

FUNNY FATS IN MARGARINE

I bristle at the weasel-wording of television and magazine ads which trumpet margarine's "Freedom from Cholesterol!" as if it were the Emancipation Proclamation. Cholesterol *doesn't exist* in the plant kingdom, so of course margarine's oils, which come from seeds or nuts, can't possibly contain any. The ads don't tell you what margarine DOES contain. One of the least challenged advertising blitzes of the past 25 years has been the campaign to make the eating of margarine synonymous with healthy arteries. However, some of us still remember the old cigarette slogan "Reach for a Lucky instead of a sweet". Along similar lines, people tend to sneak butter guiltily, yet feel virtuous when they heap margarine on their toast or potatoes. "Look, no cholesterol!" they say. Never mind that the caloric content is the same as butter and that none of us should be eating gobs of ANY oils or fats. More importantly, margarine presents us with some very suspicious machine-made fats.

Improving on Nature

Before 1911, when Procter & Gamble opened the first oil hydrogenation plant in the U.S., Americans mostly used butter, poultry fats, lard, and some seed oils such as linseed and walnut in their kitchens. Hydrogenation employed chemical catalysts and high pressure to force hydrogen atoms into the oils, thereby "saturating" (hardening) them. The fact that few unsaturated fatty acids remained in the new margarines and shortenings didn't upset scientists at the time. Their full-scale worry began some 50 years later, when it looked as if the heart attack epidemic, which had started in the 20's and was peaking at the time, was related to the parallel rise in consumption of saturated fats. (Much of the increase, despite what we've heard, arose from the self-same hydrogenated vegetable, not animal, fats.)

Medical research was demonstrating that *polyunsaturated fatty acids* (PUFA) from non-hydrogenated vegetable oils had a

marked effect on normalizing high blood cholesterol levels. This stimulated a big push to increase them in our diets.

Foreseeing a golden future, the food-oil industry labored mightily to bring forth upon this earth an improved margarine, now "high in polyunsaturates." Neither the industry nor the majority of researchers has shown nearly the same passionate interest in probing *the weird new fats produced by the "improved" process and their effects on the human system.*

Phony Polyunsaturates

A few researchers, however, insist on stirring up the pot. Mary G. Enig, Ph.D., and her coworkers in Univ. of Maryland's chemistry department have analyzed the fatty acid composition of 220 food samples, primarily margarines, oils and shortening; plus a number of foods which use margarine, etc. in their prepara-

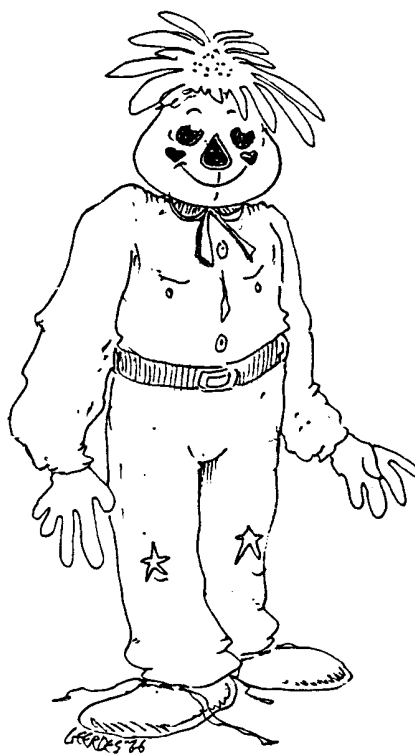
tion (1983). When the makers of margarine gloat in ads about their products' high polyunsaturate content, it seems they have neglected to mention that *lumped in with good PUFA are numerous trans and isomeric fatty acids in which normal molecular structure has been rearranged and distorted.* These "funny fats" provide calories but CANNOT function in the body in the way that the essential vitaminlike PUFA can and must. Moreover, they are easily absorbed into cell membranes, where they proceed to crowd out the genuine PUFA and interfere with delicately balanced cellular functions.

Enig noted in an earlier study (1979):

Recent research has shown that trans fatty acids in the diet may unfavorably alter lipid parameters that are considered important in atherosclerosis, and may alter membrane properties that play a role in resistance to cancer.

Enig's research group found that in stick margarines, *trans* fatty acids ranged from about 16 to 31% of total fat. Soft and diet margarines contained lower levels (around 7 to 17%), but many had isomeric fat levels as high as in the stick margarines. Perhaps none of this sounds very ominous, particularly if an individual is careful to keep margarine intake to a few teaspoons a day. The larger problem becomes clearer when we learn from Enig's listings that a great many commonly eaten foods are very high in "funny fats" *because margarines, vegetable shortenings, and partially hydrogenated oils are routinely used in their preparation.* Everyday items tested which contained very substantial amounts included breads, rolls, breading mixes, cakes, puddings, cookies, crackers, pretzels, pastries, pie crusts, commercial french fries, candy, and snack chips.

While partially hydrogenated oils had 7 to 9% *trans* plus some isomeric fats, and all vegetable shortenings were very high in both, the good news is that the following categories were "clean": mayonnaises, salad dressings, peanut butters, and oils which had not been lightly or partially hydrogenated.

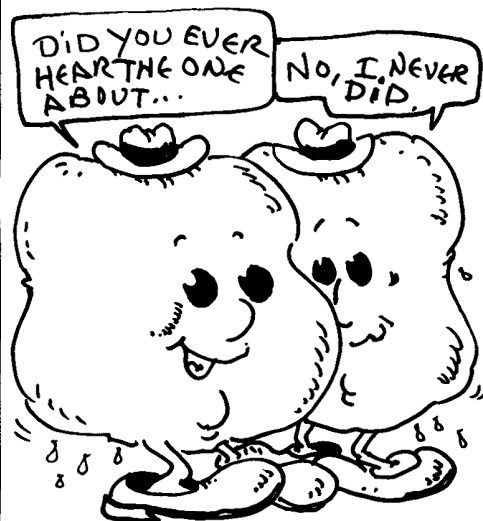


Safe and Easy

Abnormal *trans* and isomeric fats, originating solely from the diet, have been shown to accumulate readily in the tissues of animals and humans (1984, 1985). Since only a few maverick scientists are able to buck commercial interests by getting funding or even encouragement for research in this touchy area (think of the billions invested in margarine advertising!) it may be a long while before we learn the full effects when these abnormal fats usurp the role of PUFA in cell membranes. To stay on the safe side, one should avoid dietary sources of these suspect fats as much as possible. By using non-hydrogenated soy, walnut, and linseed oils as our staple cooking and salad oils, plus fatty fish and fish oils, we can flush the "funny fats" out of our systems. Studies show they eventually will leave our tissues if we don't get them from our diet and DO provide the essential PUFA adequately.

One suggestion: make your own "Easy Butter" with half butter and half soybean and/or walnut oil (I use some linseed oil, too, with no noticeable flavor change). Mix the oils into the softened butter, and keep in a covered bowl in the refrigerator. Happily, the flavor of butter dominates entirely. "Easy Butter" is low in cholesterol, economical, and provides omega-3 and omega-6 PUFA. Even so, modest amounts only are recommended. (See F.L. 20, 21, and 26 for guide to amounts and kinds of fats in a healthy preventive diet.)

Remember, the ostensible reason for doctors and nutritionists recommending margarine over butter was to increase polyunsaturated and decrease saturated fat intake. By using oils, mayonnaise, and Easy Butter instead (ALL IN MODERATION), we get our required quota of PUFA, negligible saturated fats and cholesterol, and NO FUNNY FATS! ■



BACK TO BACKS

A reader in Berkeley whose firm specializes in ergonomics ["ergonomics" - the study of interaction between the human body and work environments] cautioned me about dispensing advice to sufferers of low back pain. He was referring to my description in Issue 30 of a simple exercise that is helping my own back from going into the kind of spasms which had become a nasty pattern for the past two years. For over 15 years, he has worked with individuals with back and neck problems, as well as planning business and industrial environments designed both for optimum job performance and the good health of the folks doing the job. Not surprisingly, bad backs constitute a major challenge in the workplace. He tells me there is nothing simple about low-back syndrome, which is, in fact, "many different conditions and combinations of conditions. You could take 10 people who would describe their pains similarly ... and you might still be dealing with very different causes ... some ligaments 'register' pain while others don't, and the ones that are 'screaming' may not be the ones at the root of the problem ... I'm sure you wouldn't want someone to throw their back out even worse by following what you believed to be benign advice. Still a loyal reader, Jack Litewka."

Thank you, Mr. Litewka, I appreciate your concern that the exercise which worked for me might bring on a spasm for a fellow sufferer. In truth, under the "right" circumstances, activities as innocuous as tying a shoelace or sneezing may precipitate the crippling pain of an acute back episode. The ominous term, "ruptured disk," with its chilling images of pulpy spinal matter spewing all over the backbone, comes instantly to the victim's mind. Medical diagnosis may confirm his fears: he has a "slipped," "herniated," or "ruptured" disk — medically, they all mean the same thing. Something awful must have happened to his spine, for what else could cause such pain?

A Doctor Who Heals Backs

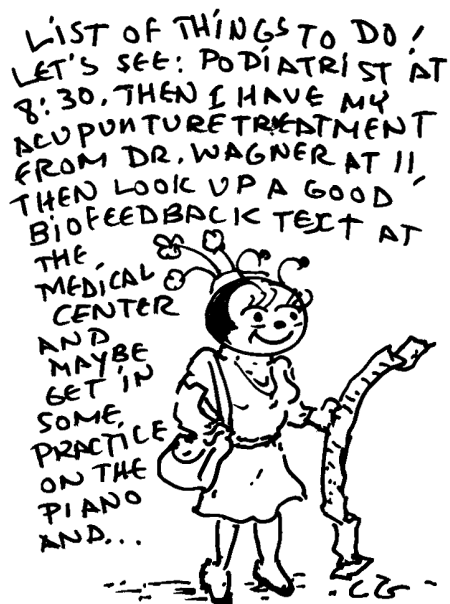
I am happy to report on an important new book by an orthopedic surgeon who, in 1973, established the first outpatient back-treatment facility in the United States. Edward A. Abraham, M.D., who teaches orthopedics at U.C. Irvine's school of medicine, has written a self-help guide,

Freedom from Back Pain (1986, Rodale Press, Emmaus PA 18049). It contains the most encouraging information I've seen on the subject and confirms my own tentative theory: what cripples most chronic back sufferers is NOT ruptured disks, **but fear of any movements that may intensify their pain.**

The book's statistics are hair-raising: **there are more than 70 million bad backs in the U.S. alone!** Eighty percent of Americans "will complain of spinal trouble before the age of 50." Back pain "is the single most significant factor in lost time on the job. No other affliction even comes close." It quotes an international authority on the ailment, Alf Nachomson M.D. of Sweden's Gotenburg University, who says the problem is worldwide, **yet next to nothing is being done to study the causes and cures.** Nachomson calls it the world's most expensive health problem, but says that, in contrast with research efforts in other disorders, **only a handful of scientists and physicians are engaged in investigating the causes and evaluating treatments.**

Can 200,000 Surgeries a Year be Avoided?

Soon after "slipped disks" were first identified in 1930, they were declared to be the cause of most lower back problems. Normally, cartilaginous disks provide cushioning between vertebrae. Problems may develop if a disk's pulpy core extrudes and presses on nerve roots. "Until the last decade, the scalpel was employed as the procedure of choice," Dr. Abraham writes. The specialists' reliance on the knife for over 40 years to deal with ostensibly slipped/ruptured/herniated disks was misguided, to put it kindly. **Today's improved diagnostic techniques show only 10% of back problems to be related to this condition.** Some specialists question even this figure. Dr. Hubert Rosomoff, chairman of neurological surgery at the Univ. of Miami, says that over 97% of individuals diagnosed as suffering from a herniated disk don't have the problem at all! Dr. Richard Kroenig, former director of the UCLA Pain Management Center, also questions the reliability of herniated-disk diagnoses. Both doctors agree that most of the estimated 200,000 surgeries performed annually in the U.S. to relieve herniated disks can be avoided, **and suggest that virtually everyone diagnosed with the condition can be cured without surgery.**



Why Backs Go Bad

So what in blazes causes so much pain and disability? Why does the first acute back episode presage, in so many cases, periodic 'repeat performances?' What turns it into a chronic condition, alternating between months of dull, gnawing backache, or acute episodes of white-hot pain when the back "seizes up", "goes out", or does whatever it does to convince the sufferer his spine is mortally wounded?

Do we add insult to injury by telling the individual it's all in his mind?

Abraham says only a small fraction of back problems are the result of true injuries that traumatize the spine. For these, the clinical findings are usually clear, with specific treatment (sometimes involving surgery) indicated. For the vast majority of back sufferers, the condition is associated with "long-time habit patterns that induce restricted flexibility in the musculature, culminating eventually in an acute attack of back pain." He notes:

To do its job, the body needs well-toned muscles and physical balance ... Should one muscle group be unable to perform due to restricted flexibility, other muscle groups try to compensate, thus imbalancing the natural flow of motion and adversely affecting the spine ... Instead of the natural flow of muscular contraction and release, a stressed muscle group constricts and can remain constricted for some period of time. This decreased flexibility affects all related muscle groups, including those directly associated with the spine's stability. In such a state, the simplest wrong movement at the wrong angle at the wrong time can be the final straw.

"Pain Behavior"

The initial incident really does affect the back, with enough minor tissue damage and spasm to cause considerable pain. Pain causes anxiety and anxiety adds stress, causing further muscle constriction. "Muscular tension, in turn, blocks healing. When we fail to experience remission, anguish over not getting better brings *more* pain." Undone chores and responsibilities pile up, adding to the tension. Medication offers the only way to cope. Abraham describes the pattern as "Pain Behavior" — a cycle in which fear of pain causes increasing muscular constriction, making physical activity even more difficult, adding to the fear, and so on.

The body responds to fear *with elevated levels of stress hormones, to activate the person's "fight or flight" mechanisms.* Unfortunately, the person can neither fight nor flee, because his back hurts like hell! Without vigorous exercise to eliminate the chemicals produced by these hormones, they stay in the system and add to the body's stress.

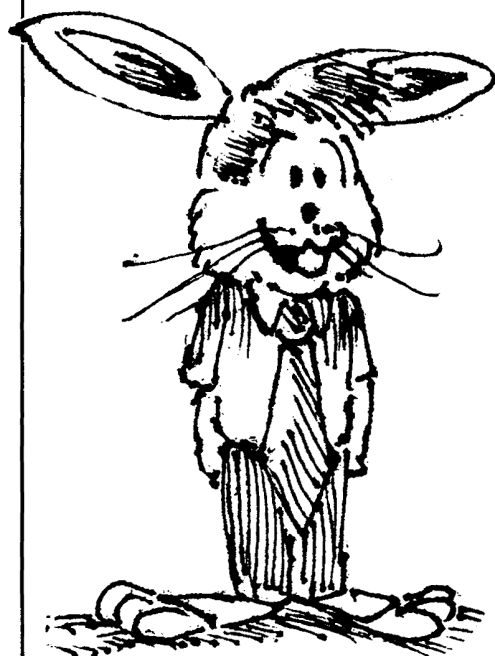
Trapped in this hopeless bind, to some sufferers surgery looks like the Holy Grail. They can always find a surgeon to accommodate their fantasy, even though medical confidence in the scalpel as the tool of choice in these circumstances has dwindled noticeably. The results in about 85% of operations employing newer surgical methods — much improved since 1930 — are considered successful to a significant degree, Abraham writes. Nevertheless, he adds, *one-third of all such operations will be followed by a second surgery.* One wonders how precise the criteria are for "success" in the initial surgical results if an encore is deemed necessary in so many cases.

Restoring the Back to Normal

Abraham says *long-term patterns of stress and tension usually underlie the first back episode.* "Keep in mind that in the first week following an acute attack, your goal is not to obliterate pain but to ease your pain and to restore function. Only increased activity alternated with relaxation can diminish physical pain." Most of all, the patient must respect the message his attack is giving him: it's time to examine how a cycle of destructive stress has put his well-being in jeopardy.

The solution to preventing the *first* attack, as well as lifting oneself out of a Pain Behavior cycle manifesting in a chronic back is (a) *a regular program of physical conditioning to develop well-toned back muscles*; plus (b) *the exercise of mental mastery over the problem of constricted muscles.* This is achieved ideally by "programmed relaxation," which is the ability to relax at will — anywhere, anytime, and under any circumstances. Abraham says everyone can learn this fundamental tool. It makes it possible to do the reconditioning exercises which permit back muscles to rebalance their function *and reduce abnormal pressures on the spine.* "Whatever the cause of stress," he notes, "relaxation breaks the destructive cycle and permits our bodies ... to process stress chemicalization out through normal channels of elimination."

Medication is to be avoided except in emergency situations. The book presents special breathing techniques and other forms of programmed relaxation to help patients manage pain without drugs. At Dr. Abraham's outpatient clinic in southern California, this program of "conservative therapy, aggressively applied," *has resulted in a majority of patients returning to work and active social life within several months*, regardless of whether their original acute back arose from muscular tension alone or from a herniated disk.



The book has useful, well-illustrated instructions for "programmed relaxation" techniques and conditioning exercises. It also provides a rationale for **biofeedback training**. Since the Bay area where I live is a mecca not only for valid unconventional health disciplines but also for a ripe assortment of hedonistic, satanistic, and mumbojumboistic 'therapies,' it has not been easy for me to sort out the gold from the dross. Consequently, I have deliberately trod a prim path, my skirts wrapped tightly around me to avoid contamination. Now, however, I'll cautiously seek out a course in biofeedback training. It should help me relax muscles I didn't know I was clenching! Once learned, the technique can be used on my own, sans electronic devices. The book gives directions for accomplishing the same ends without biofeedback, but I think I'm ready for a shortcut to help me teach my muscles to behave, once and for all.

By coincidence, a young relative came for the weekend as I was reviewing ***Freedom from Back Pain***, and began idling through the pages. Four hours later, I had to pry it out of her hands. Only a bit over 30, she's been fighting the bad-back demons for about three years, with visible attenuation of her normal athletic ability and stalwart spirits. "I can't believe it!" she told me. "I've been SO sure I had badly injured my spine somehow, even though no real abnormality was found. I KNOW my pain isn't imaginary . . . but now I can see that my symptoms and attitudes have become exactly as he describes them. I'm following the blueprint for 'Pain Behavior.'"

With full determination to end the cheerless cycle where fear of pain becomes a self-fulfilling prophecy, she has embarked on a program of mental and muscular rehabilitation. Each of us will draw on resources in our communities to implement and reinforce the book's basic plan. She left for home with a copy of the book under her arm and new optimism about restoring her flagging body's ability to respond crisply to commands, before too long!

70 Million Aching Backs Deserve a Break.

Forty years of infatuation with the drama of surgical intervention have not proven fruitful. Profitable for some, but not fruitful. It's time for the profession and the public to resist the quick fix promised by the scalpel and settle down to the mundane business of re-educating the mind and the muscles. Lukewarm medical rehabilitation programs that rely heavily on medication are losing patients to the alternative health professions. Acupuncture, Chinese and Ayurvedic medicine, and chiropractic, for example, have proven to be far more than stopgaps. They use non-invasive techniques, they don't depend on drugs, and they have long traditions of usefulness in back disorders. (The first three disciplines go back thousands of years.) What's wrong with combining the best that Western medicine *and* alternative health care have to offer? Ideally, the creative medical model Dr. Abraham uses to free the back sufferer from fear-driven Pain Behavior could work to its fullest advantage *in a wholistic outpatient setting*. Here, a deluxe smorgasbord of health-building skills would be available to the patient. In this multi-disciplined environment, the inexcusable gap in research on the world's most expensive health problem could be repaired.

Of course, I'm daydreaming! Even with 70 million aching backs out there, I don't see the lions of the AMA lying down officially, just yet, with the alternative-healthcare lambs.

On the other hand, there's immense appeal in the thought of low-cost community sponsored facilities along these lines, available to the citizenry in every neighborhood of every city and hamlet in the U.S. Considering the monumental cost of lost time and inefficiency in the workplace because of back problems, the project might pay for itself in the long run. But in terms of immediate financing, it occurs to me that if the issues were presented dispassionately to the electorate, 70 million voters — admittedly cranky and irrational because of their bum backs — would choose pain relief over Star War space shields any day of the week! ■

Felix Letter readers: I'm happy to report that ***The Nutrition Breakthrough of the '80's — the Omega-3 Phenomenon*** by Donald O. Rudin, M.D. and Clara Felix will be released in February 1987 by Rawson Associates of Scribner/Macmillan.



Mary G. Enig, et al. (1979). *Trans* fatty acids: concerns regarding increasing levels in American diet and possible health implications. *Proceedings of Maryland Nutrition Conference for Feed Manufacturers, March 15 & 16, 1979*.

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Illustrations are by Clay Geerdes and other artists as noted.

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