HEALTH AND STRESS

The Newsletter of The American Institute of Stress

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ANTIOXIDANTS, NUTRICEUTICALS, AND SNAKE OIL

As an old adage notes, "Everyone wants to live long — but nobody wants to grow old." The search for some mysterious potion with magical rejuvenation properties has preoccupied man for millennia. In Greek mythology, the famous physician, Asclepius, allegedly became so skilled in the use of plants for this purpose, that he could even restore the dead to life. His staff of olive wood entwined by a serpent has long been a symbol for the medical profession. The fruit of the olive tree is still associated with longevity, and the snake was chosen because it grows a new skin every year, signifying rejuvenation and eternal life.

One of Asclepius' daughters was named *Panakeia*, or "all healing", from which panacea is derived. People have been searching for panaceas, or "cure alls", ever since. Early Egyptian alchemists believed they had found one in the form of a special "dried powder" or *aliksir*, which could even turn lead into gold. This became *elixir* in Medieval Latin, and generally referred to *elixir vitae*, or "elixir of life". In the early 1500's, the German physician/alchemist, Faust, allegedly sold his soul to the Devil in exchange for another charmed

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concoction that promised eternal youth. Around the same time, Ponce de Léon was searching for a rejuvenating spring with tonic waters that Caribbean natives called the "Fountain of Youth", but discovered Florida instead.

During the present century, the search for antiaging remedies has included transplanting monkey glands, and injections of these, fetal cells, placental extracts, and procaine derivatives. More recently, growth hormone, DHEA, melatonin, estrogen, and testosterone have all had their enthusiastic proponents, since their levels decline significantly as we grow older. It therefore seemed plausible that many manifestations of aging might be prevented or improved by appropriate supplementation that restored values to those seen in healthy young adults.

Numerous animal and clinical studies seem to support this contention. The anti-aging benefits of estrogen therapy in post menopausal females have been well established. Although testosterone levels do not decline as dramatically, more older men are now also receiving male hormone supplementation because of reported increased vitality, and a testosterone patch has recently been introduced to facilitate treatment. Although there have been relatively few studies in humans, the rush to obtain melatonin and DHEA has exhausted supplies in many health food stores. But how could so many different substances all produce the same anti-aging effects?

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HEALTH AND STRESS

The Newsletter of The American Institute of Stress

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Free Radicals And Aging

Most of the characteristics of old age, including cataracts, gray hair, wrinkled skin, memory loss, accelerated atherosclerosis and increased rates of certain cancers, are due to the cellular damage caused by free radicals. The destructive action of these unstable molecules is normally neutralized by natural substances made in the body, known as antioxidants. Unfortunately, our ability to manufacture antioxidants steadily declines as we grow older. The reason why all the different chemical compounds noted above may retard aging, is that they are all antioxidants. Administering them in amounts sufficient to restore levels to those seen around the age of 30, significantly blocks free radical damage.

However, various vitamins, minerals, herbal extracts, and combinations of these, often referred to as "nutriceuticals", are far more popular sources of antioxidants. The frenzy in this field has been fueled by the phenomenal potential commercial rewards. Some appreciation of this is afforded by the observation that one health food store chain has opened a new facility nearly every day for the last three years, and anticipates sales of 1 billion dollars in 1995! Nutritional supplements that were once obscure, can now be readily found on the shelves of every supermarket and pharmacy, and many convenience stores.

The public has been bombarded by extravagant and exaggerated promotional promises that are confusing and conflicting. Despite all the hoopla, most American adults know surprisingly little about antioxidants. According to a very recent poll, although more than half had heard about "antioxidant vitamins," fewer than 1 in 5 knew which ones they were. Even most of those familiar with the term, did not understand what the difference was between these and other vitamins. The majority were not aware that antioxidants might play a role in preventing cancer, heart disease, and stroke, and almost 40% mistakenly thought that they had something to do with aiding digestion. Of the 44% of American adults who currently take vitamins, more than 5 out of 6 do so daily. More than 4 out of 5 don't know what to believe about the anti-aging and immune system power claims for different products. As a consequence, the majority take multiple vitamins, as well as other nutritional supplements that advertise antioxidant properties. Many individuals take eight or more different pills and preparations in all sorts of combinations and dosages. Some consume up to several hundred times the recommended daily amounts of certain vitamins, in the belief that more must be better. In sharp contrast to this, almost half of adult Americans surveyed erroneously believed they could get all the vitamins they would ever need from their diet.

Antioxidant Vitamins

Vitamins have been traditionally viewed as substances required in minuscule amounts to prevent or treat specific diseases caused by their deficiency. Their minimal daily requirements (MDR), or recommended dietary allowances (RDA) are well known, and for years we were taught that taking any more than these minute amounts was worthless. However, in 1955, it was found that niacin (vitamin B₃), could also lower blood cholesterol levels, but the amounts needed were several times higher than recommended doses to prevent pellagra. Linus Pauling made vitamin C a household word in the late 70's, by suggesting that a markedly increased daily intake might prolong life by 12-18 years, and could also help prevent colds, cardiovascular disease, and cancer. Although the official RDA was 60 mg., he suggested taking amounts several hundred times higher than this, and personally averaged 18,000 mg. daily for over 20 years, I know

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from private conversations, that he often took much more than this during stressful periods.

Linus pursued his highly demanding intellectual interests well into his nineties, and attributed his vigor and well-being to his increased antioxidant intake. His interest in this stemmed from his earlier research as a physicist, demonstrating that free radicals were responsible for the damaging effects of atmospheric radiation, and that antioxidants could prevent this. Although he had been awarded an unprecedented two Nobel prizes, the medical community scoffed at him. He was not a physician, nor could they see any rationale for his recommendation of such large dosages. Pauling's prediction of the benefits of vitamin C megadoses have now been confirmed, and provide some insight into why their concentrations are 200 times higher in immune system cells. Similarly, although the recommended daily dietary allowance of vitamin E is 10 i.u., at least 10 to 40 times more is needed to improve immune system function, or protect against heart disease. A recent study suggests that 80 times the RDA is required to retard the oxidation of LDL that produces atherosclerosis.

What's The Best Dose?

Another good friend, Norman Cousins, who also played an important role in the founding of The American Institute of Stress, similarly discovered that his daily requirement of vitamin C varied significantly. He was suffering from ankylosing spondylitis, a severe and progressive form of rheumatoid arthritis. Impressed by Pauling's theories, he insisted on receiving large amounts of vitamin C, but neither he nor his doctors had any idea as to how much he should take. They decided to measure the amount of vitamin C in his urine, assuming that any excess that was not being utilized, would be excreted. On some days, he could take 8000 or 9000 mg. before any was detected. However, when he was under a great deal of stress, over twice as much was apparently required.

Many other factors may determine optimal dosages of specific antioxidants for different individuals. Increased exposure to cigarette smoke, air pollution, sunlight, radiation, pesticides, polyunsaturated fats, and even over exercising, all generate increased amounts of free radicals. If you live at a high altitude, or fly a lot, more free radicals are produced because of higher levels of exposure to atmospheric radiation,

and you will need more antioxidants to combat their damage. Impaired liver or kidney function, stress, infections, other diseases and the drugs or surgical procedures used to treat them, also affect antioxidant requirements.

Some people may require more vitamins because of genetic factors. Very small amounts of vitamin D, or even a few hours of sunlight will prevent rickets, but patients with "Vitamin D resistant rickets" require very large daily doses. Patients with "maple syrup urine disease" may require up to 20 times the RDA of vitamin B1 (thiamine) to obtain relief. While the specific hereditary biochemical impairments have been identified for these and other disorders, there are undoubtedly many others about which we know little. In some situations, the defect might not be sufficiently severe to cause any detectable clinical or laboratory abnormalities. Such individuals may complain of mental and physical fatigue, generalized aches, unusual sensitivity to environmental influences, and other vague symptoms. When all laboratory tests are normal, these apparently healthy individuals are usually dismissed as being hypochondriacal, or neurotic. Nevertheless, many report remarkable relief by taking megadoses of various vitamins, minerals, and other supplements, and claim that their symptoms consistently recur when these are discontinued.

More Is Not Always Better

Since we really don't know how much of each vitamin is best for each of us, why not just take large doses of anything that might promote health, provided it's not harmful? Increasing numbers of people are apparently doing just that. Vitamin C consumption rose 61% in 1994, sales of vitamin E and beta carotene doubled, and the public spent more than \$268 million for just these three supplements alone. However, it's not that simple. The body always tends to maintain its balance, or homeostasis, and taking too much of some antioxidants may depress the production of our own natural free radical fighters. Studies show that when experimental animals are loaded up with vitamin E, other antioxidant systems shut down. Much of the confusion comes from a lack of knowledge about what antioxidants do, and how they work. There are numerous forms of free radicals, and many different types of antioxidants. Some are effective in blocking certain free radicals, but not others. Taking too many

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antioxidants can backfire by interfering with energy production, causing weakness and fatigue, instead of preventing it.

Most individuals are unaware that free radicals are essential for many vital reactions in the body, including the immune system's ability to kill microbial invaders. Free radicals provide the fuel for cellular reactions, and under normal conditions, there are numerous mechanisms that carefully control and coordinate their activity. It is only when we get older, or are under conditions of increased stress, that they escape from this disciplined regulation, and wreak their havoc.

Some vitamins should more accurately be classified as redox agents, rather than antioxidants. In other words, they act as antioxidants in the concentrations present in foods, but, under certain conditions, have the opposite effect and promote oxidation, especially when taken in large doses. While vitamin C normally has antioxidant activities, when excess iron is present, it increases free radical oxidative destruction. Thus, taking vitamin C paradoxically causes cardiac damage in patients with high iron levels due to hemochromatosis or multiple transfusions. Many people take multivitamin pills containing iron, copper, or manganese, and large amounts of vitamin C also causes these to generate more free radicals.

The presumption that the more antioxidant vitamins you take, the healthier you will be, can be dangerous for other reasons. In one recent study, pregnant women whose vitamin A intake was higher than 10,000 i.u. a day, had a greater than 60% chance of having a baby with a cleft palate or cardiovascular birth defect, compared to the normal risk of 1 in 1,000. Some preparations of vitamin A available in health food stores have as much as 25,000 i.u. in a single capsule, almost 10 times the recommended daily dose. Numerous studies have shown that people with high levels of beta carotene in their diet or blood, have a lower risk for malignancy, particularly lung cancer. However, a trial to determine the beneficial effects of beta carotene and vitamin E in smokers, found that after seven years, those taking beta carotene had 18% more lung cancer, and an 8% increase in overall mortality rates. Those receiving vitamin E had a higher incidence of hemorrhagic stroke because of interference with blood clotting mechanisms. Concern has been expressed that beta carotene itself might actually cause cancer, and that it is other compounds in carotenoid rich foods that provide protection. Some studies also suggest that beta carotene supplements lower blood levels and body stores of vitamin E.

In addition to vitamins, trace elements like selenium, zinc, and chromium appear to have antioxidant effects, but taking too much zinc can decrease copper levels and depress the immune system. Chromium is involved in the metabolism of glucose and fat, but over 90 per cent of American adults may have deficiencies because it is very hard to absorb. A new, more readily assimilated preparation called chromium picolinate has recently become available. Chromium picolinate allegedly builds new muscle, burns fat, and reduces food cravings. In one study, it extended the life span of rats by more than one-third. However, concerns have recently been raised by a study showing that high doses produced cancer causing chromosomal damage in laboratory animals.

Fruits, Veggies, And The Hunt For Herbals

Researchers have also focused on the nutritional habits of small pockets of people around the world, who enjoy not only amazing longevity, but equally astonishing good health and vitality well beyond their eighth and ninth decades. Such primitive peoples have never heard of vitamin or mineral supplements, but do eat lots of fruits, vegetables, beans, and natural grains. These are all rich in numerous chemical compounds called "phytochemicals" ("phyto" is Greek for plant) that are powerful antioxidants. Phytochemicals most likely developed over millions of years of evolution to protect plants from oxidative damage due to sunlight and ultraviolet radiation. However, in animal studies, these antioxidants have also been shown to have anti-cancer and cholesterol lowering properties not related to vitamin effects. Similarly, green tea and red wine, which have few vitamins, also contain powerful antioxidants, like flavonoids, that have been shown to reduce risk for cancer and atherosclerosis, and promote longevity.

Some studies reveal that people who consume large amounts of citrus fruits have lower rates of cancer. While this is generally attributed to their high vitamin C content, the total daily dietary intake from these and other sources is much lower than the amounts

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believed to be required for protection against cardiovascular disease and cancer. Linus Pauling would have had to consume 255 oranges a day to obtain an equivalent dose of vitamin C. In addition to vitamin C, citrus fruits are loaded with potent anti-cancer chemicals known as terpenes, which also end up in the juice. One of these, limonene, has been shown to shrink breast tumors in experimental animals, and acts very much like another terpene, tamoxifen, the drug most widely used to treat breast cancer.

Some of the most potent plant antioxidants are the carotenoids. The one most studied is beta carotene, the natural pigment responsible for the color of carrots, sweet potatoes, apricots, cantaloupes and squash. However, other carotenoids like lutein and zeaxanthin, found more in dark leafy greens than orange vegetables, may be even more important. In one study, those who consumed the largest amount of these two carotenoids had 50% less macular degeneration, the leading cause of blindness in elderly people, compared to those with the least intake. In another report, individuals with the highest intake of antioxidant vitamins showed no reduced rates of cataract formation. However, a high fruit and vegetable diet did prevent cataracts, confirming that constituents other than these 3 vitamins may be much more important. Scientists are discovering that there are tens of thousands of these phytochemicals. The National Cancer Institute has begun a multimilliondollar project to find, isolate, and study the effects of these fascinating phytochemicals, and these and other advances will be reported on in future Newsletters.

Unfortunately, very few of us consume the recommended two servings of fruits and three servings of vegetables every day. Consequently, the public has been deluged with antioxidant and nutrient preparations derived from various plants. Herbals are the fastest growing of all nutritional products, including vitamins and minerals. Over 32 million Americans took one or more herbal supplements in 1994, sales rose 31 per cent between 1994 and 1995, and exceeded 2 billion dollars in 1995. The problem is that these products are not regulated. As long as manufacturers don't promise prevention or a cure, they are not required to prove anything, and the Food and Drug Administration's authority extends only to statements appearing on the label. The Federal Trade Commission is responsible for claims made in advertisements and promotional efforts, but that doesn't stop retailers from making extravagant promises. There is often no way to determine whether the potion you pay for is pure, or even genuine.

"Over 200 lbs. of vegetables in a bottle" claims an advertisement for one supplement. Although allegedly a blend of powerful, powdered vegetables, the manufacturer didn't know anything about its phytochemical content. Researchers who specialize in food processing and content analysis, indicate that it is currently impossible to condense large amounts of produce into any pill, without losing large amounts of important phytochemicals. One broccoli concentrate was found to contain only sulforaphane, a potential cancer fighting agent found in this and other dark green vegetables. However, you would have to swallow 100 pills at a cost of \$20 to get the amount found in a single serving of broccoli! In addition, you would also miss the dozens of other beneficial phytochemicals, vitamins, minerals, and fiber.

Some products are not only worthless, but dangerous. Some dried algae preparations, popular as weight reduction aids because they have few calories but are rich in vitamins and protein, are contaminated with dangerous chemicals from agricultural run-offs. Ma huang, another weight control product, which is prepared from the dried powdered leaves of a Chinese plant, contains ephedrine. This central nervous stimulant can cause hypertension, heart attack, or stroke, especially if taken in combination with caffeine, or in patients with heart, thyroid, or circulatory problems. The FDA has received reports of well over 300 adverse reactions, including a dozen deaths. In some states, it can only be sold by licensed pharmacists to people 18 years or older.

And Now The Good News

Some European countries have a much safer and more scientific approach, and plant medicines are regulated and dispensed as pharmaceuticals. Germany has its special Commission E, composed of medical experts, who evaluate safety and efficacy with the same rigorous standards applied to other prescription drugs. More than 80% of German physicians regularly prescribe plant medicines. Annual sales exceed 3 billion dollars, and in Germany and France, approximately 40% of herbal purchases are reimbursed by insurance companies. The leading

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prescribed herbal preparations in Germany in 1993 were ginkgo biloba, ginseng, garlic, evening primrose, and echinacea.

Ginkgo is an excellent example of why protecting plants from extinction can help create new medicines. Ginkgo is the oldest living tree on earth, having first appeared about 200 million years ago. Except for a small population in northern China, it was almost completely destroyed during the last Ice Age. It is sometimes called "the fossil tree", since it has no living relatives, and contains compounds not found anywhere else in nature. Ginkgo leaves have been used for over 2000 years in China, and were featured in a Ming dynasty herbal text. It has now been found to contain flavonoids and other compounds called ginkgolides. These have very unique chemical structures, with proven antioxidant and vasodilating properties. A standardized extract has been utilized for the past 20 years in Germany, where it is licensed to treat disorders associated with poor circulation, such as difficulty in memory and concentrating abilities, dizziness, and tinnitus. It is also used to treat impotency and peripheral vascular disease. Over 300 supportive scientific studies have confirmed the safety and efficacy of this standardized extract. A recent double blind study in 40 patients with Alzheimer's dementia showed excellent results. Steady improvement was noted in psychomotor performance and psychopathology over a three month period, with no side effects. Ginkgo was described as "one of our most useful tools for slowing cognitive decline in the elderly", and "one of the few 'smart drugs' that actually lives up to its billing". Unfortunately, numerous nonstandardized ginkgo preparations sold in the U.S. may be quite different, but still make similar claims.

Panax ginseng, or Chinese ginseng, also has an ancient history, and recent evidence suggests it was in use 3000 years ago. The genus name, panax, is derived from panacea, and ginseng is Chinese for "life of man". Ginseng root has been reputed for centuries to be a panacea for cancer, rheumatism, diabetes, sexual debility, and other age related problems. It has been used as a tonic, stimulant, and aphrodisiac, and has been shown to increase learning and memory function in both old and young rats. In certain doses, its stress reduction effects have been compared to valium, and some studies have shown a beneficial effect on adrenal function. When the European ex-

plorer Samedo returned from China in 1642, he reported that its restorative properties were so great, it was being sold for twice its weight in silver. Although ginseng is one of the most popular herbals, it can be one of the least reliable. It is often not possible to tell whether preparations are derived from the Chinese Panax ginseng, Panax pseudoginseng from Asia, Panax quinquefolius (Wild American ginseng), or Panax trifolus, a dwarf species also found in the U.S. Extracts made from the leaves are quite different than those from the root. Several years ago, one survey found that one out of four products tested contained no ginseng at all! When Consumer's Report recently sampled 10 products, there was a 10-fold variation in potency.

How can you tell which ginkgo or ginseng preparation to take? Read the label and promotional material very carefully. Most legitimate companies can support their claims with scientific studies, and many will even send you summaries of these on request. The old warning "caveat emptor" (let the buyer beware), is particularly applicable, since gullible enthusiasts may wind up with snake oil products similar to those sold from the backs of wagons by traveling medicine men years ago. After all, if you're going to take something for a long time, or possibly the rest of your life, you owe it to yourself to make certain you are getting the very best for your money.

Additional aids to help you navigate through this perplexing and puzzling maze of diet and supplements will be discussed in future Newsletters, with special emphasis on ginkgo, ginseng, and other herbals that appear to have proven stress reduction properties.

Paul J. Rosch, M.D., F.A.C.P. Editor



"...Man, the F.D.A. is really cracking down on food labeling!"

Sleep, Stress, And The Immune System

It's long been observed that people who don't get enough sleep are more susceptible to infections and other illnesses. Sleep appears to stimulate the production of essential immune system components that increase resistance to disease. When laboratory animals are deprived of sleep, immune system defenses become depressed. Conversely, patients who develop a fever, frequently feel unusually drowsy, or sleep for prolonged periods of time, possibly to stimulate immune mechanisms to combat microbial invaders more effectively. Some of the chemicals formed during these activities have been shown to induce sleep in experimental animals. A recent study, which examined the effect of limiting sleep to four hours in healthy men, confirmed that they had diminished ability to stimulate immune system function.

Stress is one of the major causes of insomnia, and also depresses immune system function, providing a double whammy to the body's protective mechanisms. Since lack of sleep itself is stressful, this often creates a vicious cycle that contributes to a variety of illnesses. These, in turn, cause additional stress, further perpetuating the problem. One of the most common consequences is impairment of memory and concentration. It is not surprising, therefore, that stress and lack of sleep are two of the major causes of such cognitive difficulties, especially in younger individuals. Reducing stress and developing consistent and adequate sleeping habits can correct this. In addition, some proven safe and effective natural products can help improve all of these problems.

Psychosomatic Medicine-March/April, 1995 Alternative Medicine-1993

Sleep is that golden chaine that ties health and our bodies together.

Thomas Dekker (1595)

More On Smoking And Sex

As noted in prior Newsletters, impotency rates appear to be higher in men who smoke. In one study, the incidence of impotency in male smokers being treated for heart disease was 56%, compared to only 21% of non-smokers, a 266% increase. The problem increases with age, and 70% of older men attending

impotence clinics are smokers. Further confirmation of this comes from a recent report that smoking increases impotency by at least 50% even in 31 to 49 year old healthy baby boomers. Nicotine constricts small blood vessels, resulting in diminished blood flow in the brain and other vital areas. In addition, smoking accelerates other manifestations of the aging process, including cataracts, wrinkled skin, and atherosclerosis, which clogs up vessels. This is due to an increased production of free radicals, and even the minimum daily recommended dosage for antioxidant vitamin C is double for smokers. Smoking also increases the incidence of other diseases like emphysema, which may impair the ability to enjoy sex.

More importantly, smoking inhibits the production of nitric oxide. The mechanism of penile erection has now been conclusively demonstrated to be due to the local release of this chemical messenger, which causes marked dilatation of blood vessels. Injections of drugs that increase nitric oxide production produce prompt and sustained erections in impotent males, and are being increasingly used for this purpose. Ginsenosides, the active antioxidant ingredients found in some ginseng products, also stimulate nitric oxide synthesis, and may explain its alleged aphrodisiac powers.

The fear of sexual failure may actually be a greater deterrent to smoking for men, than concerns about lung cancer and heart disease. An Israeli impotency and fertility clinic reported that 80% had quit smoking to improve sexual performance. For those who can't stop, increasing antioxidant vitamin intake and vasodilator drugs may help. As noted above, certain effective and safe herbal preparations, available in most supermarkets and drug stores, have also been reported to provide benefits. In addition to being potent antioxidants, they have been demonstrated to have both significant blood thinning, and vasodilating properties, and can increase nitric oxide production, providing a four-pronged approach to the problem.

Primary Care and Cancer-Nov./Dec. 1995

Robert Burton (1621)

[&]quot;Tobacco... but as it is commonly abused by most men, which take it as tinkers do ale, 'tis a plague, a mischief, a violent purger of goods, lands, health; hellish, devilish and damned tobacco, the ruin and overthrow of body and soul."

Book Reviews • Meetings and Items of Interest

Book Review

Comprehensive Health Care for Everyone: A Guide For Body, Mind, and Spirit, Collins, T.N., Blue Dolphin Publishing, Inc., Nevada City, 1995, 416 pgs., \$19.95

The purpose of this 8 1/2" x 11" paperback, is to encourage a more holistic approach to health enhancement. At its core, is the premise that good health is not merely the absence of illness, but a very robust state of wellness that mandates a sound mind and soul, in a sound body. It also emphasizes the inseparability of psyche, soma, and spirit, the need for a harmonious relationship between man and his universe, and the interconnectedness of everything in the cosmos. Thus, the chapter on environmental health promotes the Gaia principle, that our biosphere is a "complex intertwined network of living systems, matter and energy, pulsating with the energy of their unity". Both traditional and alternative medicine resources are utilized, and the need for an integrated multidisciplinary approach is explained. From the author's standpoint, "the body is just a rental unit wherein Life resides and the Universe expresses itself. From the moment we are given this body no one knows when the rental agreement expires". Thus, he argues, we should treat our bodies as a Temple or instrument of God, and not defile them. Over 350 quotations from philosophers, physicians, and others have been carefully selected to reinforce the author's views, starting with "Health is the proper relationship between the microcosm, which is man, and the macrocosm, which is the Universe. Disease is a disruption of this relationship" (Yeshe Donden, personal physician to the Dalai Lama).

This book deals more with generalities than specifics. Although the author is a chiropractor, his overview of this discipline is surprisingly balanced and restrained, rather than an enthusiastic endorsement. However, a variety of statements that reflect this background will likely be viewed with considerable skepticism by most physicians. For example, antioxidant is not listed in the

Index, and the only reference to this is in promoting Spectrox, a dubious "functional antioxidant blood test", that allegedly, "can evaluate the body's ability to handle free radicals". Abundant illustrations, graphs and tables provide detailed statistics and information on various aspects of personal, psychosocial, spiritual, and global health. The bibliography, suggestions for additional information, are extremely complete and up-to-date, and *The Newsletter of The American Institute of Stress is* cited several times as one of the best resources "for abstracts and up-to-date research and information about mind/body interconnectedness and health". A unique feature of this offering, is that it not only provides the reader with multiple options for dealing with an illness, but also the potential cost for each approach.

Meetings and Items of Interest

Mar. 13-16 The Fourth International Congress of Behavioral Medicine hosted by The Society of Behavioral Medicine and the Academy of Behavioral Medicine Research, Sheraton Washington Hotel, Washington, DC, call (301) 251-2790

Mar. 20-24 Association for Applied Psychophysiology and Biofeedback 27th Annual Meeting, Hyatt Regency Hotel, Albuquerque, NM, for info, write AAPB, 10200 W. 44th Ave., Suite #304, Wheat Ridge, CO 80033-2840 April 13-14 National Holistic Expo, sponsored by Times Union, Holistic Health Journal, New Visions, Capital District Spiritualist Ctr., Albany, NY, call (518) 374-7558 May 8-11 The American Holistic Medical Association presents the 1996 Annual Scientific Conference "Examining the Heart of Medicine Reclaiming the Joy of Practice", The Doubletree Hotel, Philadelphia, PA, call (919) 787-5181

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