

# The FELIX Letter

A COMMENTARY ON NUTRITION

NO. 18

## A HEROINE REVISITED

The struggle to come up with bottom-line truths in nutrition led me back to school after my children were grown and eventually to a degree in nutrition from U.C. Berkeley in 1977. The quest, however, is hardly over. Exposure to its complexities only reinforces the realization that, in nutrition, unequivocal truths — like the Holy Grail — may be just over the next hill . . . and the next!

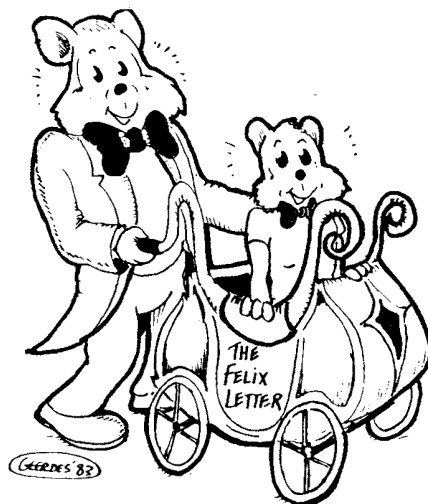
Today's bookstores crammed with "How To . . ." bestsellers by dozens of nutrition savants are a far cry from the 1950's, when Adelle Davis' books first hit the parched wasteland that was the prevailing state of lay knowledge in nutrition. Almost instantly, she became a very special heroine to me. With three small youngsters of my own and an even littler stepson as resident guinea pigs, I had a field day that lasted for years, proving and disproving nutritional theories with fine empirical rapture! (Those were the carefree years before I'd encountered experimental design, double-blind procedures, and the rest of the protocol that makes grown researchers weep, and I could complacently pronounce my studies unqualified successes!)

## Revolutionary Concepts

Adelle Davis, who died in 1974, was still my role-model when I entered U.C.'s nutrition department as an undergraduate in 1975. She herself had been a Cal graduate, had a master's degree in biochemistry and worked with doctors for decades as a consulting nutritionist. I was thus taken aback by the faculty attitude: her books might well have been *hard porn*, as far as they were concerned! She had never been forgiven by the academic nutrition community, it would seem, for triggering a rebellion (which showed no sign of letting up) against the revered practice of keeping research information buried in elitist journals until hell froze over or lofty judgment deemed it safe for release to the masses. It was because of Davis that a whole generation of *laypersons* was daring to ask probing questions, pre-empting the divine right of physicians to prescribe nutrient supplements and diets.

Her books had accomplished the impossible feat of stirring hundreds of thousands of people into exploring the *potential power of nutrition as a therapeutic instrument* and, simultaneously, to question medical and food industry dogma which permeated formal nutrition. It was this therapeutic potential that had originally drawn scores of gifted scientists into the field and sparked their efforts since the 1920's. Before World War II, researchers and physicians alike having witnessed remarkable effects in patients treated with newly discovered vitamins (e.g., in pellagra), were eager to continue investigations in their laboratories and clinical practice.

After the war, however, the pharmaceutical giants rose to dominance, their heavy imprint on the profession leaving less and less room for nutritional medicine. While the new wonder drugs dazzled the medical community, a burgeoning food industry and agribusiness were stamping their inimitable pattern on the research they underwrote in universities and institutions. Interest and funds in nutrition not directly tied to commercial use paled, and with them some of the confidence of its workers. A large number were drawn into industry-controlled research, where they busied themselves improving on nature. Others settled for handmaiden roles to medicine, accepting a meek back seat to those who made the *important* health decisions, i.e., surgery and drugs.



Having seen at first hand the standard indifference of the medical establishment even where effectiveness of nutrition was dramatic and undeniable, Davis fought for the right of nutritional professionals to get vital research information out of dead-ended archives and into practice, and to *re-establish the primacy of nutrition's role in prevention and treatment of disease*. In pointing out the new spate of iatrogenic illnesses, she was one of the first to take the magic out of "wonder" drugs and put it back in *nutrients*, whose wonders were the sturdy, non-boomeranging sort wrought by nature.

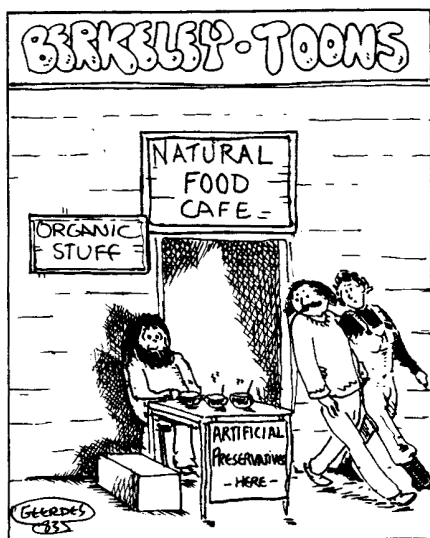
Ironically, having allowed its birthright to be co-opted (and diminished) by medicine and commerce, the nutrition establishment had so deeply accepted the philosophy of its 'captors' that any attempt by one of its own to advance the concept of nutrition as a primary therapy was seen as *sedition*! Since at Cal horsewhipping was out of fashion, the department did the next-best thing: they emblazoned Davis' persona and books with the scarlet letter "Q" . . . for quackery!

## Setting It Free

I hope they've softened their attitude since 1977. Adelle Davis may have bent a few rules, but she set in motion the beginning of the release of nutrition from the straightjacket imposed upon it by the food industry which manipulates it, and medicine which essentially ignores it. Challenging their usurpation of this discipline may turn out to be the healthiest thing yet that's happened to our national health.

This perhaps is an appropriate time to point out that it was NOT the quacks and food faddists, but respectable chemical and agricultural scientists who developed EDB (ethylene dibromide) as a soil and crop fumigant, creating the current chilling reality of carcinogen-tainted crops and grocery products. (In this regard, rather than succumbing to dread, it might be prudent to utilize the once-thought quackish measure, but now upheld in respectable circles, of adding fiber-rich foods, extra supplemental vitamin C, E, and the trace element selenium to help our body's detoxification system in defusing and eliminating products like EDB and its noxious cousins.)

U.C. Berkeley's department may be constrained by its misplaced revulsion at quackery and food faddism, mirroring the A.M.A.'s approach; nevertheless, it is an outstanding, tough, biochemically oriented training ground for nutrition workers, and a worthy research center. It cannot, however, qualify for monopoly on unequivocal *truth* in nutrition. As a student there I discovered that, as with all institutions, it can only offer the right to its PURSUIT . . . like that of happiness in the Declaration of Independence! The rest is up to us. ■



## INCREASING OMEGA 3'S

Since the "fatty acid" series of *Felix* Letters (Nos. 14-17), readers have been asking about linseed oil: where to buy it, how to find unrefined sources (without pesticides, yet!), how Omega 3 (W3) fatty acids are affected by refining, etc. As yet, I have no simple answer on where to buy even refined, let alone pesticide-free linseed oil, if there are no healthfood merchants in your area who carry it. Bottled linseed oil is not yet listed in several popular vitamin mail order catalogs. HOWEVER, many vitamin stores and mail order houses sell capsules labeled variously as free fatty acids, unsaturated fatty acids, essential oils, etc. I would suggest first asking if the capsules are linseed oil. If the clerk doesn't know, ask for a description of the contents in milligrams. If the capsule contains approximately three or four parts of linolenic to one of linoleic acid, it's probably linseed oil, for no other oil has this ratio. (For example, one vitamin line sells linseed oil capsules containing 500 mg linolenic and 167 mg linoleic, about a 3 to 1 ratio.) Ask the weight of each capsule in grams in order to determine how many capsules would be

equivalent to a teaspoon of linseed oil, *which weighs approximately 4.5 grams*. (Note: linseed contains some non-essential fatty acids as well.)

I have a hunch that within the year, we will begin to see linseed oil sold more widely. I've requested several suppliers of unrefined oils to add it to their line, but any real effect will come when their retail outlets report increased demand.

## Prepressed vs Refined Oil

In producing unrefined oil, seeds are fed into an auger, like a giant meatgrinder—the only heat arising from the mechanical pressure applied. The "prepressed" oil is then filtered through cotton cloths and transferred to drums for shipment. It is dark, strong-flavored, contains nutritive sediment, and has more vitamin E than refined oil. All the commonly sold light-colored, clear, sediment-free, bland flavored oils have been put through many or all of the usual lengthy refining processes involving heat and chemicals (whether they are termed "cold-pressed" or not). Fortunately, although there is a big decrease in vitamin E content, *the fatty acids are not seriously affected*, so refined linseed oil will have its W3 fatty acid mainly intact, according to two oil chemists I spoke to who routinely make these laboratory determinations.

## In the Interim . . .

The research literature on therapeutic use of W3 fatty acids is still sparse. I am looking forward to publication of Dr. Donald Rudin's book detailing his explicit experiences, to provide incentive to health professionals willing to explore this nutritional dimension. In the meantime, a logical course for individuals is to eat more foods and oils rich in W3 fatty acids (see *Felix Letter* No. 16 for tables) and to augment these with modest amounts of fish oils (codliver, salmon, MaxEPA, etc.), until clearcut guidelines emerge. There is a growing body of data on the usefulness of the W6 fatty acid, GLA; therefore using *Spirulina platensis* and evening primrose oil as sources may be wise although their present cost limits routine widespread use.

Canned non-smoked sardines and salmon, if one is alert to good buys, are inexpensive sources not only of W3 fatty acids, EPA and DHA, but of protein, iron, potassium, zinc, and of considerable extra magnesium and calcium from the softened bones — (PLEASE EAT THEM!). I find that rinsing the contents quickly (in the can) with cold water removes much of the added oil and salt, permitting me to use them freely as dietary staples.

Although green vegetables are very low in fat, a preliminary report from a Canadian study indicates that several commonly eaten ones have more alpha-linolenic (W3) than linoleic (W6) fatty acids. Green beans, broccoli, brussel sprouts, cabbage, romaine lettuce, spinach, onions, and parsley may average a modest 0.15 grams for each 100 grams (3½ oz.) of the raw vegetable. Although this is a small amount, it's an additional valuable factor, besides lavish vitamins and minerals, that these vegetables provide. Read on to learn about another: fiber! ■



## NATURE'S BROOM

Research literature on fiber in foods has proliferated greatly in this decade, and, yes, I agree that emphasis on this food factor is laudable, but I'm a little cynical about the form some of the progress has taken. Scientists finally agreed that until they could find some degree of agreement on what constituted fiber, they would never get consistent and reproducible results in the kinds of studies so dear to their hearts. So a great deal of time and expense has gone into the analyses and definitions of fiber *components*. Now that these have been identified and classified, more or less, in the world literature, the big push in certain circles is to determine WHICH of these components (lignin, pectin, gums, cellulose, or hemicellulose which is not cellulose at all and is now called "non-cellulosic polysaccharides") may be individually responsible for the newly acknowledged salutary actions of dietary fiber as a whole — the "worthiest" to be isolated and featured in experimental medical programs with diabetics, heart patients, and so on.

The assumption that the *parts* rather than the whole will do a better job is the kind of logic which escapes me, but which characterizes so much of research! The good news is, enough *logical* studies exist to demonstrate that eating *whole foods* high in fiber can benefit the human organism in many ways beyond simple relief of constipation. Denis P. Burkitt, a British doctor who worked in Africa and was one of the pioneers in observing long-range effects of native fibrous diets in preventing ailments associated with western foods, has written a marvelous chapter, "Dietary Fiber," in the book *Medical Applications of Clinical Nutrition*, edited by Jeffrey Bland (Keats Publishing, New Canaan, CT, 1983). He cites the work of British naval physician Thomas L. Cleave, whose studies in the 1950's attributing many degenerative diseases to the loss of fiber in diet were received on the whole with a lifted eyebrow by the profession. About a decade ago, though, the results of worldwide epidemiological and laboratory studies began strongly to bear out a number of his and Burkitt's contentions.



### The Benefits

It is now suggested even by conservative scientists that foods high in dietary fiber may protect us against: *diverticulosis* (out-pouchings in weak areas of the bowel walls that can become inflamed); *cardiovascular disease* (fibrous foods lower blood fats and many also improve abnormal blood clotting mechanisms); *cancer of the bowel* (fiber decreases intestinal transit time of fecal material, so that potentially irritating metabolic waste products are removed prudently and quickly); *maturity-onset diabetes* (certain food like beans strongly improve blood-glucose control); also

*gallstones, appendicitis, hemorrhoids*, and even, as Cleave suggested 30 years ago, *obesity*! Burkitt observes tartly:

*The recent reports of the Royal College of Physicians in England on 'Medical aspects of dietary fiber' has raised the subject out of the realm of food quackery to which it was once believed to belong.*

Another of his comments:

*It is tragic that fiber should ever have been designated 'roughage' in the mistaken concept that fibrous foods might be abrasive in the colon. The reverse is, or course, the case, and much suffering could have been avoided if the more appropriate term 'softage' had been used instead.*

### The Seat of Discontent

The softening and bulking action provided by fibrous foods alleviates the abnormal pressures required to propel the small, dry stool-products of a refined diet through the large intestine — pressures which cause diverticula to form, and in the rectum may lead to an equally common modern scourge: hemorrhoids. Burkitt offers a theory about *hiatus hernia*, another anomaly commonly encountered in western cultures but rare elsewhere, in which the junction of esophagus and stomach are placed upwards above the diaphragm, and in which irritating acid reflux from the stomach into the esophagus may occur. Not only does he consider today's refined-carbohydrate diet at fault because dense, small stools require unnatural straining daily during bowel movements, but also believes western *toilet seats* severely compound the problem! He writes:

*The valsalva maneuver, comparable to straining at stool, raises intraabdominal pressures to a greater extent than does weight-lifting. When sitting on a raised toilet seat, intraabdominal pressures during this maneuver have been shown to be around 200 cm H<sub>2</sub>O, while those above the diaphragm were under 70 cm, making a differential of about 130 cm [of pressure]. It is easy to appreciate how these pressures frequently exerted could force the gastroesophageal junction upwards . . . When squatting at stool in the traditional manner rather than sitting on a raised western type toilet seat, intraabdominal pressures are much lower, and this may well be an additional factor protecting Third-World communities against the development of hiatus hernia.*

In this regard, a colleague recently described to me the impressive improvement she has noted in her chronic hemorrhoid problems, after she began *squatting* rather than sitting on the toilet, upon the advice of a yoga instructor! This involves divesting oneself of undergarments, panty hose, slacks, etc., in order to carry through the logistics of placing one's *feet* rather than one's rear on the toilet; and it also requires nearby sturdy objects to hold onto while performing this perilous balancing act! Nevertheless, she assures me the simplified, regular ritual has solved a problem that heretofore no dietary measures alone had alleviated. It is since she adopted this technique that the real value of her good, fiberful diet has become apparent, she told me, since she now has no discomfort whatsoever during bowel movements and the hemorrhoids remain quiescent as long as she maintains her new habits.



### Adding "Softage"

In addition to encouraging the eating of foods high in dietary fiber, physicians like Burkitt and Cleave advocate a tablespoon or two daily of bran, either as cereal or as "miller's bran," while others note good results with benign mucilaginous substances like psyllium seed husks, which are a traditional Asian remedy. Flaxseed, too, can provide softening and bulking action; one or two tablespoons can be chewed whole, ground, or soaked in a little warm water. (They are the seeds from which linseed oil is pressed.)

From the ocean, many sea vegetables such as kelp and other edible algae provide polysaccharides similar to cellulose from plants, in that our digestive enzymes cannot break them down. They are thus practically calorie-free and their cell walls, softer than cellulose, have a soothing, regulating action in the intestine which Japanese scientists have noted.

## Fiber Foods You Can Love

The new classification accepted by international scientists, "dietary fiber," includes all essentially nondigestible food elements such as cellulose, noncellulosic polysaccharides, lignin, pectin, and gums. It is a broader and more useful concept than the older term, "crude fiber," which included mainly lignin and cellulose, because each of the additional components has been found to play an essential part in the total action of fiber in our systems. Tables of dietary fiber in foods vary greatly as yet, but the following foods are *among* the best sources, not the *only* ones by any means. (They are not in any special order.)

**DRIED BEANS:** All dried Beans, Peas, Lentils  
**FRESH LEGUMES:** Fresh or frozen Peas and Lima Beans

**LEAFY VEGETABLES:** Broccoli, cooked or raw Cabbage, Collard greens, Parsley, Watercress, Turnip greens, Beet greens, Kale, Swiss Chard, Spinach, Brussel Sprouts, Lettuce, Bok Choy

**ROOT & OTHER VEGETABLES:** String Beans, Cauliflower, Tomatoes, Cucumber, Peppers, Celery, Radishes, Carrots, Beets, Turnips, Squash, Zucchini, Eggplant, Asparagus, Mushrooms, White Potatoes (more with skins), Yams or Sweet Potatoes (skins too)

**DRIED FRUIT:** Figs, Apricots, Dates, Prunes, Raisins

**BERRIES:** Blackberries, Strawberries, Boysenberries, Raspberries, Currants, Gooseberries, Blueberries

**WHOLE GRAINS:** Oats, Rye, Buckwheat, Barley, Wheat, Brown Rice, Millet; and breads, noodles, crackers, muffins, etc. made from them

**FRUIT:** Apples, Pears, Plums, Apricots, Nectarines, Peaches, Tangerines, Oranges, Grapefruit, Cherries, Bananas, Papaya, Mangos, Watermelon, Cantaloupe, other Melons, Cranberries

**NUTS & SEEDS:** Walnuts, Chestnuts, Almonds, Pecans, Brazil Nuts, Filberts, Peanuts, Coconut, Sunflower seeds, Pumpkin seeds, Flax seeds

The emerging picture I trust is unmistakable! How can we NOT gain in health from such foods? Many had been overlooked as significant fiber sources under the old "Crude Fiber" designation, until pectins, gums, etc. were found to confer major benefits of their own. (How farseeing of nature to have packaged them all together in the first place.)



*Defusing the Bean*

Beans, a champion fiber food, have the ability to normalize *blood sugar* for maturity-onset diabetics, as noted, and are helpful in normalizing *blood fats* for heart patients. They are also fine sources of folic acid, potassium, magnesium, etc. and of protein when eaten with grains. In *Felix Letter* No. 3 (January 1982), I described a newly researched method of preparing them so that their "flatulence factor" is greatly reduced, expecting that this information would soon be extracted by industry from the original Utah State University laboratory reports and a housebroken bean would be in our supermarkets by now. To my knowledge, this hasn't happened, so

I'm repeating the method I've found effective in making it possible for bean-eaters everywhere to gain the internal peace that passeth all understanding!

Rinse, then soak whole beans (garbanzo, navy, blackeyed peas, etc.) in water in a one- or two-quart jar for 4 or 5 hours. Drain and spread beans out in the jar as you lay it on its side and cover it with a cloth. Thereafter, rinse several times a day with cool water to keep beans sweet-smelling, draining them and laying jar on its side again and covering with cloth. In a few days, little white "tails" will appear, signifying sprouting. Twenty-four hours after most of the beans have developed these rootlets, usual cooking can take place. Less water and cooking time are needed, but otherwise flavor and texture will be altered very little.

Sprouting causes the indigestible "culprit" sugars (oligosaccharides) to be quickly converted by the living bean's enzymes into simple sugars, to make sure there is fuel for the little sprout to grow until its green leaves develop and can begin making fuel from sunlight (photosynthesis). For this reason, incidentally, market-size bean sprouts (which are modest fiber sources) have a low "flatulence factor," and additionally have converted some of the glucose from the stored oligosaccharides into *vitamin C*. As the young shoot reaches for the sun, the vitamin can protect it from oxidative damage caused by certain wave lengths of light!

Does General Foods care to come up with a better scenario! ■



*Illustrations are by Clay Geerdes.*

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