

VITAMIN E & DAMAGE CONTROL

Controversy used to be vitamin E's middle name. Periodically, the air at scientific meetings would get thick with flying epithets, mostly euphemisms for 'quackery' aimed at the vitamin's champions. While the roll call of vitamin E's good deeds and supporters kept on growing, opposing forces slashed the recommended dietary allowances (RDA) for the vitamin from 30 International Units (IU) to 15, their rationale being the average 'balanced' diet in the United States provided persons with only 13 IU or less, hence 15 IU was more than generous for all purposes.

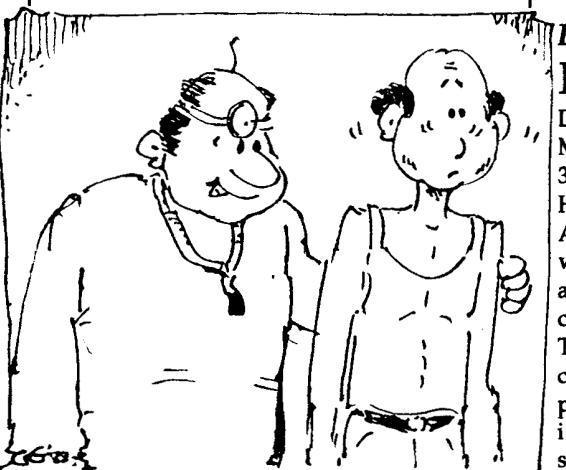
Meanwhile, in spite of clenching of jaws by the American Medical Association, people were buying supplements in droves, fueled by the writings of Adele Davis and other rebels against medical orthodoxy in the 1960's. By the mid-80's, vitamin E buyers had swelled from zero to 16 million. Medical journals seldom breathe a word about it, but the era when vitamin supplements gradually became staples in almost half the homes in the United States happens to 'coincide' with the start of the encouraging yearly downturn in heart attacks that continues to this day.

Along with booming consumption of vitamin E came burgeoning medical research on the vitamin, a lot of it confirming predictions of the early enthusiasts. I receive stacks of this literature routinely, including abstracts of over 300 studies on vitamin E each year conducted by scientists in the U.S., Canada, U.K., France, Italy, Poland, Germany, U.S.S.R., India, Israel, Japan, Malaysia, etc.

Russian, American, Canadian and Danish pediatricians report that routine administration of vitamin E helps to protect newborn premature infants from brain hemorrhages, lung injury, and eye damage. It also improves the effec-

tiveness of certain white blood cells of the baby's immune system in 'search and destroy' actions against viruses, bacteria or toxins.

Vitamin E helps to prevent inappropriate stickiness and subsequent aggregating of blood platelets, and in this way keeps harmful blood clots to a minimum, reducing the chances for strokes or heart attacks. (This is similar to the effects of the Omega-3 polyunsaturated fatty acids, which vitamin E protects and supports in cell membranes.) Normal subjects who were given daily supplements of 600 IU of d-alpha tocopherol (natural vitamin E) had higher levels of the vitamin in their blood and less clumping of platelets. Two Australian doctors who gave vitamin E to diabetic patients reported marked improvement in their patients' eyes, describing less platelet stickiness in the retina and far fewer tiny hemorrhages that are a known cause of loss of vision in diabetic individuals.



"ACTUALLY, HENLEY, I CAN'T FIND ANYTHING WRONG WITH YOU. BUT TAKE THE MEDICATION ANYWAY, I NEED THE MONEY."

The role of vitamin E as the body's major natural defense against oxidative assault on lipids by free radical oxygen species has been thoroughly corroborated. Polyunsaturated fatty acids in lipids that form the membranes of all the cells

in our body are especially vulnerable to this peroxidation. The brain, loaded with highly polyunsaturated lipids, is a special target. In circumstances where free radical output is stepped up, for example with cigarette smoking, heavy physical workouts, or exposure to smog and pollutants, all the cells require more protection which must come via the diet, i.e., foods and supplements rich in vitamin E and other antioxidants such as selenium, beta carotene and vitamin C.

Also, we need more protection if we're eating a lot of fatty fish, or taking fish oil supplements. As the valuable ultrapolyunsaturated Omega-3 fatty acids in these foods become incorporated into our own cell components, there's more potential for peroxidation. The answer is not to stop consuming Omega-3 foods, but to take in plenty of antioxidant nutrients from food, supplements, or both!

Does It Slow Down Aging?

In a brand new study conducted by U.S. Dept. of Agriculture nutritionist Simin Meydani, 34 healthy volunteers lived for 30 days in a dormitory at the USDA's Human Nutrition Research Center on Aging at Tufts University in Boston. All were older than sixty years. One half got a "normal" diet plus two capsules daily containing a total of 800 IU vitamin E. The other group got the same diet, which contained the RDA for vitamin E, 15 IU, plus two placebo capsules (no vitamin E in them). Neither subjects nor researchers knew who was getting vitamin

The volunteers who got the 800 IU were the ones with "a significant increase" in the responsiveness of their immune systems. While Dr. Meydani was not ready to make a blanket recommendation that all elderly people take daily doses of vitamin E, she said a growing body of epidemiological evidence in humans is pointing in that direction. Most diets, she believes, don't provide enough of it to fight off the damaging effects of cellular oxidation on the immune system.

When our immune system loses steam, the body's repair system falters and deterioration associated with aging picks up momentum. The implications of Meydani's study are that vitamin E, by empowering the immune defenses, may help slow down the aging process. How much vitamin E does it take to accomplish this? Conservative experts say 15 IU is more than enough for all needs in normal individuals. Others such as Meydani report benefits in subjects getting fifty times that amount. Max K. Horwitt, Ph.D., who has worked with the vitamin for more than 30 years, suggests we humans *commonly may be subject to undesirable chronic levels of lipid peroxidation*, which don't show up as clearcut vitamin deficiency symptoms, yet can hammer away at the body's defenses. D-alpha tocopherol (natural vitamin E), because it is a superb defuser of free radicals in our lipid membranes, may keep this peroxidation to a minimum, he suggests.

Dr. Horwitt refers to recent work of Canadian doctors who developed a non-invasive way to measure peroxidation in individuals, then measured vitamin E doses necessary to inhibit it (M. Lemoyne et al., *Am.J.Clin.Nutr.* 1987, 46:267-72). When destructive peroxidation of polyunsaturated lipids takes place in our cell membranes, *pentane gas* is produced. Eventually, the gas reaches the lungs and can be collected by a simple procedure from a person's exhaled breath. The researchers measured the pentane collected both before and after a period of vitamin E supplementation, finding that subjects whose blood levels of vitamin E were low put out a big volume of pentane. After supplementation, *their blood contained much more vitamin E, and their breath a lot less pentane!*

Protection From Hidden Damage

But even healthy subjects with so-called normal blood levels of the vitamin, when given 1000 IU of vitamin E for ten days, exhaled much less pentane than before they got the supplements. In addition, *their blood levels of the vitamin almost doubled*, leading Dr. Horwitt to speculate that the higher, twice 'normal' blood level actually might be a goal worth shooting for, since it represents a possible way of keeping free-radical breakdown of body tissues to a minimum. Even conservative scientists now are saying this insidious

process may be a major factor contributing to disease, including cancer and heart attacks.

Horwitt believes the 1000 IU consumed in the Canadian study is too much to recommend on a longterm basis. While he's not yet ready to make a specific recommendation, he says in order to build the desirable high blood levels of vitamin E, *it would seem necessary to ingest somewhat more than 150 IU per day of d-alpha tocopherol*. (That's a far cry from the RDA of 15!) The dean of vitamin E research asks whether the higher doses might achieve broader medical acceptance if the tocopherols were called *antioxidants*, rather than vitamins, adding, *"At this stage of our knowledge, it is not my purpose to tie higher levels of breath pentane to any pathology, but it does appear from animal studies that a minimum of lipid peroxidation in our cells is desirable. Let the debate begin!"* (*Am.J.Clin.Nutr.* 1988, 47:1088)

My Way

While the experts kick it around for another thirty years, I'll go on taking one or two 300 or 400 IU capsules, not every day but often, and eating good natural sources like seeds of sunflower, flax, and pumpkin; walnuts, almonds, hazelnuts, leafy greens, asparagus, green peas, sweet potatoes, whole grains, blackberries, raspberries, apricots, and black currants. **Felix Letter #10** tells how foods like these can supply a comfortable 100 IU of vitamin E from one day's menu--all side effects guaranteed beneficial! ■



BOOKS YOU'LL WANT TO SHARE

With the holidays in mind, I suggest the following as noteworthy additions to your reference shelves and those of family and friends.

BEYOND PRITIKIN (Bantam Hardcover, 1988, \$16.95) is the work of Ann Louise Gittleman, M.S., a clinical nutritionist who was director of nutrition for the Pritikin Longevity Center which pioneered the low fat, high carbohydrate diet program that changed everyone's thinking in the 1970's. But after working with Pritikin clients, Gittleman began to observe signs in them of nutritional deficiencies, centering around the "good" fats, almost absent in the Pritikin regime. After leaving the Center, she proved with hundreds of patients in her private practice that by restoring the essential fats, especially Omega-3 fats in linseed and fish oils, to a diet and exercise program, she could reduce cholesterol levels and the risk of heart disease and also speed up safe, natural weight loss in her obese clients. The book lays out her clear, easy to follow regimen for tackling our commonest health problems safely and successfully.

Surprisingly, she learned that a high carbohydrate diet *based on grains* does NOT work for every body; a substantial number of people cannot handle grains, not just refined flours but whole grains and cereals also. The book will help you to find out if you're one of them and how you can substitute compatible foods.

SOLVING THE PUZZLE OF YOUR HARD-TO-RAISE CHILD by William G. Crook, M.D. and Laura Stevens (Random House, 1987, \$17.95). This is a loving, ingenious, above all PRACTICAL approach to the trials of parents whose children are driving them to the loony bin. The book answers a million questions about why some kids are harder to raise than others and why they're compelled to act the way they do. Some are chronically tired, cranky, and moody. Others are so 'hyper' they bounce off the walls and can't stay with a learning task more than a minute. (Often, they're put on Ritalin medication at the school's request.) Others have runny noses, coughs, and earaches every other week. Some tyrannize the household with aggressive, obnoxious behavior and screaming tantrums. All of them make parents feel bad when they find themselves loving, but not *liking* their own child!

Dr. Crook is one of the pioneering clinicians who connected common emotional and health problems to *hidden sensitivities to food and environmental factors*. He and coauthor Laura Stevens lay out a crystal-clear program that any willing parent can use to track down and eliminate the foods, etc. that may be responsible for their youngster's up-setting behavior. The authors turn it into a detective game that even the child will find fun to play.

This is an absorbing book and important because it can turn a troubled child's and family's life around. ■



YOUR FAMILY TREE CONNECTION

by Chris M.

Reading, M.D. and Ross Meillon (Keats Publishing, 1988, \$9.95) is as provocative and exhilarating a book on health as I've ever read. It's written in easy language and reads like a mystery story. The Australian physician bases his theories on more than 2000 medical family trees of patients. He says they permitted him to discover *a common factor linking generations of illnesses in families*.

The ailments may be as diverse as leukemia, bowel cancer, Down's Syndrome, manic-depressive disorder, schizophrenia, Alzheimer's disease, pernicious anemia, and lupus erythematosus, yet all of them, and more, arise frequently in families laced through with a *severe form of grain allergy known as celiac disease* (or coeliac, the British spelling). Coeliac disease is an hereditary disorder caused by sensitivity to the gliadin fraction of gluten, the cereal protein found in wheat and rye and to a lesser degree in barley and oats. For such individuals, gluten acts as a powerful toxin that destroys the intestinal villi needed to absorb nutrients, and actually can cause

damage in the brain. Autoimmune antibodies appear in great numbers, attacking the person's own tissues. The underlying coeliac disease very often goes undiagnosed, but the *individual's poor absorption of nutrients creates a pathological climate whereby any of the seemingly unrelated ailments on the family tree can emerge*, according to Reading.

The implications for prevention are enormous. The book provides a simplified crash course in genetics and step-by-step instructions for putting together your family medical tree. If your close ancestors and relatives had, or have, any of the described ailments, you will be able to predict your and your offsprings' chances of developing them. According to Reading, you have a weapon to help you *avert them*. Testing for allergies, a gluten-free diet, and nutritional support via supplements may change the course of the family's history.

New Discoveries About Down's

About Down's Syndrome (mongolism), a disorder present at birth that causes abnormal physical development and mental retardation, Dr. Reading writes:

I decided to run pathology tests associated with coeliac disease on every Down's Syndrome child who came in my door. The outcome to say the least has been staggering. I have, to date, tested 18 Down's Syndrome children - and 17 of them have the pathology associated with coeliac disease. [The one exception was a young child who, with marked allergies to wheat, was well on his way to coeliac disease, according to Reading.]

By being placed on a gluten-free diet, with the right amounts of relevant vitamins and minerals, most of those 18 children have made rapid and measurable improvements in height, head circumference, weight, mental and motor development and general health.

Can It Be Prevented?

He even has a theory about how the chromosomal aberration responsible for Down's (47 chromosomes instead of 46) might be avoided! Poor nutrient absorption *in either parent* because of actual or latent coeliac disease might destroy the right balance of cyclic AMP and prostaglandins—natural cell metabolites that are needed for normal cell division [meiosis], he suggests.

The remedy? He writes:

Every mother-to-be with a family tree suggestive of coeliac disease, grain allergies, gluten sensitivity or autoimmune disease should have her allergies identified, avoid the offending foods and take vitamin-mineral supplements during pregnancy.

This especially applies to older mothers, whose egg cells are more likely to be below par anyway. It could well apply to men with that sort of family tree: if the imbalance does affect the meiosis of male reproductive cells, then avoiding the suspect foods and taking vitamin-mineral supplements for as long as possible before conception would obviously be valuable.

Here's another Reading blockbuster, this time about Alzheimer's. (These Aussies really know how to sock it to you!) He describes the well-known medical fact that an unusually high percentage of Down's children who reach the age of 35 (many die much earlier of leukemia and other diseases) will develop Alzheimer's Syndrome. Of course, Alzheimer's affects the normal population as well, causing devastating mental deterioration in the afflicted individuals, beginning between ages 40 and 60 and progressing in a few short years to complete loss of intellectual function. *Dr. Reading suggests that Alzheimer's, like Down's, may develop because of a hidden inherited grain allergy.* If so, he says the preventive measures he describes for Down's might keep Alzheimer's off the family tree!

I was alerted to the book some months ago by the PPNF JOURNAL, published quarterly by the Price-Pottenger Nutrition Foundation. Through the years, I've learned that editor Patricia Connolly has an unerring instinct for concepts that can jolt us out of any tendency towards stodgy thinking! She wrote: "Occasionally one finds a book that turns on lights, rings bells, makes sense, fits most of the jigsaw pieces of important information into a logical pattern and shows us how to take a giant step forward in the health care of ourselves and our families." I'll be writing a lot more about Dr. Reading's work in future issues.

The Foundation is a splendid nonprofit organization dedicated to education in health and nutrition. The book can be ordered from them. It costs \$9.95, plus \$3 postage, plus 65 cents sales tax if you live in California. Send check to PPNF, P.O. Box 2614, La Mesa, CA 92044-0702 (Tel: 619/582-4168). ■

MORE ON FLAX & FISH OIL

A subscriber asks if there's any danger from the "anti-B6 factor" in flaxseed (linseed) mentioned in the previous issue. FELIX LETTER 43 describes the benefits of consuming a tablespoon or two a day of ground flaxseed for its fiber and Omega-3 (alpha-linolenic acid) content, as well as for its reputed potential as an anti-cancer agent. Linatine, a compound present in flaxseed at a tiny concentration (about 100 parts per million), can inactivate a small amount of vitamin B6 by forming a compound with it. Problems with B6 deficiency arise when flaxmeal is given to animals in very large amounts without added B6 to compensate. The modest intakes suggested in FL 43 should present no problems.

Nevertheless, Paul Stitt who formulated "Fortified Flax," a flaxmeal product now available in many health stores and vitamin catalogs, adds 27.6 milligrams of pyridoxine (B6) per 100 grams of the flaxmeal as insurance, amounting to about 2 milligrams per tablespoon. As a matter of biological fact, many commonly eaten plants contain small amounts of natural toxins or vitamin antagonists. For instance, scientists found anti-thiamin (vitamin B-1) activity in 31 popular vegetables and 18 fruits, yet we eat them and thrive on them. I'm enjoying my "fiber cocktail" of one tablespoon flaxmeal and a rounded teaspoon psyllium powder in juice or water. It turns out to be an easy way for me to take flaxmeal regularly. If you are worried about getting enough B6, supplements are inexpensive, and good food sources include bananas, avocados, walnuts, peanuts, fish, chicken, liver, sweet potatoes, and brown rice.



A Winter Memory

On the same subject, I received this letter from a California subscriber:

Dear Clara: When I read your report on "Flax" in your recent Felix Letter, it rang a bell. My mind flashed back to my childhood days. I remembered my mother keeping a pan of flaxseed concoction on the back burner of our combination coal, wood and gas stove in our kitchen. She would cook the flaxseed until it became a syrupy substance, to which she added honey to make it more palatable. I called my sister in St. Paul and she verified this. She tells me mother even added some onion to it.

This concoction was given to us by the spoonful for coughs and colds. It was even given to us when we had whooping cough. This took place in Minnesota, that frigid state which is sometimes referred to as the "ice-box" of the nation.

When you are No. 9 and No. 10 of a clan of ten children, you are not marched off to the doctor at the slightest sign of a cold or illness. Old fashioned household remedies are used, and this was one of them. My sister and I are 78 and 79 years of age respectively.

Fish Oils & Scare Tactics

Speaking of home remedies, I can't help guffawing when I read yet another "warning" in medical or popular literature about the dangers of fish oil supplements. Is there anyone over fifty who doesn't remember as a child having to swallow codliver oil (yecchh) by the tablespoon? Oftentimes, it was the doctors themselves who insisted on mothers giving it to their kids, regardless of the ensuing fuss. The fish oil in capsules today is not very different from the fish oil used in the canning of sardines in many countries, including Norway. These oils have been a part of human existence for centuries. The Omega-3 fatty acids (EPA & DHA) in a typical daily supplement intake of 5 MaxEPA capsules amounts to 3 grams,

which is the amount of these important fatty acids in one and a half ounces of salmon or mackerel---no megadose by any stretch of the imagination.

In scientific studies, as many as 40 of these capsules have been given daily to patients who have heart or cholesterol problems, with no side effects. (An important point: vitamin E is always given simultaneously with fish oils in the medical experiments, to prevent undue free-radical attack on these ultra-polyunsaturates as they become incorporated into the patient's tissues.) No one should take huge doses of *any* supplement without medical guidance, but five 1-gram MaxEPA capsules contain a scant ONE TEASPOON of oil---hardly enough reason to call out the medical Marines!

FELIX LETTER 45 will present some interesting points of view by researchers on the pros and cons of fish oil supplements. Meanwhile, let's use our own instincts and good common sense in the matter. I've had to do so for 30 years with regard to dosages of vitamins E and C, since I'm now convinced that hell may freeze over before the experts will ever agree!



Illustrations are by Clay Geerdes and other artists as noted.

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