

The FELIX Letter

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A COMMENTARY ON NUTRITION

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MARGARINE & THE INVASION OF TRANS FATTY ACID MONSTERS !

This past August, the margarine myth was shattered—well, almost. Let's say it took a proper drubbing. *The New England Journal of Medicine* published a landmark study from the Netherlands showing that *trans fatty acids* in margarine were responsible for the unthinkable: they unequivocally raised blood levels of "bad" cholesterol (LDL) in human subjects and lowered the "good" kind—the HDL that protect arteries from clogging. Margarine—the American Medical Association's madonna of the arteries—had turned out to be a harpy, gnawing at our vitals!

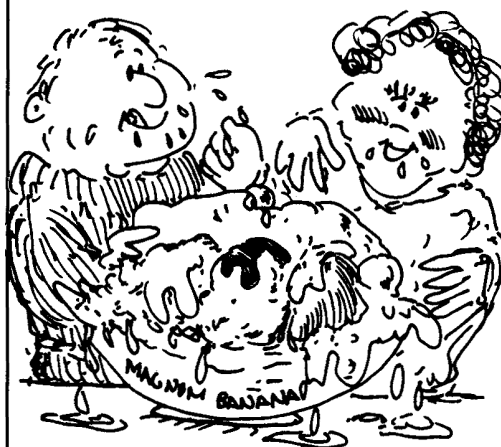
Ironically, the byline on *The New York Times* report of the study was Jane Brody's, a nutritionist and longtime margarine devotee. Brody's columns and recipes in national magazines often sit in tidy juxtaposition to full-color margarine ads. I have another bone to pick with her. For years, in her often excellent books and columns she invariably lumped "fatty fish" along with fatty meat as equally evil no-no's in AMA-inspired dietary recommendations for 'saving the heart.' The new information that was emerging about the omega-3 fats, courtesy of scientists such as Donald Rudin, Michael Crawford, Ralph Holman, and Hugh Sinclair, was ignored by mainstream nutritionists, including Jane Brody. The few who first reported on it had no ties to industry or to publications dependant upon margarine-ad revenues. Suddenly, on a sunny morning, some four years after we began writing about fatty fish as a life-giving source of omega-3's, Jane did a Brody! Omega-3 fats were "in"—*The New England Journal of Medicine* said so. Fatty fish was now okay for the heart! (No applause, please.)

Well, here we go again, with a turnabout on margarine—maybe. The persevering studies by Mary E. Enig, Ph.D., and others in her research group at the University of Maryland on trans fatty acids in margarines, shortenings, and salad oils have been available to Brody and the medical world since at least 1978. A year later, F. A. Kummerow of the University of Illinois warned that when trans fatty acids

from diet became part of bodily tissues, including the heart, they sharply decreased the amount of energy the heart could put out. Other researchers expressed doubts about the wholesale inclusion into our system of strange fats that didn't exist in nature. One of their concerns: Might trans fatty acids be connected to the rise in cancer?

Modern Weird Fats

Trans fatty acids [TFA] appear when oils are partially hydrogenated by chemical processes to make them firm enough to be used in making margarine and shortening. Dairy fats contain small amounts of natural TFA that differ in structure from the machine-made ones; generally, TFA seldom are found in natural fats. When we eat TFA, they quickly settle into the membranes of the billions of cells that form our organism. They do their harm by their resemblance to unsaturated fats, a superficial one that stops when metabolic activities performed by the real fats are called for. TFA can sneak into cell membranes, but they can't fish or cut bait, i.e., do what the natural unsaturated fats have to do. Nevertheless, U.S. margarine manufacturers list the fake along with the real in order to boost the so-called "unsaturated" contents of their products.



THE
MARGARINE
MAJORITY?

The food oil industry boomed in the early 1960s, when "polyunsaturated vegetable oils" became the AMA's password to healthy hearts. A gigantic, continuing industry promotion, sanctioned by dietitians and doctors, has made margarine synonymous with virtue.

Baloney, say Enig and other scientists. Too many disquieting things showed up when trans fatty acids were fed to animals in their laboratories, as well as in the few human studies that could be done with meager funding. Among the problems observed were alterations in physiological properties of biological membranes; inhibition of important enzymes; decrease of normal milk fat in lactating mice; decreased response to insulin; lowered immune response. Serious stuff.

And, yes, *trans fatty acids* caused higher serum LDL cholesterol and lower levels of protective HDL, both in animals and humans. Landmark studies, but folks like Enig and Kummerow were yelling in the wind. Nobody who was anybody seemed to hear.

I don't know why the new Dutch study made the medical hierarchy change its mind—maybe it was the weight of all the past clues it had refuted or ignored for so long. In any event, coverage in *The New England J. of Med.* signifies a major re-evaluation of the value of margarine could be on the agenda. Don't expect miracles. Dr. Scott Grundy, in the journal's accompanying editorial, said butter is worse and people should still use margarine, but in moderation as with all fats.

Chasing Down the Elusive TFA

It's not that simple, according to Dr. Enig. Margarine is only the tip of the iceberg. While the Dutch researchers said Americans consume 2-4% of their calories as trans fatty acids compared with 10% given to their subjects, Enig says the official data base used to calculate U.S. intake grossly underestimates TFA content in common foods

One reason is that partially hydrogenated vegetable oil and shortening, which are high in TFA, have gradually replaced butter, lard, palm oil, coconut oil,

and beef tallow, which are low in TFA, as the main fats in breads, rolls, cookies, cakes, crackers, pastries, frostings, candies, puddings, cheese substitutes, etc. Also, the high TFA fats increasingly are used to fry fish, chicken, french fried potatoes, doughnuts, onion rings, and other commercial and restaurant foods. Using state-of-the-art equipment, Enig's group has been reanalyzing the fat and oil content of hundreds of foods in the data bank of the National Center for Health Statistics [HANES] that's routinely cited in scientific studies. They continue to find tremendous discrepancies re TFA content.

For example, here's a tiny sampling of products analyzed for fat content in the HANES data bank, *where TFA were not reported but, instead, were included with "good" mono- and polyunsaturated fats.* Next to each food is the percent of total fats that Enig and the Univ. of Maryland group found actually to be trans fatty acids: [This means, of course, that these foods, like hundreds of others reanalyzed, had far less unsaturated fats than the HANES data indicated. This invalidates more 'scientific' studies than you can shake a stick at.]

Parkerhouse rolls - 24%
Pepperidge Farms bread - 28%
Saltine crackers - 31%
Ritz crackers - 23%
Graham crackers - 37%
Pringle potato chips - 27%
Corn Puffs - 33%
Cookies, sandwich type - 30%, 19%, 37%

Dr. Enig says it was a mistake for McDonald's, Burger King, and other fast food places to shift from beef tallow to vegetable oil, since the replacements usually are partially hydrogenated oils loaded with trans fats. In addition, french fried potatoes cooked in vegetable oil soak up 58% more fat than fries cooked in tallow—resulting in a lot more calories and fat per serving (a nasty percentage of it in the form of TFA). Yet, many consumer groups thought they had won a victory because of the shift from "bad" animal and tropical fats to "good" vegetable oils.

New Fats, New Diseases

The switch, in general, from consumption of animal and tropical fats to hardened vegetable oils has been trumpeted as a step forward for mankind, but the historical evidence is not reassuring. Butter, lard, beef tallow, and the tropical oils (palm, palm kernel, and coconut) have been staples in human diet for possibly thousands of years. Epidemic heart disease and cancer, on the other hand, are strictly of this century!



The most illuminating biomedical development of the past decade has been an understanding of the link between these "modern" diseases and faulty body chemistry that, in good part, may be triggered by dietary imbalances of two groups of major regulatory molecules—the omega-3 and omega-6 polyunsaturated fatty acids. It's becoming increasingly clear that the answer is not to drench our diet with any oil that's labeled "polyunsaturated", but to make certain (1) our diet contains adequate sources of the neglected *omega-3* fatty acids, as in flaxmeal, walnuts, soybeans, fish (the fatter the better!), canola oil, flaxseed oil, and soy oil (*all oils unhydrogenated!*); (2) our diet has adequate *omega-6* fatty acids, as in whole grains and seeds, wheat germ, walnuts, canola oil, flaxseed oil, and soy oil (*unhydrogenated, of course. Best to emphasize foods and oils that do double-duty, i.e., are good sources of both omega-3 and omega-6*); and (3) all oils and fats are to be consumed in modest amounts, because too much omega-6 suppresses the natural biological activities of the omega-3, and vice versa; and too much saturated fat may create a whole slew of problems, not the least of which are gummed up arteries.

When "Margarine Can Harm the Heart!" headlines hit the daily papers, I received clippings and congratulations from readers all over the country who knew what I thought of the lousy science in the margarine scam which, heretofore, had gone unchallenged by the mainstream. Alas, we may have been too optimistic! The current (October) issue of *Reader's Digest* has a pullout section sponsored by Fleischmann's (in full-color), with clip-out coupons and recipes featuring their products. The margarines are, of course, rich in trans fatty acids. So are the crackers, since they are made with partially hydrogenated soy bean oil. (Check all the crackers in your

supermarket to try to find some that are *not*—it's almost a lost cause. You have to look to your health food store, usually, for those made with non-hydrogenated oils.) Modestly, the ad notes "By choosing foods that have zero cholesterol and are low in saturated fats—you'll see just how delicious healthful eating can be!"

Well, guess who is involved with Fleischmann's in a cozy 'I'll scratch your back if you'll scratch mine' deal? On seven pages intertwined with Fleischmann's ads and self-promotion plugs, the American Academy of Family Physicians (AAFP) enjoinders the readers to follow the sponsor's recipes in order to "gradually get into the habit of eating healthful low-fat, low-cholesterol foods."

Here comes the sinister part. Fleischmann's products are made by Nabisco Foods Co., now part of the R.J.Reynolds Nabisco tobacco conglomerate. Fifty-five percent of RJR Nabisco's sales in 1989 came from tobacco products, according to its own spokesman.

In a separate campaign, Fleischmann's paid the American Medical Association \$250,000 to become a corporate sponsor of its Campaign Against Cholesterol, according to an October 2nd Associated Press release.

Now the good part. A lot of rank and file doctors are steaming. Dr. Brent Blue, a family physician from Wyoming and member of the AAFP, is quoted in the AP story: "Basically the American Medical Association and the American Academy of Family Physicians are associating with people who murder 400,000 Americans a year..." [According to the U.S. Office on Smoking and Health, smoking is the leading preventable cause of death, killing an estimated 390,000 Americans each year.]

Dr. Alan Blum, chairman and founder of the anti-smoking group Doctors Ought to Care (DOC), said "It's a pathetic use of a medical organization for the commercial ends of a tobacco and food conglomerate." Three years before, DOC members fought successfully to keep the AAFP from joining Fleischmann's in a cholesterol screening program. Apparently, it didn't stop RJR Nabisco/Fleischmann's from trying the current ploy, which worked.

So, dear readers, if the margarine/TFA safety issue is muted for a few more decades, don't be surprised. This is BIG money calling the shots. On the other hand, Dr. Scott Grundy makes a practical point in the *Journal* editorial: "The main message is to industry to provide the public with healthier margarines and shortenings." He describes manufacturing alternatives which could reduce or eliminate TFA. For example, stearic acid, a saturated fat which doesn't appear to raise blood cholesterol, could be used as a natural hardening component.

Maybe, just maybe, the industry could be nudged into going back to the drawing board, now that its 'Margarine for Healthy Hearts!' medal is in the Cracker Jacks box where it belongs.

An Easy Homemade Spread

And while we're waiting, let's enjoy a natural product that *tastes only of butter* and takes just a few seconds to prepare. Melt two cubes of butter in a pan over gentle heat. Stir in three-fourths of a cup of your favorite unhydrogenated oil (canola, flaxseed, soy, walnut, olive, etc. or a mixture of any), pour into a covered container and refrigerate. That's all there is to it. It hardens naturally and spreads like margarine, and it won't gum up your cell membranes with trans fatty acids.

Stick that in your pipe and smoke it, RJR Nabisco!



FOR THAT TRANSFATTY TASTE
THAT STAYS WITH YOU!

RDA: PRONOUNCEMENTS FROM ON HIGH TO US SIMPLE FOLKS

The Tenth Edition of the National Academy of Sciences' Recommended Dietary Allowances (RDA) chips away at some of the very nutrients shown to be already low in people's diets. The repercussions will be seen all around us because the RDA are treated like Holy Writ by doctors, dietitians, and the food industry, as well as by the U.S. Department of Agriculture, which adopts most of them in its version, the USRDA. Official blessing now exists for reduced levels of certain vitamins and minerals in infant formulas, government feeding programs like WIC, dietary recommendations for pregnant and nursing women, fortification of foods by industry, and nutrition in hospitals, nursing homes, and children's lunch programs.

The recommendations I find to be the most potentially harmful as well as the most puzzling are for decreases in *magnesium* and *folic acid*. We evolved as a species where deep green foliage, nuts, seeds, and fruits that provided life-giving sources of both nutrients were ours for the plucking. Nowadays, one survey after another shows dietary deficiencies of magnesium and folic acid in every age group.

Magnesium Is Coming Up Roses

With regard to magnesium, a 1987 study by USDA researchers of over 4000 women found deficiencies to be common in those who were pregnant or on birth control pills, black women showing the lowest levels of all. Yet the RDA for magnesium has been sharply trimmed for adult women and for pregnant and nursing mothers. It's illogical, because medical research has been focusing newly on magnesium's wonders. For instance, it's now found to be as important as calcium in maintaining strong bones at all ages, and may turn out to be a key element in preventing osteoporosis.

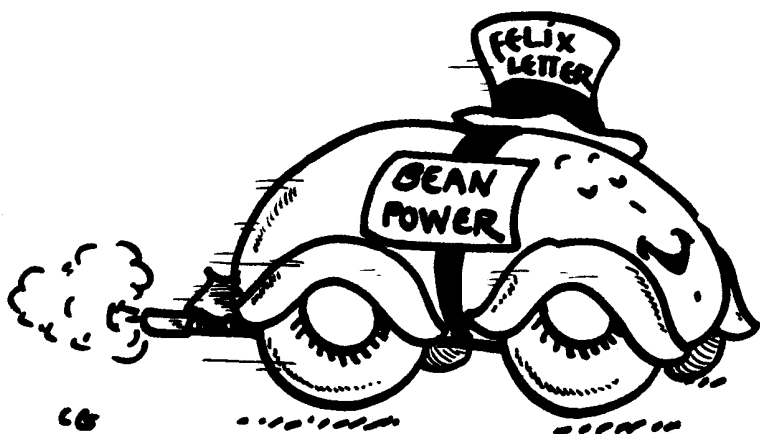
Cardiologists are reporting that magnesium supplements *normalize high blood pressure* in patients. Magnesium also stops arrhythmia (irregular heartbeat) and tachycardia (dangerously fast heartbeat). Scientists now suggest that *low magnesium levels may be a root cause of atherosclerosis and heart attacks!*

Up-to-date medical reports show low magnesium levels sharply increase a person's chances of developing *diabetes!*

Heart disease and diabetes arose as two of the biggest killer diseases in the 20th century. Before that time, they were insignificant. You and I may see a connection between this rise and the fact that magnesium has been one of the major casualties in modern processing of foods [e.g., a slice of whole grain bread contains 23mg of magnesium compared with 5mg in white bread], but the arbiters of the RDA apparently do not! The RDA for this essential mineral should have gone up, not down.

Folate: A Staunch Protector

The decision on folic acid (also folacin or folate) really pushed my buttons. I had reported recently (FL 51) on a milestone study by Dr. Aubrey Milunsky of Boston University that made a sterling case for taking supplements containing folate early in pregnancy—or earlier yet, when a woman is planning to conceive—to prevent neural tube defects in newborns. Previous studies here and in England had confirmed the connection between these tragic birth defects and low folate in the mother's diet. Milunsky's study was well-received by conservative experts. My hope was that doctors and dietitians would routinely encourage the use of vitamin-mineral supplements containing folate in patients planning to be or already pregnant.



About one in every 900 to 1000 babies is born with deformities in the spinal cord and brain, making neural tube defects one of the commonest of the disabling birth defects. Is it stretching a point to imply there may be a relationship here to a usual finding in dietary surveys--serious folate deficiency in teen-age girls and in women of child-bearing age?

How did the scientists who set the RDA solve the dilemma of a large population at risk for folate deficiency? *By declaring people need only half the amounts previously established in the 1980 RDA!*

Never mind that, in addition to birth defects, low folate status is implicated in precancerous conditions (dysplasias) of the bronchial tubes, colon, and uterine cervix. These are common, not exotic, disorders that foreshadow cancer. One research study, however, showed that 5mg daily of folate [more than 27 times higher than the new RDA of 180 micrograms, but known to be safe] caused reversal of cervical dysplasia in many of the patients, and prevented cervical cancer in all 22 (FL 7).

Liver, brewer's yeast, leafy vegetables, sweet potatoes, winter squash, beets, mung bean sprouts, all beans and peas, sunflower seeds, wheat germ, avocado, oranges, melons, and blackberries are good folate sources if eaten regularly. It's been estimated that twenty percent of all Americans never eat a fresh vegetable or any fresh fruit. The canning process causes large folate losses. In addition, women using oral contraceptives have higher folate requirements. Pregnant women do, too. Teen-age girls who are pregnant are in double jeopardy, because their own growth requirements as well as the baby's have to be met.

How many teen-agers do you know, pregnant or not, who make a habit of eating the foods described?

Let 'em Eat Cake!

The National Academy of Sciences' special committee on nutritional status during pregnancy and lactation states that "on average, dietary intake by pregnant women is less than the RDA for eight nutrients: vitamins B6, D, E, and folate; iron; zinc; calcium; and magnesium." Nevertheless they do not recommend any routine prenatal supplements (except 30mg of ferrous iron daily during the 2nd and 3rd trimesters.)

Instead, "routine assessment of dietary practices is recommended for all pregnant women in the United States to allow

evaluation of the need for improved diet or vitamin or mineral supplements."

You and I know a little about the real world. Where, when, and how are pregnant women going to get the careful evaluation of their diets that will give the green light to supplementation! The Committee says they fear supplements will replace real food. The reality is that people who eat the healthiest diets tend to also take supplements, while those who live on junk food don't! Teen-aged pregnant girls are the worst offenders. Many of them have spent their media-dominated girlhoods terrified of becoming fat, skipping meals in order to compensate for gobbling down sweets and fries. The "fatness" of their pregnancy evokes dread in many. Sure, supplements aren't real food, but they may take some girls out of nutritional danger zones.

The report continues: "For pregnant women who do not ordinarily consume an adequate diet and for those in high-risk categories, such as women carrying more than one fetus, heavy cigarette smokers, and alcohol and drug abusers," a daily multivitamin-mineral preparation containing the following is recommended: Iron - 30mg, Zinc - 15mg, Copper - 2mg, Calcium - 250mg, Vitamin B6 - 2mg, Folate - 300 micrograms, vitamin C - 50mg, and vitamin D - 5 micrograms. Not included are two of the nutrients they said are consumed at less than the RDA by the average pregnant woman: vitamin E and magnesium. It's a paltry formula, by my standards, lacking other key nutrients as well.

The topper is that, even when a patient has been determined to be at risk, health providers are cautioned not to begin the supplements before the second trimester (the 13th week of pregnancy). Unfortunately, neural tube developmental malformations caused by folate deficiency take place during the first six weeks!

Moreover, the Committee is well-aware of evidence that use of multivitamins or folate around the time of conception "may provide some protection against the occurrence of neural tube defects." Because the data "are not conclusive," however, they do not recommend vitamins for this purpose!

In my eyes, the lowering of nutrient requirements in the new RDA, as well as the pinched recommendations on supplements for pregnant women, smack not so much of scientific caution as of mean-spiritedness, reflecting prevailing attitudes of the privileged in the U.S. today towards the rest of us peons. I find it disgraceful.



The A to Z Encyclopedia of Grains, Starches and Fillers by G. Joy Underwood, director of Allergy Educational Services in Canada, is a reference guide to buying, storing, cooking, and serving common as well as uncommon foodstuffs that individuals with food allergies often must learn to depend on, and other folks with culinary daring just like to play around with. Nuts, seeds, grains and vegetables you may never have heard of are made manageable, including acorns, agar, breadfruit, cassava, dasheen, ginkgo, lotus, poi, sago, and xanthan gum! The familiar ones such as arrowroot, buckwheat, carob, etc. also are given their due. Any profits from book sales go to help needy allergy patients receive counselling. Send \$13 to Allergy Educational Services, 1202-1175 Broadview Ave., Toronto, Ontario, Canada M4K 2S9.



Illustrations are by Clay Geerdes and other artists as noted.

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