the FELIX Letter

A COMMENTARY ON NUTRITION

No. 101 — 1999

QUESTIONS...& A FEW ANSWERS

In gratitude for the shower of splendid data from you readers in the form of mainstream journal articles and news clippings from all over the U.S., currently waxing lyrical about stuff like omega-3s that's old hat to *Felix Letter* aficionados, I'm devoting part of this issue to questions I'm most frequently asked.

Q: Flaxseed meal: What's the best way to get it?

A: Most health food stores and vitamin catalog firms offer both whole organic flaxseed and organic ground flaxseed (flaxmeal for short, also known as milled flaxseed). Milled flaxseed is a convenient time-saver. On the other hand, if you buy the whole seed and grind it yourself, you'll save some money. A small inexpensive electric coffee mill grinds seeds, nuts, cinnamon sticks, etc. I run the seeds in the mill a few seconds -- just long enough to get meal that doesn't clump wetly. A natural bristle paintbrush (dry) is useful for brushing out crumbs of flaxmeal.

Q: How much omega-3 (w3) does it have, in terms of daily requirement?

A: Because w3 content varies in different flaxseed crops, the following is a generalization, but a ***rounded tablespoon*** of milled flaxseed contains ***about 2 grams of ALA*** (alpha-linolenic acid, the primary essential w3). In *FLs 94/95*, based on recommendations by the insightful Japanese researcher Dr. Harumi Okuyama and his group, I suggested a day's intake of *all* w3s -- including EPA and DHA found mainly in aquatic foods -- of about **4 to 6 grams.**

Again, based on Okuyama's and Dr. Artemis Simopoulos' work (see *FL#96*), this modest w3 intake will do its job in your body ***only*** if you're not drowning it with fats and oils of the omega-6 (w6) persuasion! Ideally, **no more than a 3 to 1 intake ratio of w6 to w3 fats and oils allows all body functions to hum along nicely.** Last page of *FLs 94/95* shows foods that make it easy to achieve this ratio.

Q: Does it get rancid easily?

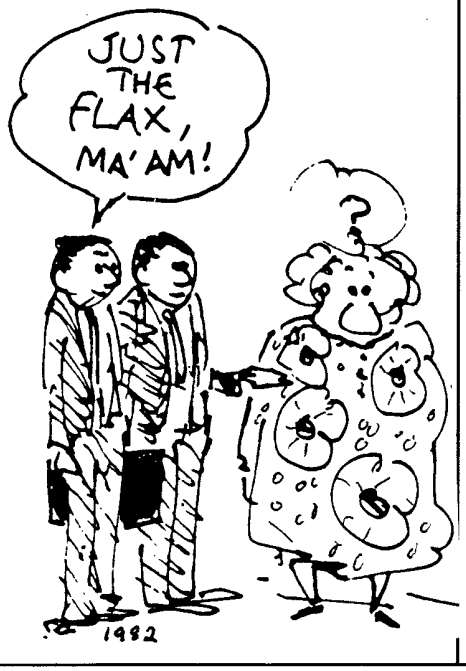
A: I keep hearing the most alarming stories of how quickly flaxmeal turns rancid -- that the only way to prevent rancidity is to grind the seeds just before eating them. If I had to do this, I wouldn't bother with flaxmeal! Careful laboratory studies find flaxmeal to be quite resistant to oxidation, i.e., rancidity, because it's still packed with the whole seed's antioxidants that aren't destroyed or removed by milling. One study showed essentially no oxidation in either whole or ground flaxseeds after 44 weeks, whether refrigerated or *at room temperature. There was no loss of the most oxidizable molecules in flaxmeal: the w3s.*

As a matter of fact, *heating at boiling point (100°C or 212°F) for one hour caused no change in fatty acid composition and thus no loss of w3s.*

Heating whole or ground flaxseeds for one hour at 350°C, or **662°F**, caused very minor oxidation. That's good news for you bread-, muffin-, or cookie-bakers who add flaxmeal. Of course, baking requires much lower temperatures than 662°F.

I keep my flaxseeds and flaxmeal in the fridge for convenience, that's all. But folks can grind up a batch or buy some ready-milled and take it to work, or travel with it, without fear of losing precious w3s (or w6s, for that matter).

Caution: Now flaxseed *oil* -- that's another matter. The oil oxidizes easily, even with the best bottling practices. I keep unopened flaxseed oil in the freezer, then transfer it to the fridge after opening it. If any is left after 2 months, I dump it. Sorry, I know it's precious and expensive.



Q: How do we use flaxmeal?

A: Start with one teaspoon a day. This may have a desirable, mild laxative effect, but some folks react more strongly, in which case cut back to 1/2 teaspoon. Gradually increase amount, but stay in a comfort zone. I know friends who easily handle several tablespoons a day, but I can't! And, of course, some folks are allergic to flaxseed.

You can add flaxmeal to fruit juice, cold or cooked cereal, soups, casseroles, or cottage cheese. You can add it to bread dough, or to pancake, waffle, cookie or muffin batter.

Even young children do well with appropriately small amounts, generally. They tend to poop more, of course!

[From *FL 48* in 1989]: "When we eat flaxseed or meal, its soluble fiber encourages bacteria normally living in our gut to produce ***lignan and butyrate*** -- substances that exert anti-cancer effects on the colon." Since then, studies show protective effects of flaxseed on mammary and prostate cancers as well.

Q: What about cyanide in flaxseed, as well as B6 antagonists?

A: Flaxseed contains cyanogenic glucosides, plus an enzyme (linase) that can hydrolyze the glucosides to release hydrocyanic acid, i.e., cyanide. Wow! Scary? Dear folks, it depends on one's viewpoint. I tend to favor that of the late rebel, Ernst Krebs, Jr., who said the cyanogenic glucosides or glycosides (also called nitrilosides) in so many natural foods enjoyed by humans, animals, birds, etc. were so essential to health that he referred to them as vitamin B17. Humans and fellow-creatures are able to subdue toxicity of small amounts of cyanide by slapping on a sulfur molecule (from sulfur amino acids). The detoxified molecule, ***thiocyanate, is a normal constituent of your blood, saliva, and urine.***

Krebs and others said cyanogenic foods, as well as those with pre-formed thiocyanate, rather than posing toxic threats, actually (**a**) help to keep blood pressure normal (thiocyanate was used medically in the '30s & '40s for hypertension); (**b**) help to protect the gut from parasites and other pathogens (formerly used medically for dysentary); (**c**) help to discourage cancerous growths; (**d**) help to reduce anemia in persons with sickle cell genes.

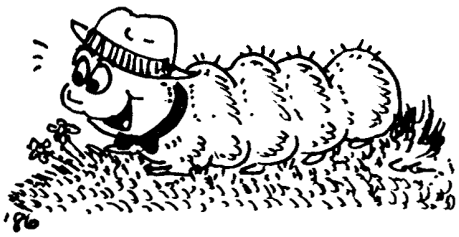
Cyanogenic foods include blackberries, huckleberries, raspberries, millet, buckwheat, manioc (cassava), mung bean sprouts, alfalfa sprouts, clover, common grasses preferred by domestic and wild herbivores, and seeds of apricots and apples.

Pre-formed thiocyanate exists in many edible plants, e.g., the cabbage and broccoli family. Scientists currently are investigating anticancer potential in broccoli sprouts. Do you see what I mean? Are we talking sinner, or saint?

In any event, the flaxseed scientists, who don't yet share this still revolutionary concept (but just wait a few years, readers!), tested volunteers to whom they gave **50 grams a day of flaxmeal**, baked into muffins, for four weeks. There was a modest increase in thiocyanate excretion in urine, but no toxicity whatsoever. (The subjects pooped somewhat more than before.)

Now, 50 grams of flaxmeal is a *whopping* dose. A tablespoon of the meal weighs about 9 grams, so these folks were getting more than 6 tablespoons a day. [Talk about sweeping with Nature's Broom.]

As to flaxseed's anti-B6 factor, deficiency problems arise only when flaxseed or flaxmeal forms ***more than 12%*** of farm animals' feed. A deficiency is highly unlikely to occur from your few tablespoons. But I'm a believer in daily supplemental vitamins and minerals, to prevent (unlikely) B6 loss. ❐



ACID-BASE SEE-SAW

Q: I've been gradually adding more meat, fowl, and fish to my largely vegetarian diet. Will this make me lose calcium? I'm concerned about osteoporosis.

A: You may excrete more calcium (in urine) than before, but chances are good you'll absorb more calcium from the gut, so your *net* calcium absorption can end up higher (Kerstetter et al., *AmJClinNutr,* Oct '98). Just as I was writing this, my January '99 issue arrived with a nice study by R.G. Munger et al. showing that in over 32,000 postmenopausal Iowan women (median age 63), those who suffered hip fracture (44 women) ate significantly *less* protein, *less* animal fat, *more* vegetable fat and oil, and more carbohydrate than the ladies who didn't get fractures! The 44 ate lots less beef, lamb, or pork, too. And they were *thinner* than the bunch with sturdier hip bones. (We older beauties thrive on Rubenesque padding: it cushions bones and makes estrogen for us.)

Hooray for Fruits 'n Veggies!

Here's one secret for strong bones: you have to outsmart any attempts by your body *to rob calcium from your skeleton in its effort to neutralize potentially harmful acids from high phosphorus and sulfur foods,* i.e., flesh foods and grains.

You counter this by wisely consuming foods (and supplements) *high in alkaline minerals.* They neutralize these acids so they can't damage delicate kidney tubules, etc. Most vegetables and fruits (even acidic fruits) provide some calcium, potassium, and magnesium to help transform phosphoric and sulfuric acids into tamed salts.

By the way, sea vegetables (e.g., hijiki, nori, wakame) are awesomely rich in alkaline-forming minerals. Here in the Bay area they're easy to find (dried) in Asian and health food stores.

"Mexican parsley," or cilantro, not only is loaded with alkalinizing minerals but may help us to get rid of mercury that can leach out of amalgam fillings. My new habit is to keep a bunch washed and fresh in my fridge, and to chomp on a mouthful (looking like Clarabelle Cow) when the urge strikes. ❐

MAGIC UNCRAMPING QUICKIE

I just learned a way to stop nasty cramps in legs, thighs, or toes that may sneak up on us during sleep. Pinch together very firmly with thumb and forefinger the flesh between nose and lips. Continue pinching hard, until cramp lets up. It may take a few minutes. (Probably has to do with acupressure points but I haven't asked the experts yet.) It's been a lifesaver for me. Dear Abby says in her column it worked for her, too. ❐

Freedom from Fear of Fats!

Comely author Sally Fallon is a wife, mother of four, and upsetter of dietary applecarts [some of mine, too] on a G-r-r-a-a-n-d Scale. We met finally, after years of sharing ideas via letters and literature, at her all-day nutrition seminar January 30th in San Francisco. I do believe many in the audience are reeling still, especially those who worship at the Plenty of Soy & No Cholesterol or Saturated Fats shrine!

As in her 1995 book, ***Nourishing Traditions,*** written with distinguished trans-fats researcher Mary G. Enig, Ph.D., and Marion Patricia Connolly of priceless Price-Pottenger Nutrition Foundation (PPNF), Sally continues to knock down shibboleths with documentation to spare.

She tells us, for instance, that **saturated fats** are old buddies of humankind: teamed up with long-chain w3 and w6 phospholipids, cholesterol, vitamin E, and protein, they make up about 50% of every cell membrane in your body. You don't *have* to ingest saturated fats, since your body makes them readily from ingested starches, sugars, and fats. On the other hand, when you eat them you not only save your system extra work, you also insure better absorption of fat-soluble vitamins A, D, E and K.

Did you know your heart prefers stearic acid, a saturated fat, as its energy fuel? Sally says new research shows saturated fats also are needed for normal bone modeling; and they *reduce* blood levels of Lp(a) that are associated with ominous buildup of plaque in arteries.

Friendly Natural Fats

Saturated fats come in different molecular chain lengths. Short- and medium-chain ones are very easily digested, even by infants and invalids. Mother's milk is high in saturated fats of all chain lengths, including medium-length lauric acid. Sally tells us lauric acid has unique antiviral and antimicrobial activity, which protects nursing babies -- nature is so smart!

Coconut oil is especially rich in lauric acid. People ate coconut, palm, & palm kernel oils for millennia, without developing a smidgen of artery blockage even though tropical fats are mostly saturated. Same is true for natural, largely saturated animal fats, and for high cholesterol organ meats, butter, and eggs. Of course, your ancestors *also got plenty of omega-3s,* from aquatic foods, wild game, and plants like purslane and flax.

(**Note:** Breast milk is super-rich in cholesterol. Infants need it for all tissues and especially for the brain.)

A Modern Medical-Made Panic

Heart attacks that felled young middle-aged men in the prime of life had reached epidemic levels by the 1950s, scaring the wits out of everyone. One medical theory began to dominate, picking up steam in the 1960s: high blood cholesterol was gumming-up men's arteries; thus, foods high in saturated animal fats and cholesterol had to be ***the*** culprits.

The answer? Cut out everybody's favorite foods, including eggs and butter, don't even dream of eating organ meats! and make sure to load up on heart-saving corn-oil margarine and polyunsaturated oils.

Thus was born **The High-Cholesterol Terror!** Most of the population hasn't been able to breathe a comfortable breath re cholesterol and animal fats since!

The experts and policy-setters neglected to tell us this type of heart disease *was extremely rare until around 1930.* That was about 20 years after the first hydrogenation plant opened in the U.S., creating irresistible white ***vegetable*** shortenings that were much cheaper than butter and, unlike lard, *never* spoiled. Animal fats intake plummeted: the Crisco era was born!

Donald Rudin, M.D., and I describe in *OMEGA 3 OILS* (Avery, 1996) the greatly reduced intake, as the century wore on, of traditional, *really* heart-protective nutrients, among them w3s from fish and game. Sally cites study after study, showing how deeply flawed the evidence for the cholesterol theory was and still is, and how often the research actively contradicts it! (The section on this in her book is priceless. Call PPNF to get on the waiting list for the new printing: 1-800-366-3748.)

We need gutsy truth-seekers like Sally Fallon and Dr. Mary Enig to help restore people's confidence in time-honored foods like eggs, butter, tropical fats, and organ meats. It will be a tough haul, battling the Big Kahunas who have vested interests in keeping The Terror going.

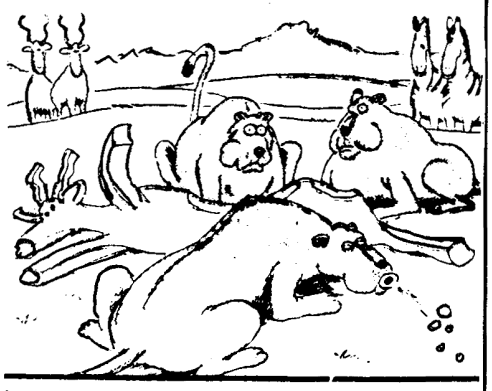
Rescuer... or Troublemaker?

One of these is the soybean industry, a large part of it controlled by huge multinational outfits like Archer Daniels Midland Company. A long, relentless campaign by Center for Science(?) in the Public Interest (??) succeeded finally in bludgeoning major fast-food chains and the food giants into dumping "killer artery-clogging tropical and animal fats," and substituting "cholesterol-lowering heart-saving polyunsaturated soybean oil" in their products.

Alas, as I've written before, the food-makers soon discovered soybean oil was a dud at reproducing the expected crispiness and texture for their fried foods, crackers, chips, pie crusts, etc. So, resourceful food engineers partially hydrogenated the oil. Commercial food purveyors who balked at switching were, and still are, crucified in CSPI's publication, *Nutrition Action.* To this day, its routine warnings on killer heart-attack foods always beam on tropical oils and animal fats, including butter, and all foods containing them.

Now we've got a generation of Americans who've been stuffing **trans-fats** into their cell membranes for about 15 years. Nothing could be better for the brains and bodies of nursing babies and growing kids, right? Thanks for nothing, CSPI.

The Far Side/*©Gary Larson, 1991*



In sudden disgust, the three lionesses realized they had killed a tofudebeest — one of the Serengeti's obnoxious health antelopes.

Q: Am I making a wise choice to cut back on meat and dairy, and feed my family and me lots more soy milk, tofu, etc? Some doubts are creeping in.

A: Thanks to an accumulation of new data, I no longer think of soybean products as I once did as purely benevolent alternatives to meat-eating. I also question something I accepted just a short while ago: that phytoestrogens in soybeans are altogether benign. Well-documented cautions are cropping up in both alternative and conservative mags and Web sites. They add weight to Sally's and Dr. Mary Enig's powerful warnings in their book and articles.

The Chinese first cultivated the soybean thousands of years ago for its nitrogen-fixing qualities, but only began to use it as human food centuries later, not until they developed fermenting techniques to reduce soybean's *exceptionally high levels of trypsin inhibitors and phytates.* In unfermented soy products, these *antinutrients* greatly hinder your absorption of protein and minerals. Sally says fermented soy foods such as miso, natto, tempeh, and soy sauce are largely free of antinutrients, but tofu, bean curd, soy milk, etc. are not.

Jolly Phytoestrogens!

Some years ago, I began to see articles about dazzling potential benefits from isoflavones (genistein and daidzein) -- the phytoestrogens in soybeans. In theory, these 'estrogen mimics' might augment dwindling estrogen activity of menopausal women. Conversely, in younger women the phytoestrogens might downplay the effects of too much estrogen by occupying some of the estrogen receptors, for example in breast tissues.

Research was, and still is, sketchy. Yet I'm now seeing a mighty PR blitz to peddle soy isoflavonoids--in soy foods and in newly isolated supplements-- as God's gift to women for preventing menopausal discomfort, osteoporosis, and breast cancer.

If you suspect the soy industry, including Archer Daniels Midland (ADM), behind some of the blitz, you're right. The Fall 1998 issue of *Health & Healing Wisdom,* PPNF's quarterly edited by Sally, has a blazing article, "Soy Isoflavones--Panacea or Poison?" by New Zealand researcher Mike Fitzpatrick, Ph.D.

He explains why the FDA should *not* grant GRAS (Generally Recognized As Safe) status to soy isoflavones, as requested by ADM. For one thing, the original soybean was a different species from the modern cultivar, did not form a significant part of Asian diet, and its isoflavone content is unknown. Therefore, writes Dr. Fitzpatrick, ADM's claim that these isoflavone components have been consumed safely by millions of humans for over 2000 years is totally unsubstantiated.

As to ADM's claim that published studies indicate no toxic or adverse health effects in either animals or humans, Fitzpatrick writes: "It is difficult to reconcile these statements with published scientific literature, which is replete with reports of adverse effects and toxicity of isoflavones at dietary levels....Reproductive effects, infertility, thyroid disease or liver disease due to dietary intake of isoflavones had been observed for several animals including cheetas, quail, mice, rats, sturgeon and sheep." In humans, adverse effects include goitre and hypothyroidism.

Most important, new studies hint at soy's estrogenic effects not being all that harmless in adult women. In fact, soy isoflavones are called "endocrine disrupters" as they can interfere with a woman's menstrual cycle for as long as three months after ingestion.

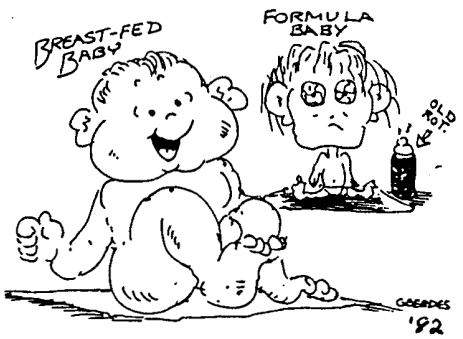
Moreover, Fitzpatrick says there's scanty solid evidence of protection by soy isoflavones against breast cancer, and some real concern from a 1996 study that they actually may *increase*the risk.

(Ouch! Are any more of your or my nutritional applecarts going to be overturned?! I'm grateful my interests, unlike ADM's et al., lie only with getting at the truth.)

To me, the most chilling item in Fitzpatrick's article refers to an infant formula study in the July 5, 1997 *Lancet*. Professor Kenneth Setchell & colleagues at Children's Hospital Medical Center in Cincinnati, Ohio, tested the isoflavone contents of 25 samples from **5 major brands of soy-based infant formulas.** The researchers then compared isoflavone concentrations in plasma, etc. of twenty-one 4-month-old infants fed as follows: seven exclusively on soy-based infant formula, seven on cow-milk formula, and seven on human breast-milk.

Findings: babies on soy got daily exposure to phytoestrogens *6 to 11 times higher on a bodyweight basis* "than the dose that has hormonal effects in adults consuming soy foods." Dr. Setchell doesn't think it's funny. He writes: "Circulating concentrations of isoflavones in the seven infants fed soy-based formula were 13,000 to 22,000 times higher than plasma oestradiol [an estrogen] concentrations in early life, and may be sufficient to exert biological effects, whereas the contribution of isoflavones from breast-milk and cow-milk is negligible."

Setchell points out that "in addition to acting as oestrogen mimics, isoflavones have important non-hormonal activities." Genistein, for example, "interferes with cell signal-transduction pathways. The ingestion of high concentrations of phyto-oestrogens has adversely affected reproduction in several animal species...."



What are we doing to our babies!! Editor Sally offers her own thoughtful comments in this issue. Fitzpatrick's scholarly spotlight on soy is invaluable. **Note:** You can order any article in a back issue for $2.50 from PPNF, P.O. Box 2614, La Mesa CA 91943-2614. PPNF members get 4 journals a year, 10% discount on books, video & audio tapes in their catalog, & health care professional referral service. Phone 1-800-366-3748 or Email: info@price-pottenger.org for information. ❐

Easy LBNGHG* Recipes

*Low-budget, non-gluten, hunter-gatherer

Clara's Mishmosh Mulligan!

•Lamb necks or other cheap lamb cuts with bone
And/or
•Chicken parts (organic if possible), i.e., backs, necks, wings. (If you're using the whole bird, save thighs, breasts, giblets, etc. for later.)

Bring to boil a large pot of water containing a dash of vinegar. Add either, *or both*, lamb and chicken parts and turn down heat. (Some cooks remove grayish stuff that floats to top.)

Cover and simmer *at lowest possible heat* for anywhere from 3 to 6 hours. The idea is to soften connective tissue and bone (vinegar helps in this), so the broth will be filled with collagenous substances and bone minerals -- ancient remedy for arthritis and osteoporosis, folks!

At end of long simmering, turn off heat. Pour off broth into a container. Add ice cubes to broth and put container in freezer for about a half hour. Remove layer of solid fat on top, return broth to stew, resume heating.

Special Note: I am *not* a saturated-fat hater. On the other hand, the lamb and chicken contain enough to satisfy most needs.

Now add:
•Fancier chicken parts
•Any favorite diced starchy roots or tubers, e.g., potatoes, yams, taro, cassava
Or:
•Any favorite nongluten grains, i.e., millet, rice, quinoa, amaranth, or buckwheat
(In *Nourishing Traditions,* Sally Fallon says to soak all grains overnight before cooking -- 1 cup grain to 1 cup water, plus 2 tablespoons whey, yoghurt or buttermilk. Soaking grains in acidulated water is a traditional way to improve digestibility and neutralize antinutrients such as phytate.)

Then add:
•Lots of parsley
•Your favorite veggies
•Seasoning - your choice. I use ginger, turmeric, oregano, garlic; salt to taste; a little honey, maple syrup, or unrefined cane sugar.

Simmer another hour. Serve (with broth) in soup dishes.

If you're an unregenerate HG type like me, and no one's watching except other companionable HGs, you'll chew up and swallow the softened bone ends.

LBNGHG snacks

My daughter and son-in-law taught me these:

•Slice any **raw green or yellow summer squash or zucchini** into 1/4 inch slices. Spread out singly, bake at moderate heat on olive-oiled, coconut-oiled, or buttered baking sheet until golden brown. Seasoning isn't necessary -- but some folks use garlic, salt, etc. Make a big batch -- they're good cold or warm.

•Peel & slice raw **potatoes** and/or **sweet potatoes** into 1/4 inch slices. Spread out and bake at moderate heat on baking sheet, greased as above, until golden brown. Takes longer than for squash -- about 30-40 minutes. Seasoning optional. ❐

Dear Beloved Subscribers!

An offset print shop in her neighborhood runs and folds each issue of *The Felix Letter.* Two kids across the street from her do the major stuffing & sealing at Mailing Crisis time. Other than that, the newsletter is a cottage industry exploiting the erratic and at times grudging services of a researcher, editor, Mac *mayven,* paste-up plodder, secretary, and cleaning lady, with no union to protect her. Her lot would be much easier if she smoked and drank, like a *real* writer. Instead, she worries and haunts the fridge. She *tries* to get out six issues a year, but can't always. (Be grateful -- you all get way too much stuff to read!)

So, don't panic if extra months go by *sans* newsletter. Eventually, you'll get your six (or 12) issues, some as 8-page double issues. The lady has been knocking them out for almost 18 years and it's *still* a labor of love. Besides, she's hopelessly addicted to the thrill of chasing down obscure research gems, more so if they happen to ruffle feathers of Nutrition Policy Experts. Keep sending news clippings, journal articles, etc. to augment her stash. And ***please*** let her know if you're moving [or have died, hah-hah!], because the post office will neither forward nor return misaddressed bulk-mailed *Felix Letters*, but throws them away, leaving her clueless. ❐

Illustrations are by the late Clay Geerdes and other artists as noted.

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