

The FELIX Letter

NO. 20

A COMMENTARY ON NUTRITION

1984

PART I: SAVE-THE-HEART DIETS

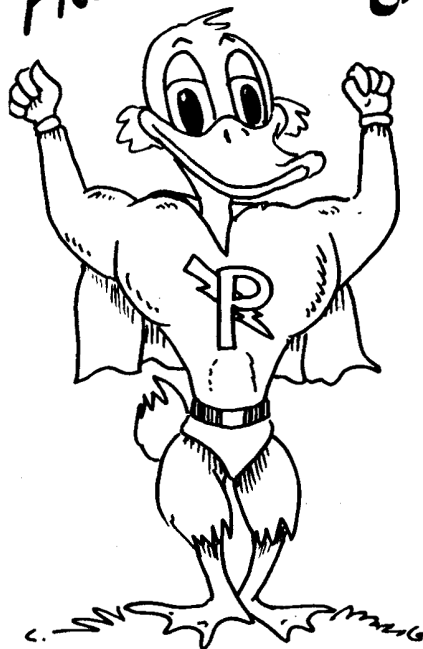
Readers and friends have been hinting broadly. Enough, they plead, of *The Felix Letter's* pandering to those who salivate happily at the sight or sound of biochemical jargon! Just inform the rest of us in plain English WHAT WE SHOULD EAT. Issues 20 and 21 are thus devoted to a two-part consideration of dietary fats: what's wrong with the standard save-the-heart diet; and practical choices of fats, oils, and the foods that contain them, for good health.

Since the 1960's, the medical-nutritional dictum has been that eating too much saturated (hard) fat and cholesterol, and not enough unsaturated fat such as vegetable oils is a major cause of heart attack and stroke. *Do we benefit from the suggested avoidance of full-fat dairy products, fatty meats and fish, and of foods low in fat but high in cholesterol such as organ meats and shellfish? Is margarine a protective substitute for butter? Will salad oils help our heart and arteries?*

A Broader View

The above measures have been stressed for 20 years in medicine's "prudent diet" recommendations for the heart. Judging from long-term studies, the benefits from applying them are far from clearcut. The anti-fat/cholesterol heart-saving drive was launched amidst promotional fanfare that tended to obscure its shaky research position. Reinforced by media repetition, it soon took on the patina of at least a revered axiom, if not one of the Commandments. Nevertheless, there are skeptics in nutrition and medicine who continue to raise questions.

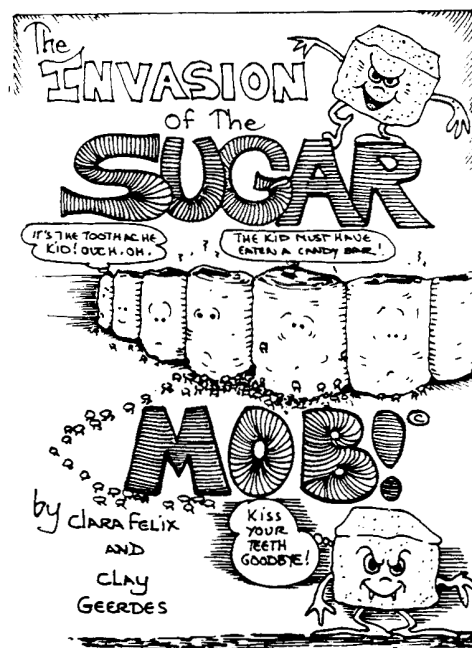
It's
PROSTAGLANDUCK!



Many link the disturbing 20th century rise in heart disease — along with high blood pressure, diabetes, cancer, tooth decay, intestinal ailments, and mental illness — to revolutionary events in modern diet, far more extravagant than the 9 percent increase between 1900 and 1950 in calories from fats that set off the medical panic button, most of it, incidentally, in vegetable shortening, margarine, and oils. The final transition from farm- to city-centered population meant most people couldn't raise their own food or buy it from neighboring farmers. With the ushering in of the technological age, steelroller milling of grains took over for the local miller's grinding stone — making available not just to wealthy folks but to everyone, a flour that was whiter than snow, silky smooth, and **lower in all the B vitamins, folic acid, germ, vitamin E, essential fatty acids, protein, minerals, and fiber** than any ever before known to man.

While bread was metamorphosing from staff of life to fun food, another luxury product, refined sugar, became so cheap and available people were practically soaking it up in their pores. In the early 1800's, ten pounds a year was about all they could get or afford. Just a century later, they were polishing off a pound every four days. (Now, we do it in three!) Inevitably, sugar teamed up with its logical mate, white flour, to form a blockbuster vaudeville act that left half the adults in this country toothless by age 50. The two are still the biggest show in town.

Traditional homemade butter, lard and poultry fats were replaced by chemically hardened shortenings and margarines [more on this later], not only in the home but in the commercial production of packaged foods that was becoming a great industry. With the growth of refrigerated rail and truck transport, communities that used to rely on local fruits, vegetables, grains, hogs, and poultry, along with fish from local waters, now ate produce grown on California's giant agribusiness acres, and beef from cattle crammed together and fattened in commercial feed lots thousands of miles away.



The Plunderers

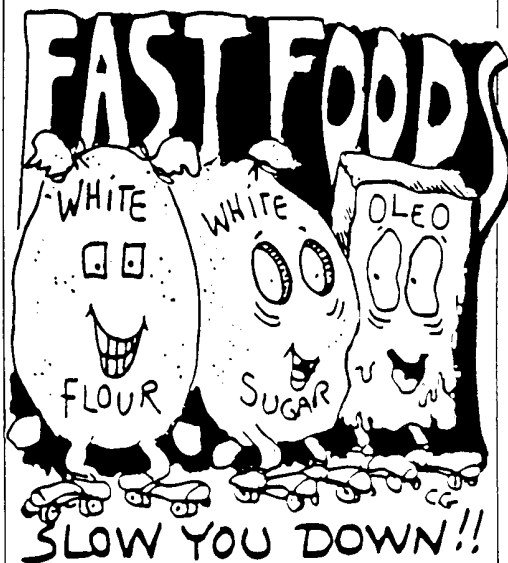
Nutrition experts point with pride to these developments, insisting the year-round variety permits Americans to be the best-fed people on earth. The quarrel of those scientists who dispute the 'best-fed' aspect is not with the admirable technical achievements, but with their misuse by *a long parade of short-sighted agricultural and commercial adventurers who have depleted our soils, tainted our waters, taken real food and turned it into mock food, then, with massive advertising, brainwashed whole populations into choosing products that thrill instead of nourish!* We humans are adaptable creatures who can put up with a fair amount of dietary nonsense and even brief spells of starvation. We are, however, ill-equipped to deal with *a lifetime of undereating the foods we need and overeating those we don't.*

The consequences, many researchers believe, are seen in the unprecedented increase in the illnesses noted above. We used to eat foods that were grown. More and more, we eat foods that are manipulated. Massive losses of minerals, vitamins, essential fats, and fiber are "balanced" by huge additions of sugar, salt, and fancy chemicals. The medical and nutrition hierarchies consistently have given their go-ahead to these assaults, despite rumblings from the ranks. Blaming a high cholesterol, saturated fat diet for heart attacks was an easy out. It's turned out to be a tenuous half-truth upon which to have based twenty years of highly publicized diet advice for the heart.

Why take
an expensive vacation!



No Comment



The Fats We Need

The new "fat facts" are in, and they go something like this: *two families of fats are needed for health — the Omega 6 and Omega 3 unsaturated fatty acids** — and modern diets are very short in one. *The supply of Omega 3's has been dwindling for 75 years, systematically driven out of our diets by the new technology,* with the blind sanction of orthodox nutrition and medicine.

Like vitamins, minerals, proteins, or the Omega 6 fatty acids, they are *essential* to our health. Normally, they and the Omega 6's form a large part of all our cell membranes, and they happen also to cluster in great numbers *in the brain and eyes.* Their importance was underscored when we learned that both

* For all you biochemistry *mavens* out there, "Omega," the last letter of the Greek alphabet, refers to the tail end of the long chain of carbon and hydrogen atoms that make up a fatty acid molecule. The acidic part containing oxygen is at the other end (beginning?). *Omega 3* means that the first unsaturated link in the chain — i.e., removal of hydrogens — begins with the 3rd carbon from the omega end. Likewise, *Omega 6* means the first unsaturated link begins with carbon No. 6. Both families can increase their chain length and number of desaturations, but the relation of the first unsaturated link to the omega end never changes, and this differentiates the structure and functions of the two essential fatty acid families.

the Omega 6 and Omega 3 fats that are tucked in our cell membranes can be converted into *prostaglandins and related molecules*, which act as powerful local hormones or "activity directors." The two families each produce different sets of prostaglandins. Those from the Omega 3 family (the missing ones) are directly involved in *preventing spasms in arteries* (the kind that can raise blood pressure or set off a heart attack). Another protective function: *preventing platelets in the blood from forming artery-plugging clots.*

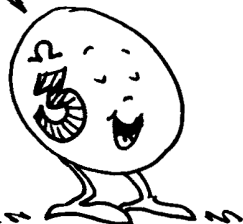
The campaign to reduce dietary saturated fats and increase unsaturated ones had at least one element of soundness in it, because an adequate supply of the TWO families of unsaturated fats is absolutely required (1) *to form normal cell membranes;* (2) *for normal brain and nerve function;* (3) *to package and handle cholesterol safely;* and (4) *to insure balanced prostaglandin production for the proper regulation of all cellular activities.*



The Big Error

These are not Mickey Mouse functions! They can make the difference between good health and bad — not just of the heart, but overall. *A fatal flaw in the heart campaign was the dismissal of any essential role for the Omega 3 fatty acids,* all focus being placed on the ability of one fatty acid family, the Omega 6, to do the job by itself.

WE HAVE TO STOP THE BIG SEED OIL COMPANIES FROM EXCLUDING OMEGA-3's BECAUSE PEOPLE NEED US..



CG

There was no sound basis for this capricious decision, because science had long accepted that both were essential to growth and health. The new trend, you can bet your bottom dollar, tickled the heck out of the oil and margarine interests, who were using chemical catalysts to knock all the Omega 3 fatty acids out of their oils anyway, to reduce strong flavors. Remarkably fortuitous coincidence, wasn't it? — having the experts agree the Omega 3's weren't needed after all!

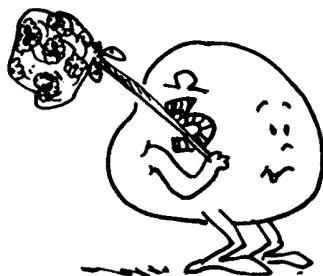
So Long, Omega 3's!

So all U.S. vegetable shortenings, as well as the margarines and oils promoted by the heart campaign, are made with all or most of the Omega 3 fatty acids wiped out by hydrogenation.

We also lost the Omega 3's from wheat germ, when white bread from machine-milled flour replaced the "real stuff" in every home. Beef doesn't have any Omega 3's worth mentioning, either, and we eat it now in large quantities, having cut way down on mutton, pork, or goose, which have a little, and fish, which has a lot.

Donald O. Rudin, M.D., director of the department of molecular biology of Eastern Pennsylvania Psychiatric Institute from 1956 to 1980, has been the first scientist to alert us to the implications of a national diet containing 80 percent less Omega 3's than the "traditional baseline evolutionary diet" that had nourished people for thousands of years.

.. AND WE DON'T LIKE BEING HOBOES.



CG

At the same time the Omega 3's were driven from our diet, our need for them has risen sharply, Rudin points out, because our cell membranes are becoming **packed with abnormal fats** — another "benefit" from 20th century hydrogenated oils, shortenings, and margarines. The defective "**trans-fatty acids**" have been found to replace as much as 15 percent of normal fatty acids in our tissues, causing distortions in cell membranes and interfering with critical cell functions. Far from being good for our hearts and arteries, some researchers believe all vegetable shortenings and so-called "polyunsaturated" margarines to be a **possible contributing cause of cardiovascular disease** [See F.L. 19].

Rudin believes the total effect of the removal of fiber, nutrients, and one whole class of essential fats from the diet of the 'best-fed people on earth' is incalculable. Society will probably only be able to assess it generations from now, in retrospect, when major nutritional wrongs have been redressed and a new concept of national health emerges. For those of us who'd like to begin the repair job right now, here are some emerging guidelines.

Fats to Help the Heart

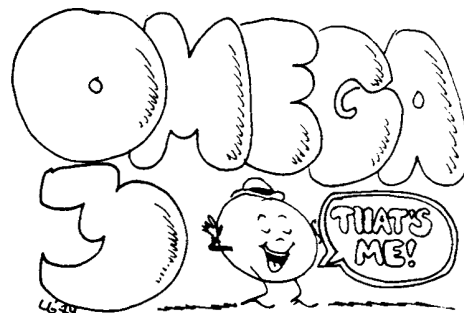
Marvelous backup studies for Rudin's views are accumulating, a number demonstrating that a simple diet **high in fatty fish and fish oils — the best animal sources of Omega 3's — can return high blood pressure to normal!** In others, we learn that similar regimens drive **dangerously high blood cholesterol and fats to acceptable levels**, and do so far better than low-

and no-cholesterol diets, and even better than Omega 6 oils! By this and other mechanisms, they may contribute to less accumulation of plaque on the walls of arteries.

Eskimos in remote areas of Greenland, who still largely depend as their ancestors did on a diet of fatty fish and sea mammals, have almost no heart attacks compared with modernized people. The abundant fat of their prey contains large amounts of the highly polyunsaturated Omega 3's, EPA and DHA, to provide warmth and flexibility in icy polar waters.

In Rudin's own pilot studies, **linseed (flaxseed) oil, the best available plant source of Omega 3's**, in amounts of one teaspoon to six tablespoons daily brought about unquestionable improvements in chronic cases of arthritis, bursitis, allergies, dry skin, head noises (tinnitus), irritable colon, and serious mental disorders! His soon to be published text on biomedical nutrition places in proper perspective for the first time the importance to man of the essential fatty acids in the whole biological scheme. Linseed oil contains the first fatty acid of the Omega 3 family (alpha-linolenic). Our cell enzymes can change it to the highly unsaturated Omega 3's, EPA and DHA, like those in fish, which protect against heart attacks.

The Omega 3's produce prostaglandins that balance those made from Omega 6's. Without this equilibrium, runaway production of certain Omega 6 prostaglandins upset normal function in our hearts, arteries, skin, joints, immune system, and brain! This is one reason why the "simple" measure of supplying missing Omega 3's in the form of oils from flaxseed and/or fish can have results of such surprising magnitude.



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Flaxseeds and walnuts, and the oils pressed from them, were widely available for ages in many countries and climates. (Flaxseeds were added to stone-ground grain in the breads baked for the armies of ancient Rome. Ironically, modern commercial "Roman Meal" cereals and breads contain *defatted* flaxseed meal!) Together with fish, shellfish, and fresh kelp or other sea vegetables, they remained for centuries as dependable sources of Omega 3's. *Rudin and now other scientists are saying that replacing this family of fats in our diet should be the first nutritional order of business.*

Fats and Ancestors

How best to go about it? If we want to assure ourselves of a balanced supply from *both* Omega 3 and 6 families, the *kinds* of fats we choose will be more important than amounts. Nevertheless, in the face of statistics hinting at more bowel and breast cancer in people consuming a lot of fats, it makes sense to find out what constitutes a 'safe' amount. If we explore our evolutionary background, we learn that eating a lot of fat on an everyday basis has little historical precedent (except Eskimos and their special adaptation to an icy environment). In pre-agricultural times, the type of game killed by early hunters was a lot leaner than later domesticated animals. Even after the agricultural era began ten thousand years ago, economic necessity dictated that prized fat meats such as pork, lamb, duck, and goose, usually be apportioned thriftily, while until 20th century industry made vegetable oils plentiful, they too had to be sparingly used.

Fiber and Fats

One problem with fats and oils is, the more we eat, the more *bile*

acids are released into the small intestine to emulsify them before digestion; and bile acids are able to turn into potentially cancer-causing substances as they move along in the large intestine. *Vitamin E, vitamin C, and fiber all have the ability to diminish the formation of these irritating compounds.* By speeding up movement of waste through the bowel, *fiber also lessens the time any noxious molecules remain in contact with vulnerable tissues.*

Food fiber also promotes growth of benevolent bacteria in the gut, the kind that discourage putrefactive ones and create a healthier, disease-resistant bowel "climate."

In traditional diets, the staple foods of whole grains, beans, and vegetables provided the nutrients and *ample fiber* to assure "safe passage" in the body of the fats from meats, butter, cheese, etc.

In Part 2, we'll consider ways of re-introducing Omega 3 fats in our diet, yet keeping overall calories and fats well within reasonable limits.



No Comment



Illustrations are by Clay Geerdes and other artists as noted.

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