

The FELIX Letter

A COMMENTARY ON NUTRITION

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DEGREES OF WISDOM

Before World War I, two young immigrants from tiny Russian villages met for the first time at a social evening in New York hosted by friends from the girl's *shtetl*. She was a rosy-cheeked, full-busted redhead, he a dark-eyed romantic who worked the typical 72-hour week of that era, wrote Yiddish poetry, and had gotten himself into a sticky tangle with a married lady. The *zoffig* redhead fell for him like a ton of bricks. Within weeks the young man, perhaps dreaming of creating a family in his new land but more likely desperate to escape from his wedded siren's clutches, proposed. Alas, my poor Papa spent most of the half-century of their union rueing it, but my sweet Mom loved him to the end of her life.

Although my brother and I were depression kids we didn't feel poor because no one lived 'fancy' except in movies. Oh, sure, some boys had niftier baseball mitts, and my snooty classmate Ruth showed off her angora sweaters -- but at nine years old I *knew*, having absorbed old-time socialism and love of justice from mother's milk, that Ruth's father-the-capitalist got rich only by underpaying and exploiting his workers!

With no formal education of their own, our parents imbued us with a bone-deep respect for learning. My brother, whom I hero-worshipped (still do), worked his way thru college, survived action in the Pacific as a naval lieutenant JG in WW II, got his PhD, and became an economics prof at a big university. (Mom and Pop nearly expired from joy.) Meanwhile, the kid sister was too busy working, marrying, having babies, divorcing, remarrying, mothering and stepmothering, to think about degrees.

A Prophetic Pilot Study

I was well into middle age by the time I got my priorities straightened out and completed a Bachelor of Science in UC Berkeley's nutrition department. Four years later, publishing *The Felix Letter* in 1981, I was taking on heavy guns in the medical world without an MS or PhD after my name to shield me. But scouring obscure research literature led me to the awesome concepts of Donald O. Rudin, the MD who conducted a 1- to 2-year human pilot study, not double blind but controlled -- the first to monitor effects of omega-3-rich flaxseed oil or fish oil on a broad spectrum of chronic common ailments in 32 volunteers, and on a variety of mental disorders in 12 volunteers.

Enter Omega-3s!

As to the remarkable outcomes, titles of two of Rudin's journal articles say it well: "The dominant diseases of modernized societies as omega-3 essential fatty acid deficiency

syndrome: Substrate beriberi." (*Medical Hypotheses* 8:17-47, 1982).

And "The major psychoses and neuroses as omega-3 essential fatty acid deficiency syndrome: Substrate pellagra" (*Biological Psychiatry*, 16(9):837-50, 1981).

The latter referred to the parallels between the mental/emotional disorders in the wake of U.S. underconsumption of omega-3s (w3s), with the similar progression, from neuroses to full-blown insanity, seen earlier in the century in *pellagra*, caused by widespread deficiencies of the B vitamin niacin and amino acid tryptophan. Orthodox psychiatry is just beginning to dip a toe daintily into these nutritional waters, while enlightened colleagues in the field are forging ahead with remarkable studies.

Enlightenment at Last!

Even before the 1980s, peerless scientists thought w3s well worth investigating.* As I followed their 'paper trail,' I felt they were granting me the keys to the kingdom -- I understood at last how nutrition worked!

The explosive theories of Rudin and the others suggested w3s weren't just any old fats, *but were missing links in a major hormonelike regulatory system*, existing in every cell and tissue including the brain, *and derived solely from w6 and w3 fats*. ...That we had the power to modulate this system by balancing our intake of w6 and w3. ...That we were eating 80% fewer w3s than our ancestors did. ...That the huge amounts of w6 oils and trans-fats we now consumed were creating a calamitous w6-w3 imbalance. ...And that this latter-day imbalance was a key player in the rise of modern ailments, not just heart disease but covering the spectrum from dandruff to depression.



I believe *The Felix Letter* was the first U.S. popular-style publication in 1983 to talk about these concepts, because my goal was--still is--to sort out stuff with relevance to health that can be acted upon by everyone. I see no purpose in waiting 15 to 50 years for complete accord among the experts about the food factors that, in fact, we should be increasing *right now* (w3s), or should be *reducing* (w6s) and *eliminating* (trans-fats).

Now, glory be! -- omega-3 sensibility is upon us bigtime. Mainstream magazines rhapsodize about flax oil and flaxmeal; breakfast cereals proudly feature flaxseed. In study after study fish, fish oil, flaxmeal, and flax oil keep 'coming up roses' for the heart, skin, joints, immune and reproductive systems, and, yes, the brain.

(All of this to let readers know advanced degrees aren't a precondition for common-sense.) □

SICKLE-CELL REVELATION!

Which leads me to an area where folk wisdom re nutrition needs badly to be resurrected. In *FLs 105/106* I described the struggle by Oji Agbai, PhD ND, to find acceptance among medical experts for *potassium thiocyanate* treatment in sickle cell disease. In both human and *in vitro* studies he's proven that thiocyanate inhibits formation of the abnormal long, rigid crystals of hemoglobin which distort red blood cells into fragile sickle shapes. These sickled blood cells disintegrate quickly, leading to severe anemia. They clog capillaries and cut off circulation, harming organs and tissues and causing unbearable pain. We're talking about *toddlers and young children* having to endure unimaginable suffering. It's a disease of the young.

Currently, doctors rely mainly on transfusions, antibiotics, and pain medication. Some sicklers are being treated with hydroxyurea, which offers promise but also problems. The riskiest and most expensive procedures involve bone-marrow and stem-cell transplants.

*My enlightenment came from worldwide studies (U.K., Australia, Norway, Italy, Japan, US, etc.) by early researchers like Hugh Sinclair, J Dyerberg, HO Bang, Michael A Crawford, James F Mead, Ralph T. Holman, William Lands, C Galli, A.J Sinclair, Howard Sprecher, Philip Needleman, David Horrobin, Nicolas Bazan, Anthony L Willis, E Aaes-Jorgensen, Wm.S Harris, Sandra and Wm E Connor, J Tinoco, MS Lampty, Peter C Weber, Rashida Karmali, Martha McMurry, SH Goodnight, T Sanders, PA Owren, G.Hamazaki, A Hirai, JR Vane -- and many more. Our deep gratitude to all of you and to the many current workers in this research endeavor.

In other words, there's nothing available that compares with potassium thiocyanate in simplicity, low cost, safety, and effectiveness, according to Dr. Agbai and an MD in Atlanta, Wm E Richardson, who employs it in his practice. The only human case study was published in 1932, recounting extraordinary success of potassium thiocyanate in maintaining steady relief from intractable pain in a young black sickler, after every treatment including high doses of morphine failed. (I described this fully in *FLs 105/106* and 82.)

A Stone Wall of Silence

So why is it being ignored? Simply put, I believe it hasn't gotten the green light for formal studies under orthodox medical auspices because potassium thiocyanate is unpatentable. It's listed in the standard pharmacopeia.

The thiocyanate part is a normal constituent of plasma and saliva, derived from plant foods that contain it, e.g., broccoli, sweet potatoes. Or it may come from *approximately 1200 edible plants that contain cyanide*, which the body handily detoxifies by transforming it with a sulfur molecule into thiocyanate. Why would any scientists in their right minds try to get funding [hah!] for exploring unpatentable, substances derived from plant foods?

I Learn About a Successful Study!

In *FLs 105/106* I implied *incorrectly* that other than the 1932 paper, there wasn't a single published study on potassium thiocyanate's antisickling capacities.

Robert G. Houston¹, science consultant for TV documentaries and staunch investigative journalist, straightened me out! He sent me a paper that changed the whole picture.

"Perturbants affecting gelation, rates of aggregation and solubility of sickle cell hemoglobin" was published in *Proceedings of the First National Symposium On Sickle Cell Disease in 1974!* The symposium took place in Washington DC that year, sponsored by the Sickle Cell Disease Branch of the National Institutes of Health, no less.

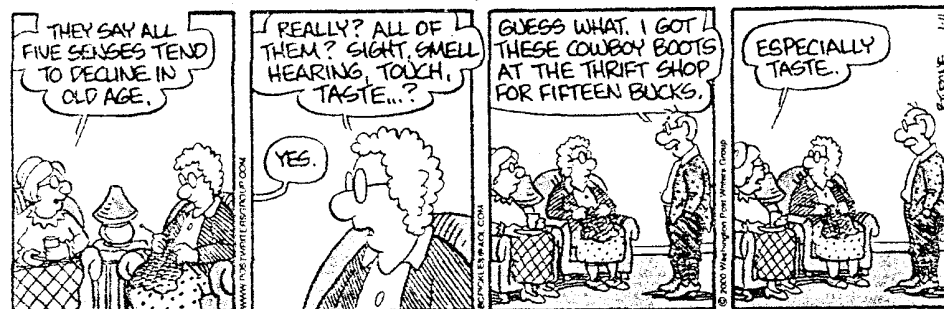
Study conclusion: thiocyanate was far and away the best antisickler of all likely ones tested -- its effects were "profound."

Can someone in the NIH and sickle-cell research community explain why this very promising in vitro study was never followed up, especially in light of the 1932 human success story?

Is it too strong to call this neglect dishonest, let alone a betrayal of young sufferers? Maybe it boils down to something I've suspected all along. In the USofA the business of health is mainly.....business. □

1. Houston has a remarkable chapter in a new book by science professor David J. Hess, PhD, *Evaluating Alternative Cancer Therapies: A guide to the science and politics of an emerging medical field.* Rutgers University Press, 1999.

Pickles/Brian Crane



AN EARLY REMEDY FOR HIGH BLOOD PRESSURE

Few MDs today are aware that *potassium thiocyanate was employed as a medical antihypertensive* in the 1920s, '30s, & '40s. That is, until the postWWII explosion in pharmaceuticals produced one hot number after another to deal with the condition. Most have impressive side effects, and fatalities are not unknown.

In those earlier years the AMA wasn't too keen about potassium thiocyanate, refusing to endorse it on the grounds of its toxic effects and incomplete proof of efficacy. But I have a slew of medical papers from that era saying the opposite -- that it worked reasonably well to reduce both diastolic and systolic pressures and relieve accompanying headache and dizziness.

Also, that once a system had been set up (around 1936) for monitoring blood thiocyanate levels, the use of dosages that maintained appropriate levels did not lead to toxicity. (There had been nonfatal and some fatal accidents because of too high levels.)

"Nature's Depressor Substances"

In 1941, researchers compared thiocyanate ("sulfocyanate") blood levels and blood pressures in 241 persons, observing a consistent pattern of higher thiocyanate levels with lower pressure, and vice versa. They also saw patients' hypertension responding consistently to potassium sulfocyanate.

Although they didn't necessarily relate this to thiocyanate-yielding foods, they concluded that sulfocyanates are present naturally in the body and that their study "suggests very strongly, even if it does not prove, that sulfocyanates are nature's depressor substances which help to stabilize the balance between hypertension and hypotension." [V.S. Caviness et al., *North Carolina Medical Journal*, Vol. 2, Nov. 1941.]

Toxicity Fears

In biochemistry and botany, cyanide-yielding plants (also called cyanogens or nitrilosides) invariably are dealt with as toxins or potential ones for humans as well as for grazing livestock. I don't have fantasies of being a one-writer whirlwind that'll turn this around, but I can lay out arguments for taking a longer view. The ubiquitousness of nitrilosides (about 1200 edible plants) and the existence of efficient detoxifying enzyme systems in humans and probably in most creatures do not appear accidental.

Cyanide awareness is very old. "Prussic acid" -- another name for cyanide -- released from bitter almonds was recognized centuries ago. Yet the nitrilosides are favored foodstuffs for many living creatures, as well as for humans before commercialization of foods took over, despite awareness since ancient times of their potential for poisoning, let alone death.

Sure, there are cautions in everyday consumption of cyanogens. Without adequate protein to provide sulfur amino acids (methionine and cysteine) for conversion to thiocyanate, nitrilosides can lead to nerve damage and other symptoms of toxicity. This phenomenon was well known in poverty-stricken areas where cassava (manioc), for instance, became the primary staple because protein foods were unaffordable. And too many nitrilosides and thiocyanate foods *without ample iodine* in the diet can cause serious thyroid deficiency.

Some familiar foods that provide cyanide and/or thiocyanate:

- Most fruit kernels or seeds (eg, apricot, apple, plum, papaya)
- Most beans and peas, more if sprouted (eg, mung, garbanzo)
- Most berries (eg, blackberry, huckleberry, raspberry)
- Flaxseed
- Chia seed
- Buckwheat, millet, sorghum
- Vegetables (eg, broccoli, kale, sweet potato. These contain only thiocyanate.)
- Among richest sources of cyanide plus thiocyanate are *manioc*, also called cassava or yuca; and *true yams*. (The latter are monocotyledons; so-called yams in U.S. are dicotyledons in the sweet potato family.)

A lethal oral dose of cyanide (hydrocyanic acid, HCN) may vary from **35 to 250 milligrams** for a 154-lb (70 kg) person, yet indigenous African and West Indies diets may commonly yield **20 to 100 milligrams** HCN throughout the day. Spacing of intake probably is protective against toxicity.

For those readers who choose to eat apricot kernels, rule of thumb is: *don't eat more kernels at a time than you would apricots.* One apricot kernel may release **1.6 milligrams** HCN; and 5 - 10 apricot kernels from **8 to 16 milligrams** HCN.

This could undoubtedly help boost blood thiocyanate to useful levels. Sounds good to me! **

An Intriguing Puzzle

Black Americans suffer from lethal hypertension on a colossal scale compared with all other racial groups. Sure, low income and stress undoubtedly contribute to this phenomenon. But here's something to ponder. Black Africans in rural Africa up to about 40 years ago rarely had high blood pressure even as they aged. A number of researchers marveled at its rarity, especially as later studies all show blood pressures commonly to be as high or higher than in white Africans, true especially of urban dwellers, but of rural Blacks too.

Aside from speculating on the increased stress of modern urban compared with rural life, none of these papers make what to me is the obvious connection: *Africans' diets have changed!*

In my files are lovely early studies of the traditional foods of Africa. Practically every other staple is a *nitrilioside!*

In modern Africa, instead of cyanogenic millet, African yam, manioc, and sorghum grain, people now use bread and rice as their main carbo -- not a cyanide molecule in a carload!

The North Carolina researchers noted in 1941 that some patients required much higher potassium thiocyanate dosages to stabilize their blood pressure. Is it possible that many Black Americans may need higher-than-average thiocyanate blood levels to stabilize their blood pressure, because the diet of their African (and West Indies) ancestors for centuries was so uniformly rich in nitriliosides ???

Where do we go from here?

In the 1970s when the Laetrile "scandals" hit the headlines, doctors lost their licenses and went to jail for offering this nitrilioside-derived medication to cancer patients. The stormy climate around Laetrile effectively closed off any potential research on the nitriliosides -- no cautious scientist would choose to be tarred with the anticancer Laetrile brush!

The nitriliosides may have anticancer properties, but as far as I'm concerned, that's neither here nor there. What nitrilioside and thiocyanate foods have been *proven* to do when they're ingested and raise blood thiocyanate levels is:

(1) help to prevent hemoglobin in red blood cells of vulnerable persons from sickling;

****By the way, cyanide ("prussic acid" or hydrocyanic acid) can poison an enzyme needed for respiration (oxygen utilization) in each cell, but only if the amount of cyanide taken overwhelms the body's detoxifying defenses. Besides thiocyanate formation, another detoxification pathway is the transfer of cyanide to hydroxocobalamin (vitamin B12) to form cyanocobalamin (another form of B12). Many substances that contain carbon and nitrogen can release cyanide (HCN) if burned under certain conditions. Smokers generally have higher blood levels of cyanate and thiocyanate than nonsmokers because each pack of cigarettes smoked releases anywhere from 250 to 10,000 micrograms of HCN! While blood thiocyanate lowers pressure, nicotine raises it.**

Pickles/Brian Crane



(2) act as "nature's depressor substances which help to stabilize the balance between hypertension and hypotension."

Right now, that's enough for me! If these two properties don't deserve a well-funded, substantial, ongoing, *longterm* body of research by universities and government labs (Yo! NIH, y'hear me?!), then something is seriously screwed. Maybe privately endowed foundations...?? Forget about the pharmaceutical giants doing it -- it's *food-related*; the stuff's not patentable.

Not to say that thiocyanate-yielding foods and supplements are the sole answers to the complex health problems in sickle cell anemia and hypertension. They may, however, be indispensable to nature's true *preventive* measures for these ailments. Thiocyanate may also offer a base from which safer treatments than those currently available can be developed.

So I guess it'll be up to all of us, hi- or lo-degreed, to rattle a few cages, share information with our doctors, talk to community and church groups and, above all, eat heartily of these blessed victuals! □

GOOD TIDINGS

"Scientists have discovered new nerve cells sprouting deep within the adult human brain, undercutting the ancient biological dogma that dead brain cells can never be replaced.

"Neurons -- the precious functional cells of the central nervous system -- have been thought to stop multiplying about the same time children lose their baby teeth, then gradually die off throughout adulthood.

"Now, it seems that certain regions of the brain may remain young -- or at least able to carry on a process known as 'neurogenesis' well into adulthood."

This *S.F. Chronicle* report of the joint work of researchers in Sweden and at the Salk Institute in San Diego appeared October 30, 1998, the scientists quoted as saying the human brain may retain "the potential for self-renewal throughout life."

A year later, confirmation comes from Princeton biologists Elizabeth Gould and Charles Gross (*Science*, October 15, 1999). Apparently, thousands of freshly born neurons develop daily and migrate to regions of the cortex that are responsible for how we think and who we are!

The scientists' expressed hope is that some day skillful medical techniques can be used to repair aged or damaged brains. I see an immediately attainable good: we can make sure we're supplying our kids' and our own brains, first of all, with the required primary fatty acid: w3 DHA, from fish, shellfish, sea vegetables, and/or supplements. Then come antioxidants (from fruits, vegetables, nuts, seeds, and supplements) to protect vulnerable new (and old) neurons against free-radical damage on the inside -- just as important as bike helmets for protecting the brain from the outside! □

THAT'S LIFE Mike Twohy

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"Regular or bioengineered menu?"

D'YOU SUPPOSE THEY'LL EVER SAY THEY'RE SORRY?

Two vitamins I get sentimental over are folic acid and E. Vitamin E got a 'quackery' label from the medical experts right off the bat, but everything I read by EV Shute & WE Shute, Canadian MDs. who reported on its usefulness and safety more than fifty years ago, made sense. I first learned about their work in 1955 when I read Adelle Davis' *Let's Eat Right To Keep Fit* (Harcourt, Brace & World, 1954), the book that whooshed through our lives like a tsunami and, 20 years later, swept me back to college for a degree in nutrition science.

The 'experts' finally are catching up with the Shutes as one study after another confirms how vitamin E protects the heart. Even the AMA says it does in one of their journals, *Archives of Family Medicine*, 1999;8:537-542, "The

