments, "Under the conditions of this experiment, approximately 410 milligrams of vitamin C may be designated as the acceptable daily allowance for healthy people who wish to maintain health. This is page 2

about seven times the RDA!"

We recall that our ancient ancestors lost the bodily ability to make vitamin C and yet they survived-to put it mildly! Consequently, for his second estimate Dr. Cheraskin refers to research on paleolithic nutrition in which the scientists "estimate from the mean ascorbic acid content of 27 vegetables consumed by hunter-gatherers that the average vitamin C intake would have been 392.3 milligrams per day in paleolithic diets." Parenthetically, the scientists say, "This calculation excludes the Australian green plum, which has the highest known vitamin C content (3,150 milligrams per 100 grams) and would tend to inflate the estimate."⁵ Dr. Cheraskin points out the closeness of these two estimates. He also comments on a large longevity study in which

People with intakes of about 300 to 400 milligrams of vitamin C daily, roughly half from food, were compared with those who got less than 50 milligrams daily. The findings were adjusted for age, sex, race, smoking, disease history, and other differences.

Conclusions are clear. Men consuming 300 to 400 milligrams per day showed an overall mortality reduction of 42 percent. Translated into life expectancy, this suggests an added longevity of six years.!

Dr. Cheraskin emphasizes the many other essential nutrients besides vitamin C. He particularly mentions that in nature vitamin C occurs with the bioflavinoids and that the beneficial effects of the two together are greater than the sum of the effects from each nutrient alone. We want to emphasize fresh fruits and vegetables where these and other nutrients are naturally combined. Paleontologists point out that "populations that subsist by collecting food invariably have a greater variety of plant foods than is typical for agricultural populations."7 We need to feel venturesome - as long as we know what we are doing and realize that many plants contain toxins. One delightful, healthful plant is the violet. "Violet leaves will give you in half a cup the equivalent in vitamin C of four oranges." The young leaves and buds are delicious and "taste like a cross between spinach and asparagus."8

Dr. Cheraskin and his group at the

University of Alabama have studied and published on vitamin C for forty years. Many dentists are involved and they are acutely aware of the many deleterious effects of low vitamin C on gum and tooth health. They have developed quick tests for adequate levels.

Finally, appropriate levels of vitamin C intake vary tremendously depending on your state of health and environmental exposures. When ill you can take vitamin C up to "bowel tolerance," in other words, until you have diarrhea. Then, that is enough and you can take a little less. In treating AIDS patients Robert F. Cathcart, III, MD, has found that "50 to 200 grams per 24 hours can markedly reduce the tendency for secondary infections." Note that 60 grams is one thousand times the RDA.

¹Vitamin C : Who Needs It? Arlington Press & Company, Birmingham, Alabama, 1993.

²Three of his many books are: Linus Pauling, Vitamin C, the Common Cold, and the Flu, W.H. Freeman and Company, San Francisco, 1970, 1976; Ewan Cameron and Linus Pauling, Cancer and Vitamin C, W. W. Norton and Company, New York, 1979; and Linus Pauling, How to Live Longer and Feel Better, W.H. Freeman and Company, New York, 1986. ³NOHA NEWS, Vol. XIV, No. 4, Fall 1989, p. 6.

⁴Pauling, 1986, op. cit., p. 25.

⁵Ibid., pp. 67,69.

⁶Eaton, S. Boyd and Melvin Konner, "Paleolithic Nutrition: A Consideration of Its Nature and Current Implications," *The New England Journal of Medicine*, Vol. 312, No. 5, January 31, 1985, p. 287. [Editor's note: this work is referred to extensively in "The Fish and Game Diet," *NOHA NEWS*, Vol. XI, No. 4, Fall 1986.] ⁷Ibid.

⁸Foster, Catharine Osgood, *The Organic Gardener*, Vintage Books, New York, 1972, p. 209.



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The Doctor's Corner

BIOCHEMISTRY AND BEHAVIOR

by William J. Walsh, PhD in chemical engineering from Iowa State University; researcher, group leader, and section head at Argonne National Laboratory for over 20 years; holder of six patents and author of approximately 175 articles and technical reports; volunteer in Illinois prisons for almost 20 years; founder in 1974 of the Prisoner Assistance Project; president of the Health Research Institute; co-founder in1989 of the Carl Pfeiffer Treatment Center. In 1981, the United Way named him "Prison Volunteer of the Year" for metropolitan Chicago.



The societal problems of delinquency, crime, and violence have steadily worsened throughout our nation's history. Most of us carefully lock our doors at night for a very good reason: The United States of America leads the world in per capita rates of murder, assault, rape, and most other violent crimes.

We spend billions of dollars each year on law enforcement and the criminal justice system. We have tripled our prison population in the last 15 years, and more than one million Americans are now incarcerated. In most states, funds badly needed for education and health care are diverted to prison construction projects. Despite this great public sacrifice, progress seems to occur at glacial speed (inches per century). In fact, violent crime rates are higher today than 15 years ago. Our nation's report card for this subject should read "A for effort, F for accomplishment."

The basic problem is two-fold. First, we do not understand why some children become violent criminals and others do not. Second, we do not know how to reform or rehabilitate the former once they start breaking the law.

Sometimes the greatest barrier to scientific progress is not lack of knowledge, but prevailing beliefs that are not true. Astronomy was stalled for centuries by the conviction that the earth was the center of the universe. Galileo and Copernicus were ridiculed and persecuted for correcting this error. Geography and geology were delayed for centuries by the belief that the world was flat. Chemistry was hindered by the phlogiston theory, in which a nonexistent element was erroneously believed to enable burning. Physics was delayed for decades by the "plum pudding" theory of atomic structure. In each of these cases, progress virtually stopped because of a consensus belief in something that was not true.

We can now add criminology to the list of sciences stalled by a false belief. In this case, the error is a misguided conviction that violent criminals are created by flawed life circumstances such as poverty, child abuse, bad parenting, and broken homes. This is a nice theory, but time is proving it to be wrong. Unfortunately, most therapists and behavioral researchers devoutly believe in this concept and therefore provide the wrong treatments or follow fruitless lines of research. Until this error is corrected, behavior-disordered children will continue to grow up to be criminals and our nation's horrific rate of crime and violence will persist.

In nearly 20 years of volunteer work in prisons and ex-offender programs, I was closely associated with hundreds of persons who had committed violent crimes. Most of them had a history of assaultive behavior dating back to early childhood. There were many cases of violent criminals who had wonderful parents and siblings who were productive law-abiding citizens. (Richard Speck is a good example.) Their families told me that these future criminals seemed "different" from the day they were born and had resisted all attempts by the family to love and nurture them. The families spoke of children who started to lie as soon as they learned to talk, became assaultive by age 3, tortured family pets, and were completely oppositional and disobedient by age 4. Many of the criminals had had counseling and psychotherapy before kindergarten, drug medications by age 6, hospitalization by age 9, and incarceration by age 12. The families reported that physical punishment was completely ineffective, as was behavior modification. I met parents who believed that their children were possessed and had tried exorcism. I learned that the parent of a criminal is often a parent with a broken heart.

Many of my criminal associates were very intelligent and had searched for the reasons why their lives had turned out so badly. A habitual sociopath once told me over breakfast that he had absolutely no caring impulse or feeling for other human beings. He pointed to a little girl crossing a Chicago street and said that if she were hit by a bus and crushed, he would feel nothing and would just keep on eating his scrambled eggs. He expressed his desire

The reality is that most children with terrible behavior were born with chemical imbalances that predispose them to this conduct.

to love his parents and to fall in love with a woman, but said that was impossible – because he just "felt nothing." He had been like that his entire life. A close friend of mine (once a black gang leader) told me that he hoped that science would someday find out what had transformed him from a little baby into a monster. In some ways, the criminals appeared to have a better understanding of their problem than the criminologists who had spent a lifetime studying them. It seems highly significant to me that the most common tattoo I saw in Stateville prison was "born to raise hell."

The reality is that most children with terrible behavior were born with chemical imbalances that predispose them to this conduct. Flawed life circumstances can aggravate this condition, but with many the underlying cause is bad chemistry. If imbalances are mild, terrific

page 3

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parenting and counseling may save the day. However, if an imbalance is severe, behavior problems cannot be loved away

> Treatments consist of specific vitamins, minerals, and amino acids targeted at balancing body chemistry. This . . . requires a partnership of biochemists and medical doctors.

or overcome with competent parenting. The imbalance itself must be addressed.

The Carl Pfeiffer Treatment Center in Naperville, Illinois, is dedicated to helping families effectively cope with behavior disorders in their children. Our focus is on biochemical treatment aimed at the very chemical imbalances that are usually at the root of a behavior problem. The key lies in identification of the specific biochemical abnormality present.

Thousands of behavior-disordered children have been studied at the Center. The most common imbalances are metalmetabolism disorders, toxic overloads, a disorder of hemoglobin synthesis, nutrient malabsorption, and an overload or deficiency of histamine. Treatments consist of specific vitamins, minerals, and amino acids targeted at balancing body chemistry. This is a fairly complex medical procedure that requires a partnership of biochemists and medical doctors.

Recently at our clinic, I met a dedicated, competent, loving mother who had adopted an infant abandoned at birth. Her four-year-old son is completely oppositional and defiant, has tortured and killed two family pets, and is beginning to harm other children in the neighborhood. Recently she found him searching through the dishwasher. He said he was looking for a knife so he could kill his baby sister. The mother has three older adopted children, who are very well behaved and are good students. Two years of counseling, behavior modification, and drug medications have not helped. His present medication is thorazine and his psychiatrist now recommends longterm residential care. Our laboratory testing revealed this child to have severe imbalances and his new drug-free treatment will begin next week. We expect that his behavior will become quite normal within three months.

Children with mild temper tantrums often have the same chemical imbalances

as those with assaultive rages. However, chemical imbalances are usually much less intense for mild behavior disorders. Our success rates, based on longitudinal progress reports from thousands of parents, appear to be very high for both groups. We plan to conduct double-blind studies in the near future to better define treatment effectiveness rates. So far we have found that treatment success rates are highest for young children, with a sharp decline in efficacy during teenage years. We believe that drugs, alcohol, and a continually worsening self-image are responsible for this effect. Our clinic continues to grow rapidly and our waiting list exceeds two thousand applicants from throughout the USA.

If present crime rates persist, more than a million American children (ages 12 and younger) alive today will eventually wind up in prison. This problem will not be solved by getting tough with criminals or building more prisons. The only hope lies in early identification of severe behavior disorders, followed by effective treatment.

FOOD AND BIOTECHNOLOGY

"Biotechnology covers a vast array of techniques and processes that will have profound effects on crops, livestock, feed, and food. Manipulations include gene splicing, recombinant DNA technology, molecular biology, protein purification and sequencing, protein engineering, animal and plant cell culture, root culture, monoclonal antibody technology, and cell fusion techniques...

"Insertion of foreign genes into plants and animals intended for human food may create problems for humans.... For individuals with food intolerances, it will become difficult to know the components of basic foods. For example, a peanut gene might be inserted into a vegetable, flounder into a tomato, wax moth into potato, firefly into corn, or Brazil nut into soybean. For individuals on rotation diets, not knowing what genes have been inserted, it would be impossible to classify foods."¹

Recombinant DNA-derived proteins have been developed in attempts to increase the milk production of cows and reduce the fat in swine. The latter protein, the porcine growth hormone, "has resulted in test pigs suffering from gastric ulcers, arthritis, cardiomegaly [enlarged heart], dermatitis, degenerative bone disease, renal disease, and infertility. Similar effects have been noted in treated test sheep and mice."¹

On the subject of increasing milk production, the cow's own "Bovine Growth Hormone, n-BGH, is a natural protein hormone that controls bovine growth and lactation. Synthetic Bovine Growth Hormones, s-BGH, are manufactured by bacterial genetic engineering by the Agricultural Chemicals Division of Eli Lilly and Company (Elanco), in conjunction with the Dow Chemical Company, the Upjohn Company, American Cyanamid, and Monsanto.

"[In 1986], the Food and Drug Administration (FDA) approved the use of s-BGH in large scale productivity trials, and also the sale to the public of unlabelled milk and meat from these trials. ... The data on which the FDA review and approval process is based have been generated and interpreted exclusively by industry, and by its academic contractees

> "Insertion of foreign genes into plants and animals intended for human food may create problems for humans.... For individuals with food intolerances, it will become difficult to know the components of basic foods."

and consultants in some 22 United States university dairy science departments, to the exclusion of any input by independent scientists."² In the past for other products, "there is fully documented evidence that the data base [developed by] these industries and their indentured academics has been... highly unreliable, reflecting manipulation, suppression, distortion, and destruction of data with regard to a wide range of products including animal feed additives and drugs, pesticides, detergents, plastics, and other chemicals."²

In spite of claims of 10-25 percent increases in milk production from cows treated with s-BGH, actually the results have been exceedingly variable—sometimes higher, but sometimes even lower than before treatment.

Synthetic bovine growth hormone differs significantly from the natural hor-

page 4

mone. It contains more amino groups. Also, it "is synthesized on a bacterial rather than a mammalian ribosome and its bacterial links have not been clipped off."²

Although required by law, there is, at present, no test procedure that can detect this animal drug and distinguish it from the natural hormone in the blood or milk of cows.

"Test cows treated with s-BGH develop . . . immune suppression, reduced fertility, heat intolerance, and activation of latent viruses that increase susceptibility to other infectious agents. Levels of such viruses in hormonally-treated milk and their human infectivity need investigation."¹ "Biosynthetic milk hormones induce a prolonged negative energy balance, similar to that in the rising phase of lactation, for at least eight weeks, during which increased milk production is paralleled by reduced total body fat, excessive tissue loss, and overgrowth of foregut tissue. This sustained negative energy balance appears to be associated with increased stress, susceptibility to infectious disease, and measurable changes in the composition of milk."2

Hormonal milk has up to 27 percent higher fat levels and the proportion of long-chain saturated fatty acids is increased relative to medium- and shortchain saturated fatty acids. "The fat and milk of cattle are contaminated with a wide range of carcinogens, including pesticides such as heptachlor epoxide and dieldrin and xenobiotics such as polychlorinated biphenyls (PCBs) and tetrachlorodibenzodioxin.³ The lipolytic [fatdecomposing] effect of hormonal treatment is likely to mobilize carcinogens from body fat and increase their milk levels, a matter of particular concern to young infants. For these reasons, possible incremental levels of fat-soluble carcinogens in hormonal milk should be determined."

"The increased incidence of infectious diseases, which has been noted in efficacy trials and which is presumably stress induced, is likely to result in increased antibiotic treatment and antibiotic levels in milk."² As we know from the NOHA lecture, "Beyond Antibiotics," any further use of antibiotics results in further development of antibiotic resistance in the infectious agents so that the antibiotics become ineffective for us, not just for the animals. "One notable change [in milk from s-BGH treated cows] is the increase of a protein, an insulin-like growth factor, IGF-1, which is a mediator of growth hormone action. IGF-1 is not species specific. The structure of both human and bovine IGF-1 have identical amino acid sequences, and IGF-1 from either species is active in the other species.

"IGF-1 is found in somewhat higher concentrations in milk from [hormone]treated cows than from untreated ones. Because these hormones are digested in the normal gastrointestinal tract and do not go into the bloodstream when ingested, it is assumed that they do not have biological significance. However, this

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may not be true for those with impaired gastrointestinal tracts.

"Infants can absorb small amounts of protein into their bloodstreams. Infants, either breastfed or bottle fed, are exposed to trace amounts of IGF-1. Questions remain. Can levels, even at trace amounts, exert biological activity? Would the breastfed infant be at risk if the lactating mother consumes s-BGHtreated foods?

"Pasteurization inactivates most of the s-BGH in milk, but has little or no effect on IGF-1. The process used to manufacture infant feeding formulas is reported to inactivate approximately 90 percent of the IGF-1 so that only one tenth of the original amount remains in the formulas. Is this amount still sufficient to provoke a reaction in a sensitive infant? This question has not been answered. Other questions concern mature humans. Does the extra load of IGF-1 in milk from treated cows exert local effects on the upper gastrointestinal tract? What is its action on the gut wall for older persons? If IGF-1 in milk helps maturation in the young, will it hasten senescence at a later stage of life?"¹

"Elsewhere, Great Britain's Veterinary Products Committee in 1990 rejected Monsanto's application to sell bovine somatotropin [another name for s-BGH] in Great Britain. Bovine somatotropin was banned, too, in Norway, Sweden, Denmark, the Netherlands, and

> "No logical basis could be found at this time to allow marketing and use of bovine somatotropin"

parts of Canada, for various reasons, including economics, animal health, and safety. As recently as July 1993, the Commission of the European Community recommended to the European Parliament that the current moratorium on the marketing and use of bovine somatotropin be continued for another seven years. No logical basis could be found at this time to allow marketing and use of bovine somatotropin^{"1}.

On November 5, 1993, the U.S. Food and Drug Administration (FDA) approved the commercial sale and use of s-BGH. Milk and dairy products from treated cows will be in stores, restaurants, and school cafeterias starting February 3, 1994. The FDA will not require labels on milk, meat, or dairy products from treated cows.

The FDA approved of food irratiation without labeling. Public pressure caused them to reverse their position. In the case of s-BGH with so many public health questions unanswered, we can at least pressure the FDA to require labelling

¹From the presentation, "Biotechnology Applied to Foods: New Sources of Food Sensitivities?" by NOHA Honorary Member Beatrice Trum Hunter, October 11, 1993 at the Twenty-Eighth Annual Meeting of the American Academy of Environmental Medicine, "New Horizons in Chemical Sensitivities: State of the Art Diagnosis and Treatment."

²From Samuel S. Epstein, MD, Professor of Environmental and Occupational Medicine, School of Public Health, University of Illinois Medical Center, Chicago, "Questions and Answers on Synthetic Bovine Growth Hormones (s-BGH)", January 9, 1990 and his "Potential Public Health Hazards of Biosynthetic Milk Hormones," International Journal of Health Services, Vol. 20, No. 1, 1990, pp. 73-84.

³See "Chemically-Induced Alterations in Sexual and Functional Development: The Wildlife/Human Connection," *NOHA NEWS*, Vol. XVIII, No. 2, Spring 1993.

page 5

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LINUS PAULING ON DIETARY SUPPLEMENTS¹

As a scientist, chemist, physicist, crystallographer, molecular biologist, and medical researcher. I have spent a lifetime in pursuit of expert knowledge. This issue involving the definition, regulation, and censorship of dietary supplements and associated information goes far beyond this hearing. It touches upon the very fiber of our human and constitutional rights. It mandates monopolization of the healthcare industry by creating an economic premise that will eventually eliminate those unable to meet its unrealistic requirements. These demands would require millions of dollars in research and excessive time constraints to prove the safety of substances already historically and statistically within considerable safety margins.

In the scientific and medical communities, among those of reputable and significant knowledge, the votes have already been cast in favor of non-toxic therapies that are effective and affordable. This issue of agency determination of definitions and regulations overrides the individual's freedom of choice in healthcare, and inhibits free access to vitamin information that better enables a person to make an informed intelligent decision regarding services that could be of significant value in the prevention and treatment of disease, making it mandatory that they be made available only as "drugs," and under the jurisdiction therefore of the medical community. This ultimately enslaves a population to becoming chemically, psychologically, and economically dependent, rather than being actively responsible for its own well being. Billions of dollars and millions of lives are at risk of being jeopardized in this ruthless campaign to subjugate the health industry to being puppets of a leg-

> If there is to be a concerted effort to regulate and eliminate toxic substances, it would serve the issue far better to address the abuse of drugs and treatment procedures that are the cause of hundreds of thousands of medical catastrophes and deaths per year, which could possibly be avoided by improving medical education of the physicians and the public as to nutritional alternatives in healthcare maintenance.

islated system of lobbying efforts....

Over a quarter of a century ago, I became interested in nutrient compounds and their effects on human health. The old professors of nutrition who helped to develop the science of nutrition seemed complacent with their accomplishments and ignored the new discoveries that were being made in medicine, biochemistry, and molecular biology. They continued to teach their students the old ideas, many of them incomplete or incorrect, resulting in principles and practices that have denied the public proper access to new concepts and therapies.

Physicians themselves, though dedicated and intelligent, are virtually untrained in the area of nutritional science and metabolic therapy, other than conventional drug modalities and allopathic procedures. If there is to be a concerted effort to regulate and eliminate toxic substances, it would serve the issue far better to address the abuse of drugs and treatment procedures that are the cause of hundreds of thousands of medical catastrophes and deaths per year, which could possibly be avoided by improving medical education of the physicians and the public as to nutritional alternatives in healthcare maintenance....

This hearing is paramount to the determination of the Dietary Supplements Act, S-784. I submit to you the historymaking moment that we are facing. As representatives of the people, consider not only the medical and scientific implications, but the humanity of your decisions. We are on the threshold of a new paradigm. The future of our self-determination as humankind depends upon our right to life and to live in freedom. Herophiles in 300 B.C. stated: "When Health is absent, Wisdom cannot reveal itself, Art cannot become manifest, Strength cannot be exerted, Wealth is useless, and Reason is powerless."

¹From testimony submitted on October 20, 1993 at Senate Hearing on Dietary Supplements Act S-784, Washington, D.C.

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