

The FELIX Letter

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A COMMENTARY ON NUTRITION

1995

STILL MORE ON HORMONES

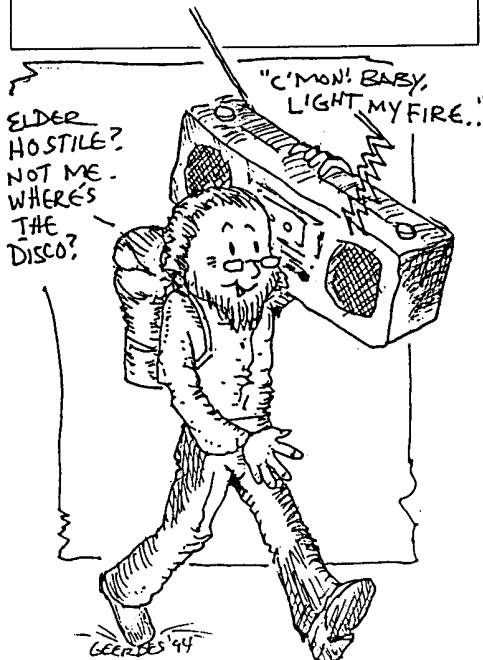
When I read medical textbooks and journals I'm struck by the narrowness of their handle on menopause. Your lady patients having hot flushes? Mood 'n sleep jinxed? Bones crumbling? Here's the scoop, doc: give 'em estrogens from mare's urine, plus synthetic progesterone, for the rest of their lives. Oh, and take it easy if they have a history of breast or uterine cancer, gall bladder or liver disease, hormone-induced headaches, or a tendency for blood to clot when it's not supposed to, 'cause the pills make all of these worse.

I know I'm not going to shake up my readers too badly when I suggest much of U.S. medicine, the only kind I know firsthand, is guided by money motives. It's a kind of moral failure in a sickness-for-profit system that we accept with a shrug. Doctors are good people but the game is bigger than they are; it's easier to go along with the current orthodoxy than to make waves. They freely dispense Premarin and Provera or their analogues because medical education on safe alternatives, like natural progesterone, is missing. The big money, of course, is behind patentable synthetic hormones.

Also conspicuously missing in the U.S. medical approach to menopause are *classic herbal and plant remedies*. (They're widely used by European and Asian MDs.) I'm exposed to a lot of literature and seminars in which 'alternative' health workers, MDs included, offer a richness of options for the 'condition.' Many of their formulas on how to breeze through it may be unique to menopause, but are intertwined with ways to build health in general. Menopause is *not* a medical disease, they tell us, it's a natural phase of a woman's life and the means have always been there to ease the passage. Unlike the 30 or so years of experimentation with hormone replacement therapy (HRT), plants and herbs have worked for thousands of years.

Progesterone and estrogens are small molecules. In our bodies, we make them from cholesterol, itself a simple molecule. Apparently, many plants produce *phytoestrogens* and *phytoprogestones* that our bodies can accept as weak hormones. A great thing about a plant hormone like genistein (plentiful in soybeans and soy products) is that it slows down abnormal growth in breast or prostate tissue, stimulated by too-high an output of our own hormones. But, thankfully, genistein works also as a modest *addition* to natural estrogen during menopause, when a woman's output drops to perhaps half of what she made when she needed to be fertile. (Menopausal ladies utilize adipose tissue to make quite a bit of estrogen. If she's *really* chubby, she makes more than a skinny premenopausal gal!)

In Asian countries where tofu and other soy products are daily staples, people maintain very high levels of genistein. Prostate cancer rates are low in men of Japan, *and there's almost five times less breast cancer in its women than in our ladies*. Older women in Japan also have fewer osteoporotic hip fractures than we do. Menopausal symptoms there appear to be far less bothersome as well.



Among scores of classically known herbs, used with safety for centuries to ease menopausal discomfort, are ginseng, dong quai, licorice root, black cohosh, extract of wild yam, and ho shou wu (*Polygonum multiflorum*). Herbal shops and health food stores carry a wide variety. Many are known to have estrogenic effects. See *Without Estrogen. Natural Remedies for Menopause and Beyond* by Dee Ito, 1994, Carol Southern Books, 201 E. 50th St., NY, NY 10022. Also, *Menopausal Years* by Susun S. Weed, 1992, Ash Tree Publishing, PO Box 64, Woodstock NY 12498.

Also, plant foods and herbs that have *progesterone-like* effects exist, for instance, tropical yams. I expect we'll see a lot more research on this as interest mounts in the U.S.

Don't hold your breath, dear people, waiting for the medical/drug industry here to push nutrient and herbal therapies for easing menopause! HRT is backed by inconceivably influential conglomerates. I got a nasty shock seeing the July *Prevention* cover story, "Estrogen You Can Live With." Not too many years ago, the magazine was a mainstay of natural health concepts, and here they were, going into rapturous details on "fine-tuning" one's HRT to make it work for all women! HRT's many known dangers were not touched upon, only a few unpleasant 'side effects' that could be sidestepped by fiddling with dosages, etc. (accomplished, of course, by repeated visits to the doctor.) 'Natural' approaches to menopause were limited to three sidebars in the 9-page article.

To cap it all, they carried a full 2-page color ad for the prescription drug of choice, Premarin!

Almost simultaneously, *Time's* June 26th cover story, "The Estrogen Dilemma," appeared. Although extolling estrogen's virtues, it was by no means all hearts 'n flowers. For example, "...like every other magic potion, this one has a dark side. To gain the full benefits of estrogen, a woman must take it not only at menopause but also for decades afterward. It means a lifetime of drug taking and possible side effects that include an increased risk of several forms of cancer.

That danger was underscored last week by a report in the *New England J. of Medicine* reaffirming the long-suspected link between estrogen-replacement therapy and breast cancer..."

Here's my scenario for what happens inside HRT boardrooms when bad news like the above manages to leak out: "Oh-oh, just what we need--another cancer scare, on top of the fact that 20% of the dames never even fill their HRT prescription, and half of the ones that do, quit within a year. Just because of a few lousy side effects! [This is true. CF] Quick, get out releases to all the news services and TV networks about how heart disease is the *real* killer if the gals don't stay on HRT. Get that cute gynecologist from L.A. again on public TV! Make it sound like what's a little cancer, compared to dropping dead of a heart attack!"

Folks, the Japanese have the longest life-span in the world; and both men and women have *exceedingly* low rates of coronary heart disease (our killer). Moreover, while Japan has a sophisticated medical system, doctors rarely prescribe HRT; there isn't even a term for "hot flushes" in Japanese. It's not a matter of women suffering in silence, either. Traditional herbal remedies are part of most households, and the high soy diet also probably minimizes menopausal discomforts.

Then there are my beloved Omega 3s! The Japanese diet is *loaded* with them: fish, shellfish, sea vegetables, many beans and soy products. They don't just protect the cardiovascular system, they also contribute elasticity and strength to all tissues, including vaginal ones.

All the above effects don't seem to be genetic because men of Japanese descent who live here and eat the U.S. diet have a much higher rate of heart disease. (I haven't seen any studies on Japanese-American women as yet.)



Prevention's article had one redeeming feature: a sidebar on oral micronized progesterone, the nonpatentable natural form "widely used in Europe" --a subject overlooked by the *Time* writers. Word about it, though, is spreading here. Informed patients are informing their doctors! ¹



A Low-Progesterone Epidemic

I had the pleasure again of hearing John R. Lee, M.D. speak July 24 to an overflow crowd at Gaia Bookstore in Berkeley. His book, *Natural Progesterone*, has sold over 40,000 copies (a third to doctors), and now sports a smaller format, an index, and an Afterword to sum up what's been cooking in the 18 months since the first edition.

Women in industrially developed countries, he said, *are running out of progesterone at earlier and earlier ages*. It's not happening to them in rural, agrarian societies. "We thought it might be modern-day stress, affecting the ovaries via the hypothalamus, etc." Then came reports of sexual anomalies in birds and other wild creatures. Female alligators in a Florida swamp were found to have huge ovaries churning out lots of estrogen, but their follicles were 'burnt out' and not making eggs. The same study showed male alligators with small penises, not much sperm, unable to mate successfully.

¹ Betty Franklin is a respected researcher and writer for *Let's Live*, a health magazine that's managed to thrive without taking ads for Premarin! Its integrity is fortified by columnists like Ms. Franklin, Jeffrey S. Bland, Ph.D., and Jonathan V. Wright, M.D. (who switched to *Let's Live* soon after *Prevention* did its turnaround). Her January column discusses "a variety of natural, non-animal, botanically derived sources of estrogen replacement" provided by Women's International Pharmacy in Wisconsin by prescription to health professionals. The pharmacy is licensed to compound and dispense "a patented, oral form of natural progesterone in a specific oil base." They provide nonprescription items including progesterone cream. (800) 279-5708.

"We've had 50 years of exposure, beginning with DDT, to petrochemicals found in herbicides, pesticides, common lubricants, etc.," he said. "We've learned they produce *xenobiotics* that act as powerful estrogenic hormones. Fetal tissues are especially vulnerable. During the human embryo phase, the same presexual tissues become ovaries in females, testes in males." Abnormal surges of xenoestrogens on these tiny embryonic organs can apparently create all sorts of anomalies that may not show up until adulthood. For instance, sperm count in U.S. and European men has dropped over 40% in the last 50 years! [*The Lancet*, April 15, said pollutants presumed responsible for this and for reproductive changes in animals include organochlorine pesticides (DDT, aldrin, dieldrin), polychlorinated biphenyls (PCBs), dioxins, etc.]

"For women, whose ovarian follicles were developing while they still were in their mother's womb," Lee said, "the problem may show up as early as age 35. We suspect that xenobiotics are a big factor in the new epidemic of early follicle depletion in all industrialized countries. Without viable follicles, young women don't ovulate and ovaries can't make progesterone. Women become estrogen-dominant--an abnormal state."

Plant hormones, on the other hand, have helped since the dawn of time to keep males and females of all species ready, able, and willing!

Neither *Prevention* nor *Time* had a clue to progesterone's role in reversing osteoporosis--but most medical texts and doctors don't, either--not yet.² Estrogen clearly slows down bone resorption, Lee explained, *but has never been shown in a single study to build new bone*. Bone-building cells have receptors for progesterone and testosterone. *Either of these hormones can prompt the laying down of new bone*. Dr. Lee says studies prove young women can lose bone density when their progesterone is way down because they're not ovulating, even if their estrogen is normal.



² *Preventing and Reversing Osteoporosis* by Alan R. Gaby, M.D., (1994, Prima Publishing, PO Box 1260BK, Rocklin CA 95677) is a wonderful exception, a goldmine of practical alternative approaches, written in comfortable scientific language.

Landmark Study, No Placebos!

In 1982, while still in active practice (he retired about 6 years ago), he had 100 menopausal women patients rub natural progesterone cream on their skin. [Nonprescription, containing about 900 mg natural progesterone. Similar creams sold in healthfood stores and by Professional & Technical Services, Portland OR, (800) 888-6814]. He also recommended a program of diet, mineral and vitamin supplements, and modest exercise. Over the years only a minority remained on a low-dose estrogen. Here's what happened to bone density in 63 of the women who elected to take regular dual photon absorptiometry tests at a nearby lab:

- Women with strong bones maintained them.
- Those with bone loss gained 5, 10, 15% density.
- Those with poorest bones had 30 - 40% increase.
- The average increase was 15%.
- Results were the same whether women took estrogen or not.
- All 100 women, some of whom are now in their 80s, continue to enjoy strong bones, and have not gotten any osteoporotic fractures, even though before the progesterone many had become shorter because of spontaneous vertebral fractures.

Dr. Lee wrote the book after U.S. medical journals wouldn't publish his study "because I didn't have a 'control group.' You don't need a control group if you show that you've done something that's never been done before!" (Eventually it was published in an Australian journal, *Internation Clinical Nutrition Review*, 1990;10:384-391.)

He recommends a newer way to keep track of what's happening to ourselves, hormonewise. The *saliva* hormone test, besides using spit, not blood, is less expensive than blood tests and provides more accurate measurements of *active* hormones (estrogens, progesterone, progestins, DHEA, testosterone, cortisol, etc.). Two labs are Aeron LifeCycles, San Leandro CA, (800-631-7900) and Diagnos-Techs, Inc., Kent WA (800-878-3787).

Sometimes doctors prescribe testosterone for women who have crumbling skeletons, but it does have masculinizing effects such as facial hair. With natural progesterone, a woman can build bones and maintain her femininity. Ladies, talk about this to your MDs and give them Dr. Lee's book. □



ANOTHER LOOK AT CHOLESTEROL

The cholesterol-as-cause theory of heart disease has suffered a bunch of setbacks. Long awaited results of very large-scale studies were, to say the least, discomfiting. For people with initially high blood cholesterol levels whose levels became the lowest (160 mg/dL), death from heart disease was rare, but *overall mortality did not improve at all*. Instead, they died at unexpectedly high rates of stroke, liver cancer, lung disease, accidents, and suicide.

The drugs of choice for lowering cholesterol in such patients--lovastatin and its analogues--inhibit the body's synthesis (in the liver) of cholesterol. Have you seen the giant ads in newspapers and magazines extolling the marvels of Mevacor® (lovastatin)? Ads like these had always been confined to medical journals until the drug honchos discovered this nifty way to get people to pester their doctors for prescriptions.

It so happens that blocking the liver's cholesterol-making enzyme also stops us from making a protective vitaminlike substance, coenzyme Q10 (CoQ10). Joseph G. Hattersley, Ph.D., describes CoQ10's heart-saving, antioxidant, anti-cancer, anti-gum disease qualities (*J. Orthomolecular Medicine*, Vol. 9, No. 1, 1994). Nature makes our body produce it for good reason. The same is true of cholesterol; without it, vitamin D wouldn't work, we couldn't make the adrenal hormones (cortisone, aldosterone, etc.), nor would we have any DHEA or male and female sex hormones!

When cholesterol is reduced excessively through chemical manipulation, one result, Dr. Hattersley says, is a decrease in "the brain neurotransmitter *serotonin*, increasing hostility and agitated mental states." Victims become more prone to accidents, depression, and suicide, which he believes explains the higher deaths from these causes in the big study.

No, the only valid part of the cholesterol theory is the discovery that *oxidized cholesterol* (but not normal cholesterol) in the blood can damage the lining of blood vessels, starting an ominous chain reaction, fomenting plaque-filled arteries that lead to coronary heart disease. True protection lies in antioxidant nutrients, richly found in fruits, vegetables, seeds, and whole grains. (Plus ample supplements of vitamins E and C if, like me, you like to be on the extra-safe side.) I have a slew of medical studies on my desk that show how these nutrients keep cholesterol from 'going rancid' as it's transported through the blood via lipoprotein carriers such as LDL and HDL.

Now the cholesterol theory bites the dust in another landmark study. Edward Blonz, Ph.D., in his astute syndicated column "Focus on Nutrition," July 12, describes the mortality statistics sequel to the Seven Countries Study that began in 1958. It followed "12,773 men, 49 to 59 years of age, in the U.S., Finland, the Netherlands, Italy, Greece, Yugoslavia (now Serbia and Croatia), and Japan." As reported in *JAMA* that week, *mortality from coronary heart disease (CHD) depended more on geographical area than on cholesterol levels*.

Japan had the lowest CHD mortality (3%), Northern Europe the highest (20%). But the same cholesterol level, Blonz writes, "represented a different CHD risk according to where you lived. With a cholesterol level of 210 mg/dL, for example, mortality varied from 4 to 5% in Japan and the Southern Mediterranean, up to 12% in the U.S., and 15% in Northern Europe."

Imagine, even with a "safe" cholesterol of 190 mg/dL, twice as many men in Northern Europe died than did men with that level in Southern Europe!

The lower CHD mortality in Mediterranean men occurred even though they consumed a lot more fat than the Japanese. Much of it, though, unlike the Northern European diet, was olive oil, and their diets (again, unlike those of Northern Europeans) *were very high in fruit and vegetable antioxidants, such as beta carotene, Vitamin E, and the flavonoids*.

The Japanese, of course, are big on 'hunter-gathering' from the sea, so that their marine-based diet is very high in heart-protecting omega-3s, as well as in antioxidant-rich fruits and vegetables.

Dr. Blonz writes: "The *JAMA* article points out that bringing down one's elevated blood cholesterol, as an end in itself, is not likely to bring about a significant reduction in the risk of CHD mortality."

Great new backup comes from a slew of studies, including one by Dr. Jacob Selhub in the February *New Eng J of Medicine*, showing that *folic acid* (found in brewer's yeast, liver, leafy greens, sweet potatoes, squash, seeds, nuts, beans, and fruit) will prove to be a far better tool for fighting CHD. Apparently, if we build up too-high levels of *homocysteine*--a normal product of metabolism--risk of heart attack and stroke really soars. Folic acid keeps homocysteine down to manageable levels, cutting the risk as much as 40 percent!

My own protocol: Easy on fats--nothing hydrogenated--w3 and w6 from seafood, flax oil, flaxmeal, walnuts, chestnuts, beans, soy products, pumpkin and other seeds, whole grains. Tons of green, orange, yellow fruits and veggies. At least a multi-vitamin/mineral, plenty of C and E. *Chocolate!* □



THE ONE CHOCOLATE LIARA
ALLOWS HERSELF, AFTER
FINISHING A FELIX LETTER.

SEED SAVERS

The Native Seeds/SEARCH folks sent me a *N.Y. Times* story of March 3, 1994, by Anne Raver about the work of individuals and organizations who go about the unsung business of rescuing classic seeds from extinction. "No bells rang in 1978," she wrote, "when Gary Nabhan, a botanist working for the Agriculture Department, descended into an isolated valley in the Grand Canyon and asked the elders of the Havasupai tribe, which has farmed there for 900 years, if he could have some seeds of two ancient sunflowers. He didn't know that 16 years later this same strain would be one of the few to resist a rust fungus devastating sunflowers around the world."

"...Seed saving has been going on for at least 10,000 years--ever since a human first put one in the ground and realized that more would be needed later. But now, as the destruction of habitats continues, as farmers keep on growing thousands of acres of a single crop that could be wiped out by a pest or virus, as seed companies are bought

up by multinational corporations that drop old varieties in favor of new hybrids, the custom of saving seeds has become a crucially important act: those endangered seeds could contain the genes that might prove resistant to some insect plague or blight."

Dr. Nabhan became a founder and research director of Native Seeds/SEARCH [see FL#81]. The nonprofit group has restored ancient, traditional crops to Native American farmers who had given them up for lost. They do conservation, and educational work, including a Diabetes Program to encourage the growing and eating of foodstuffs that protected Native Americans from that illness all through the centuries before European culture swept over their own. Last year they mail-ordered me my set of tiny nested seed baskets woven from pine needles by the Tarahumara people of Mexico. Still smelling of fresh pine needles, the baskets now are filled with postage stamps, clips, and other working paraphanelia on my desk, but there's nothing to stop me from using them if I wish as seed containers.

A dollar to Native Seeds/SEARCH will get you their catalog of seeds, foods, recipes, books, crafts, videos, etc.; or send a \$20 yearly membership which includes the catalog, a subscription to their quarterly, *The Seedhead News*, and 10% discount on purchases, workshops, and other special events. 2509 N. Campbell Ave. #325, Tucson, Arizona 85719. □



COLIC CHRONICLES

I was enthralled by Anne Lamott's *Operating Instructions. A Journal of My Son's First Year* (Ballantine Books, NY, 1994). The baby's father removed himself from the picture, but in the Northern Calif. community where she had little Sam, Lamott was blessed with wonderfully supportive friends and family. She needed every speck of their help; Sam was *not* an easy baby. Her trials with first-time birth and motherhood at age 35 are wrenching and also terribly funny.

"They took us all to my room, Sam and Pammy [her best friend] and Steve [her brother] and me, and I nursed the baby for the first time. None of us could take our eyes off him. He was the most beautiful thing I had ever seen. He was like moonlight."

At three weeks: "People kept trying to prepare me for how soft and mushy my stomach would be after I gave birth, but I secretly thought, Not this old buckarina....Oh, but my stomach, she is like a waterbed covered with flannel now. When I lie on my side in bed, my stomach lies politely beside me, like a puppy."

Sam was very, very colicky. Hour after hour he screamed and she nearly went crazy. He was growing just fine, though. "It's mind-boggling that my body knows how to churn out this milk that he is growing on....I've had the secret fear of all mothers that my milk is not good enough, that it is nothing more than sock water, water that socks have been soaking in, but Sam seems to be thriving even though he's a pretty skinny little guy."

At six weeks: "Last night was death. Vietnam. He was colicky from 10:00 till nearly 1:00. At midnight I broke under the strain and called this organization called Pregnancy to Parenthood. They help

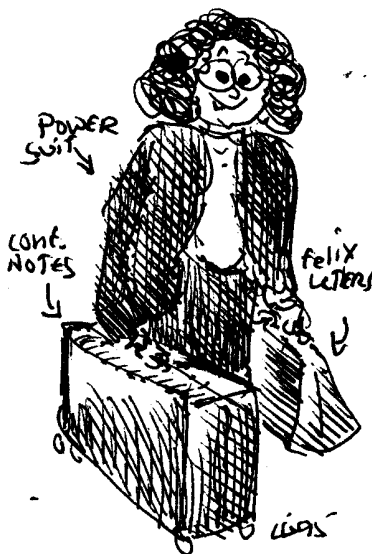
stressed-out parents and have a 24-hour switchboard that I think is to prevent child abuse. I felt humiliated calling and was crying quite hard, and Sam was crying quite hard.... So the person rang the clinical director at home, spliced my call through, and we talked for over an hour....She recommended I go on a wheat-free, dairy-free diet to see if it helps. Mostly she was just there for me in the middle of the night."

The colic stopped for good when Lamott acted on the advice. Frankly, I had not read of this approach to the common but agonizing problem of '3-month colic.' I spoke to Louann Sweaney, the angel in Lamott's story. Yes, she told me, about 20-25% of her clients' colicky nursing babies respond when the mothers go on a nondairy, nonwheat diet. Sometimes mom also has to eliminate 'gassy' foods like broccoli, onions and strong spices.

Certainly there's colic that doesn't respond to these changes, she said. A mother will see a response within 48 hours usually, if they're going to help with this particular baby. She hasn't done any statistical studies but knows it works pretty much this way because of talking to so many mothers over the years.

Louann Sweaney's background is in public health nursing. Generally, she hasn't found pediatricians to be aware of this way of dealing with colic--it's not common pediatric practice. But in a significant number of clients she's counseled, it's made a real difference, so when she gets a desperate call like Anne Lamott's, that's her first suggestion!

She said she'd be interested in my readers' experiences with the nonwheat, nondairy (or other) approach to infant colic. Louann Sweaney, Pregnancy to Parenthood Family Center, 1005 A Street, Suite 307, San Rafael CA 94901. Tel: 415/456-6466. It's a Family Service Agency of Marin County.



MY 1st ISSFAL CONGRESS

Five hundred scientists were at the 4-day June seminars of the International Society for the Study of Fatty Acids & Lipids [phew!] at the National Institutes of Health (NIH) in Bethesda, Maryland. A big increase in participants since the first ISSFAL congress two years ago in Lugano, Switzerland reflects a continuing surge of research-- more than 5,000 studies by now--a lot of it focused on Omega-3 (w3) fatty acids. Early on, the work was concerned almost exclusively with how fats affected the heart but widened to explore their impact on all body systems, including the brain.

The nonstop talks and poster sessions were meat 'n drink to me; after all, as maybe the first 'pop' nutrition writer to take the w3 fats seriously (*FL#14*, 1983) I feel downright motherly towards them! Twenty years ago they barely rated a paragraph in most medical textbooks.

Here's a sampling of ISSFAL's 'fat stuff' and its international flavor:

ANTI-INFLAMMATORY EFFECTS

Cytokines are a class of substances we make that in runaway amounts stir up inflammatory ailments including heart disease. Stefan Endres, M.D. (Munich) described how w3 fish oil supplements cut down the body's production of two cytokines--interleukin-1 and tumor necrosis factor--not just during the study, but for 10 weeks afterwards.

Several papers (U.S., Germany, Canada, Czechoslovakia) dealt with the strong possibility that w3s influence gene expression. For instance, w3s may inhibit certain cytokines, e.g., interleukin-1, by suppressing gene transcription for its synthesis.

Rheumatoid arthritis (RA).

Joel M. Kremer, M.D., (Albany Medical College) described good results with RA patients, using 2 to 5 grams of w3s per day (EPA plus DHA, the longchain ultrapolyunsaturated w3s in fish oil). Solid benefits showed up only after 10-12 weeks; therefore w3 studies should be at least 18 weeks long, he said. So far, there have been 14 studies demonstrating positive effects of w3s on this inflammatory disease. Can w3s replace aspirin and similar nonsteroidal anti-inflammatory drugs? That's still unresolved, but the studies point to w3s as safe adjuncts to conventional treatment of RA. [See *FL #66* for story on healing RA with nonconventional means.]

Inflammatory bowel disease.

In Crohn's disease and ulcerative colitis, high levels of w6 leukotriene B4 (LTB4) are found in inflamed intestinal tissues. *Omega 3s keep LTB4 in check.* William Stenson, M.D., (Washington U. School of Medicine, St. Louis) told of 24 patients with ulcerative colitis, 12 of whom received fish oil capsules containing about 5.4 grams daily of w3s (EPA and DHA from fish oil), the other 12 getting vegetable oil. Only the fish oil group improved markedly, gaining weight and able to reduce medication. As they got better, bowel tissue showed big decreases in LTB4s.

Skin ailments.

Vincent A. Ziboh, Ph.D. (U. of Calif. at Davis) said overactive production in the skin itself of inflammatory prostaglandins from w6 ARA gives rise to many skin disorders, including psoriasis. Dietary supplements of w6 gamma linolenic acid (GLA) from evening primrose oil, borage oil, black currant oil, or blue-green algae, produce soothing prostaglandins that keep pro-inflammatory ones in the skin in check and encourage healing.

Kidney disease

James V. Donadio, Jr., M.D., (U.S.) and Bruce J. Holub, Ph.D., (Canada) said 12 grams a day of fish oil (equivalent to less than a tablespoon) for two years effectively retarded the rate at which renal function was lost in 55 patients with IgA nephropathy (the most common kidney disease in the world). Reduction of inflammatory cytokines by the w3s in fish oil was believed to be a factor in slowing down damage and improving kidney function.

ANTI-CANCER EFFECTS

Breast Cancer

Researchers (Finland) analyzed fat in breast tissue in 55 women who had benign breast disease and in 73 women who had breast cancer. Marked differences were found *only* in w3s DHA and EPA, which were much lower in breast tissue of postmenopausal women with breast cancer than in the same aged benign group. They suggest w3s derived mainly from fish "might have a protective effect against breast cancer, in particular in postmenopausal women."

Flaxseed & cancer

Stephen C. Cunnane, Ph.D., and Lillian U. Thompson, Ph.D. (U. of Toronto, Canada) co-edited *Flaxseed in Human Nutrition* (AOCS Press, 1995). Dr. Cunnane presented a paper at the congress, but had no chance to discuss the flaxseed work. I plan to review the book but here's a quick summary of its cancer studies: In animal experiments, flax oil and flaxseed retard initiation, growth, and metastasis of mammary tumors and colon cancer. Besides its high w3s, flaxseed produces huge amounts of anti-cancer mammalian lignans in animals and people who consume it.



THE HEART

Out-of-rhythm beats

An extraordinary number of people die suddenly of heart attacks yet may not have coronary artery disease. Their heart simply 'goes ape,' beating wildly and arrhythmically until it's not so much beating as quivering. Ventricular fibrillation, it's called, killing perhaps 300,000 people a year in the U.S. Marvelous new animal studies demonstrate that long-chain w3s, e.g., EPA and DHA, slow down and normalize arrhythmia, and stop fibrillation cold. Alexander Leaf, M.D. (Harvard), honorary president of ISSFAL, told conferees this will have life-saving implications.

Scientists (Norway) described trials with over 300 persons, in which w3s in fish oil, but not corn oil, lowered heart rates by about 3 beats per minute. *DHA was the w3 responsible for slowing the heartbeat, rather than EPA.*

Blood pressure

Marguerite M. Engler, Ph.D. (U. of Calif. at San Francisco) found that dietary GLA lowered blood pressure in animal experiments. In theory, we can make enough GLA in our bodies from the essential w6, linoleic acid, gotten when we eat seeds, nuts, and oils. GLA itself is very scarce in food. It's found in breast milk, evening primrose oil, black currant oil, blue-green algae, and certain fungi.

In practice, however, the making of GLA by the body has common stumbling blocks: aging, high alcohol intake, a rise in stress-caused hormones, diabetes, etc. *These blocks can be bypassed by dietary intake of GLA.*

DIABETES

EPA & DHA

Doctors (Italy) gave 2.5 grams per day of EPA and DHA for three months to diabetic patients who didn't require insulin. Fats (triglycerides) in the patients' blood decreased, blood pressure went down, and HDL ("good guy") cholesterol went up. Moreover, no negative effects were seen on blood sugar regulation.

Sticky blood = poor circulation.

David F. Horrobin, M.D., Ph.D. (Nova Scotia & U.K.) presented a paper on the low levels he found of w6 DGLA and w3 EPA and DHA in red blood cells of diabetics. Apparently, even when diabetics eat plenty of foods and oils containing w6 linoleic and w3 alpha linolenic, they have a hard time converting these 'parent' essential fats into the above longchain polyunsaturates. Lack of DGLA and EPA/DHA may be the reason many have stiff, inelastic red blood cells, viscous blood, and hence poor circulation. Diet and/or supplements providing EPA/DHA and GLA (which becomes DGLA) may prove useful for diabetics.

ESKIMOS & DANES--An Aside

Which brings me to an intriguing early Horrobin theory (*Medical Hypotheses*, 1987, 22; 421-428). Beginning in the 1980s, the big hoopla about fish oils and the heart arose because Greenland Eskimos (Inuits) who ate fatty fish and blubber were found to have almost no coronary heart disease. Soon, the superpolyunsaturated w3s in their marine diet were pinpointed as

the major protectors, which indeed they are. But Horrobin said there's more to the story; there may be genetic differences in enzymes that process w3s and w6s. Danes and Inuits who live in Denmark and eat a European-Danish diet nevertheless have distinctly different plasma fatty acids.

To illustrate, Greenland Inuits on their traditional high-blubber diet have extremely low plasma levels of w6 arachidonic acid (ARA). Yet those who live in Denmark and eat the same foods as Danes still maintain ARA levels 6 times lower than the Danes! (As we know, too much ARA can set off inflammatory prostaglandins, causing mischief in the heart, skin, joints, brain, etc.)

Moreover, Inuits in Denmark maintain high levels of DGLA--about twice as high as Danes eating the same foods! *DGLA makes anti-inflammatory prostaglandins in the body.*

When I first wrote about the w3s in 1983 (*FL No.14*), I reported that a diet high in fatty fish and fish oils produced a fatty acid blood profile like an Eskimo's in all races tested so far. But that was before Horrobin's work! The way for non-Inuits to achieve a protective profile, he said, is not only to get plenty of w3s via diet and supplements, but also to consume sources of GLA, thus raising DGLA blood levels. Here's his rationale:

- In coronary heart disease, DGLA "has potent anti-thrombotic and vasodilator effects," he wrote. Low levels of DGLA in adipose tissue are strong predictors for high risk of coronary heart disease.
- Psoriasis, a skin ailment Eskimos don't have, is related to overactive ARA prostaglandins. DGLA, in contrast, produces its own prostaglandins (PGE1) which soothe and heal the skin.
- Eskimos don't get asthma or rheumatoid arthritis, either. Both these ailments are exacerbated by prostaglandins, leukotrienes, and other inflammatory metabolites made from ARA.
- GLA and w3s work together to stop damage and begin the healing process, Horrobin suggested.



THE BRAIN

Alcohol's Effects

Norman Salem, Jr., Ph.D., (NIH's **Institute of Alcohol Abuse**) said as little as 6 months daily of a single heavy dose of alcohol--equivalent to a very stiff drink--will bring on the loss of *most polyunsaturated fats in the liver and serious loss of w3 DHA in the brain*. Rhesus monkeys after 15 months lose visual acuity (DHA is needed in the retina of the eye). Loss of DHA, the most abundant and most unsaturated of the brain's polyunsaturates, "may contribute to the neuropathology associated with alcoholism." Let's be careful out there.

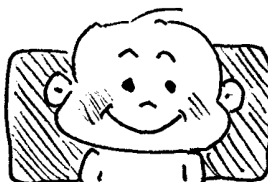
Schizophrenia.

Jonathan Laugharne's medical group (**Sheffield, U.K.**) observed amelioration of schizophrenic symptoms in patients who consumed 10 grams of high w3 fish oil daily for six weeks. Rationale for this treatment was the finding of low levels of w3 DHA in patients' red blood cell membranes in spite of seemingly okay dietary intake. Clinical improvement of schizophrenia, they said, was related to higher w3 levels in patients' red blood cell membranes. Dietary measures to correct what appears to be an abnormality in cell membrane fatty acid composition in the illness open up "novel and exciting therapeutic possibilities."

Depression

Andrew J. Sinclair, Ph.D., and colleagues (**Australia**) measured fatty acids in plasma and red blood cells of 20 moderately to severely depressed patients. The most severe depressions were found in those who had high w6 arachidonic acid (ARA) and low w3 EPA levels. Also, the milder the depression, the higher the EPA. Open for speculation is whether the high ARA-to-EPA ratio in plasma and red blood cells is the *result* of the depression, or predates it. The researchers suggest their findings "provide a basis for studying the effect of the nutritional supplementation of subjects with depression which is aimed at reducing the ARA/EPA ratio in tissues and the severity of the depression."

A Felix Aside: In *The Omega-3 Phenomenon*, 1987, Donald Rudin, M.D. described mental and physical improvements in several schizophrenic and depressed patients whom he had placed on high w3 flaxseed oil.



INFANT NUTRITION (My passion!)

A number of reports on fatty acids in brain spilled over into infant nutrition, to which many poster exhibits and a special evening session were devoted. I believe the congress's greatest work is in this area: laying down a foundation for the next generation.

Studies led by Ricardo Uauy, M.D., Ph.D. (**Chile**), Robert Gibson, Ph.D. (**Australia**), Susan E. Carlson, Ph.D. (**U.S.**), Gerard Hornstra, Ph.D. (**Netherlands**), Carlo Agostoni, M.D. (**Italy**), Ruth Morley, Ph.D. (**U.K.**), Berthold Koletzko, M.D., Ph.D. (**Germany**), Michael A. Crawford, FIBiol. (**U.K.**), and many others, shared a common theme: fetus and newborn need goodly amounts of w6 arachidonic acid (ARA) and w3 docosahexaenoic acid (DHA) for healthy brain and neural development.

Maternal supply

- Compared with nonpregnant women over a 36-week period, pregnant women lost large amounts of ARA, DHA, and EPA from tissues and blood as these important fatty acids were routed to the fetus. Women's DHA status was found to deteriorate still further with each pregnancy.

- Knowing this, William E. Connor, M.D. and colleagues (**Oregon Health Sciences U., Portland**), supplemented the diet of 15 women, beginning the last trimester of pregnancy, with sardines and fish oil for 9 weeks, which provided 2.4 grams of w3s (EPA plus DHA) per day. In these ladies (but not 16 unsupplemented controls), *DHA in red blood cells increased over 50%*.

Most important, *newborn babies of supplemented mothers had about 35-45% more DHA in red blood cells and plasma.*

Interestingly, pregnant women, unlike nonpregnant ones, convert much of their plasma EPA into DHA, before the blood reaches the placenta. The placenta also preferentially converts EPA into DHA for the fetus. The reason? Too much EPA competes with and decreases ARA levels in fetus and newborn! Ye gads, nature is smart!

Infant Brain & Neural Development

The fetus gets ARA and DHA from maternal circulation via the placenta; the newborn, from mother's milk. ARA is more easily gotten in maternal nutrition, i.e., from meat, eggs, and conversion of w6 linoleic acid. DHA, however, is scarce except in mothers who eat fish, shellfish, and sea vegetables. Apparently, converting DHA from w3 alpha linolenic is poky and limited. Nevertheless a baby who nurses will get at least some DHA as well as ARA. An infant on U.S. formula gets neither, as yet. Current studies now confirm the following:

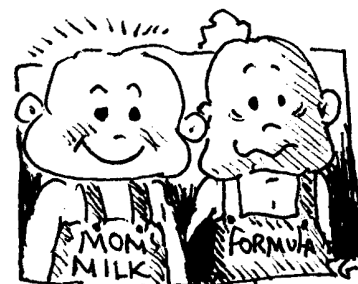
- **Preterm** infants given mother's milk have more DHA in red blood cells, brain, and neural tissues than preterm babies given formulas containing alpha linolenic acid as the only w3.

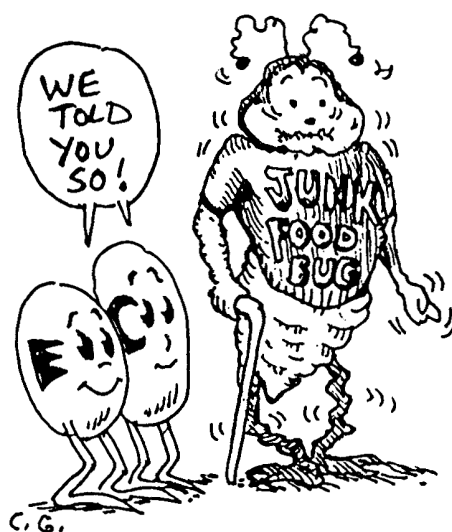
- **Preterm** infants given mother's milk have better cognitive development and visual acuity than those on formulas lacking DHA.

- **Even** though fullterm babies are better able than preterm ones to convert w3 alpha linolenic into DHA--and also w6 linoleic into GLA and ARA--nevertheless Dr. Agostoni's new study demonstrates clear benefits when they get a formula supplying all three polyunsaturates.

Ninety infants in Milan received either mother's milk; formula with ARA, GLA, and DHA in amounts comparable to breast milk; or standard formula without GLA, and with alpha linolenic as the only w3. At four months, the babies fed human milk and those fed the "improved" formula had much higher Developmental Quotient scores (European infant psychomotor tests) than those on regular formula.

- In preterm infants weighing less than 4 lbs. who were fed by tube during their hospital stay, those who received mother's milk had higher developmental scores at 18 months than their tiny hospital mates who got formula. In this English study, 313 of the children (96%) were followed up and tested for overall (verbal, etc.) IQ at 7-1/2 to 8 years of age. You guessed it--the original breastmilk kiddos scored over 8 IQ points higher than the formula ones!





Human Interest Stuff

I traveled 3000 miles and spent hard-earned bucks to meet dedicated workers who labor to bring forth nutritional verities to sink our teeth into, so to speak. One of them, Artemis Simopoulos, is head of The Center for Genetics, Nutrition & Health and, as secretary-treasurer of ISSFAL, was a main organizer of this great congress. The research and writings of this gracious lady have moved mountains, as well as fueled many *Felix Letters*. Tall, robust David F. Horrobin and I felt like old friends when we met. Dr. Donald O. Rudin and I drew on Dr. Horrobin's pioneer work on GLA and prostaglandins for *The Omega-3 Phenomenon*, published in 1987. (We still draw on it, having updated the book for Avery Publishing Group. It should be out this fall or winter.)

I had written Dr. Michael Crawford, asking him to say hello at the congress ("look for the gray-haired lady with a rose in her teeth." He didn't have to, since we all got big name tags!). This eminent scientist from London's Institute of Brain Chemistry & Human Nutrition, Queen Elizabeth Hospital for Children, whose 1989 book with David Marsh on nutrients as evolutionary fuel, *The Driving Force*, is becoming a classic [see *FL#58*], would be co-chairing the workshop on maternal fatty acid requirement and be its final speaker. At Queen Elizabeth's he sees tragically handicapped infants who were born too early and too small. He knows as much, firsthand, about the effects of fatty acid deprivation on brain development in preterm babies as anyone on earth. This was to be his only talk.

His cochair, Gerard Hornstra of the Netherlands, had repeatedly cautioned the evening's speakers to keep their presentations to the allotted 15 minutes, plus 5 minutes for questions, because the auditorium had to be emptied at 9:05 p.m. by strict NIH regulations. Sheila M. Innis, Ph.D., of the U. of British Columbia, Vancouver, the next-to-last speaker, went to the podium. She is a small, fine-boned young woman with the dainty manner of a wren but the tenacity, it turns out, of a pit bull. Flying in the face of evidence of the great value for preterm infants of human milk and, as a second choice, formulas that contain ARA and DHA, Dr. Innis voiced her agenda. Preterm (and full-term) babies on breast milk, according to her assembled studies, didn't have any better "developmental outcomes" than babies on standard formulas, i.e., those without ARA and DHA. Therefore let's not be in a hurry to rock the existing formula boat.

In other words, since human milk is no great shakes, what's the point of making formula that comes closer to it!

While Dr. Innis had the credentials and the right to present her views, she *didn't* have the right to swallow up all of Dr. Crawford's speaking time. As she went on and on relentlessly with a barrage of slides and chatter, I began to hear murmuring in the audience. Dr. Hornstra looked uncomfortable but helpless. When Dr. Innis finally walked off the stage, Michael Crawford took the microphone to say quietly that he would skip his talk to allow time for the general discussion. Innis took her seat in the row behind me. She had a complacent smile on her face and I knew she had deliberately usurped Dr. Crawford's time.

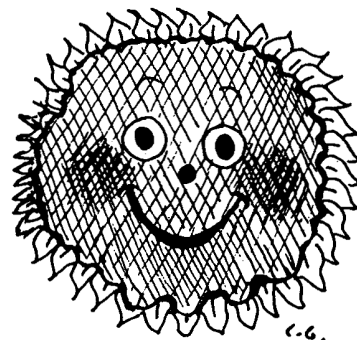
Okay, so scientists play dirty pool, too -- what else is new? I can't help getting a visceral reaction, though, where babies are involved. The long struggle to convince the pediatric community of the essentiality of w3s is nearly won. Makers of formula for the European market, following the counsel of pediatric societies, are providing preterm formulas with balanced longchain w3/w6 fatty acids. Japan's manufacturers were early in adding GLA, ARA, and DHA to their formulas. American formula makers are by no means blind to what's happening.

Martek Biosciences Corp. of Maryland had poster exhibits at the congress. They've developed ARA and DHA from *vegetarian (algal and fungal) sources*, competing with fish oil products. Currently they have about 40% of world formula makers under license, including, in the U.S., Mead Johnson and Wyeth-Ayerst. According to

Beatrice Trum Hunter (*Consumer's Research, Inc.*, April 1995), Nutricia, American Home Products, and Bristol Myers Squibb have licenses to include Formulaid (Martek's DHA/ARA blend) in their infant formulas.

Babies need good ones now because many U.S. families require two incomes to make ends meet, forcing moms to go to work in droves; sadly, breastfeeding which had revived in the 1970s is declining again.

I learned a lot from the ISSFAL folks. Their work will help small fry all over the world to grow up healthier and smarter. □



NO CONFLICT OF INTEREST!

From a July 7 Associated Press report: "The nation's big, for-profit health insurers own tens of millions of dollars in tobacco industry stocks, three doctors who favor national health insurance asserted.

"Writing in the British medical journal *Lancet*, they likened this investment strategy to the slogan of a combination veterinarian-taxidermist who promises that 'either way you get your dog back.'" □



Illustrations by Clay Geerdes and other artists as noted.

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